

affinis) 25 t, pink snapper (*Pagrus auratus*) 21 t, hapuku (*Polyprion oxygeneios*) 20 t, samson fish (*Seriola hippos*) 14 t, trevalla (*Hyperglyphe antarctica*) 12 t, cod (Serranidae) 8 t, West Australian dhufish (*Glaucosoma hebraicum*) 7 t, wobbegong (*Orectolobus* spp.) 6 t, queen snapper (*Nemadactylus valenciennesi*) 5 t and Australian herring (*Arripis georgianus*) 5 t. Fisheries along the south coast are concentrated around Albany, Bremer Bay and Esperance. Hapuku and redfish are targeted in deeper waters at the edge of the continental shelf.

South Coast Rock Lobster Fisheries

Management Summary

Esperance Rock Lobster Managed Fishery: This fishery operates between longitudes 120° and 125° E, catching the southern rock lobster, *Jasus edwardsii*, and a small quantity of various deep-sea crab species. Favourable rock lobster habitat supports a small but significant and relatively secure rock lobster fishery.

Windy Harbour/Augusta Rock Lobster Managed Fishery: Catch data cannot be released in this fishery as there are only two licensees and the public disclosure of this information would breach the confidentiality requirements of the *Fish Resources Management Act 1994*. Both western and southern rock lobsters, together with small quantities of deep-sea crabs, are taken from this fishery, and the catch data are included in the totals for the adjacent West Coast Rock Lobster Managed Fishery.

Other south coast rock lobster fishing endorsements: In addition to the two managed rock lobster fisheries on the south coast, significant catches are also taken by vessels authorised to fish outside of these areas. These vessels operate in two zones, one between the two managed fisheries and the other east of the Esperance fishery. They catch predominantly southern rock lobster, although small catches of western rock lobster, *Panulirus cygnus*, are also taken in the western zone.

These zones do not lend themselves 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 and catch varying from year to year according to changes in recruitment and relative abundance.

Interest in fishing for deep-sea crabs is increasing and the Department is planning to develop more formalised management arrangements for these species. A preferred option is to combine all the current arrangements for rock lobsters and deep-sea crabs under a 'South Coast Crustacean Managed Fishery'.

A draft application has been submitted for the south coast crustacean fisheries as part of Environment Australia's ecological sustainability reporting process under the *Environment Protection and Biodiversity Conservation Act*

1999. A final application is being developed which will be submitted to EA in 2004.

Governing Legislation/Fishing Authority

Esperance
Esperance Rock Lobster Management Plan 1987
Esperance Rock Lobster Managed Fishery Licence
Windy Harbour/Augusta
Windy Harbour/Augusta Rock Lobster Management Plan 1987
Windy Harbour/Augusta Rock Lobster Managed Fishery Licence
Other south coast endorsements
Fish Resources Management Regulations 1995
Regulation Licence granted under Regulations 125 and 126
Fishing Boat licence condition 105

Consultation Process

Department–industry meetings

Research Summary

Research in this sector involves 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.

South Coast Rock Lobster Fishery Status Report

Prepared by R. Melville-Smith

FISHERY DESCRIPTION

Boundaries and access

The boundaries of the Esperance Rock Lobster Managed Fishery (ERLF) 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 2001/02, 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 2001/02, 31 vessels were endorsed to fish in the GAB and Albany zones. Endorsements have been frozen since October 1994 and fishermen without ongoing catch history can be asked to show cause why their pot entitlements should not be cancelled. It is recognised that the Albany/GAB zones will never be a significant rock lobster fishery and are best managed as an adjunct to fishers' other diverse operations.

SOUTH COAST BIOREGION

Main fishing method

Rock lobster pots.

RETAINED SPECIES

Commercial production (season 2001/02): 66 tonnes

Landings

A catch of 34 t of southern rock lobsters was taken in the ERLF in 2001/02, a decrease of 15% on the catch taken in the 2000/01 season (40 t). The combined catch for the GAB and Albany southern rock lobster fishery zones in 2001/02 was 32 t, a decrease of 18% on the 2000/01 figure (39 t). Catches decreased from 7 to 4 t in the Albany zone and from 32 to 28 t in the GAB zone. As a by-product of the rock lobster fishery, 10 t of giant crabs (*Pseudocarcinus gigas*) (an increase of 100%) and 13 t of champagne crabs (*Hypothalassia acerba*) (a decrease of 7%) were landed in the Albany zone, while 2 t of giant crabs (a decrease of 60% over the 2000/01 figure) were landed in the ERLF.

Fishing effort

The nominal fishing effort levels in the ERLF remained unchanged in 2001/02 compared to 2000/01, at 67,000 pot lifts. Total effort for the Albany and GAB zones in the 2001/02 season was 103,000 pot lifts, a decrease of 12,000 pot lifts (10%) on the previous season's 115,000 pot lifts. Fishing effort decreased in the Albany zone from 45,000 pot lifts in 2000/01 to 24,000 pot lifts in 2001/02, and increased in the GAB zone from 70,000 pot lifts in 2000/01 to 79,000 pot lifts in 2001/02. Effort figures are confounded in the Albany zone, because an unknown proportion of the effort recorded there may have targeted deep-water crabs rather than lobsters.

Catch rate

Catch per unit of fishing effort for southern rock lobster in the 2001/02 season in the ERLF decreased by 17%, from 0.6 kg/pot lift in 2000/01 to 0.5 kg/pot lift in 2001/02. The combined catch per unit of fishing effort for southern rock lobster in the GAB and Albany zones in the 2001/02 season was 0.31 kg/pot lift, a decrease of 9% compared to the 2000/01 season. Catch rates in the Albany zone remained similar at 0.15 kg/pot lift in the 2001/02 and 2000/01 seasons, but decreased in the GAB zone by 20%, from 0.45 to 0.36 kg/pot lift.

Recreational component: < 13%

Estimates from mail surveys sent to a random selected sample of rock lobster licence holders suggest that the recreational catch of southern rock lobsters on the south coast is less than 10 t per year.

Stock assessment completed: Yes

Model outputs show that the ERLF fishery is stable at current annual catch levels of around 40 t, as achieved since 1998/99, but not at the 60 t levels that were experienced in the early to late 1990s (South Coast Rock Lobster Figure 1). There has been a substantial increase in effort in the recent seasons, for little or no increase in catch. One explanation for this may

be that there is localised depletion occurring. However, an alternative explanation may be that in the 2000/01 season, the maximum number of pots permitted per boat was increased from 60 to 90. Experienced fishers in this fishery had warned that it was not possible to effectively deploy more than 60 pots per day and this may be the reason for the decrease in catch per unit effort in the fishery. Future trends in catch rate are being closely monitored.

Catches in the GAB and Albany zones are small in relation to the vast stretch of coastline that they cover. The annual catch of rock lobster in the Albany fishery has shown an overall downward trend in recent years, despite a general increase in effort (South Coast Rock Lobster Figure 1). Landings in the GAB zone are from a number of shallow-water inshore areas which are dispersed along the coast. Catches from this zone in the fishery appear to have stabilised at around 20–30 t annually (South Coast Rock Lobster Figure 1).

Exploitation status: Fully exploited

Breeding stock levels: Adequate

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 WA waters probably makes an insignificant contribution to the southern rock 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.

For the secondary retained species, i.e. deep-sea crab species, there are management measures (legal minimum sizes, return of females carrying eggs) in place to protect the broodstock. Therefore, while the standing stock of these slow-growing and long-lived species may have been depleted by fishing several years ago, their broodstock has remained at acceptable levels.

NON-RETAINED SPECIES

Bycatch species impact: Low

The gear used in this fishery generates minimal bycatch and the design of the pots is such that they do not 'ghost fish' if lost.

Protected species interaction: Negligible

Rock lobster pots and ropes have minimal capacity to interact with protected species in this fishing area.

ECOSYSTEM EFFECTS

Food chain effects: Negligible

The rock lobster and crab catches represent a very small biomass, and any impact of fishing on the general food chain is expected to be minimal.

Habitat effects: Low

Rock lobster potting has a very low impact on the largely granite habitat over which the fishery operates.

SOCIAL EFFECTS

There are a large number of licensed pots in this fishery, but not a large number of active fishers. The nature of the fishery means that rock lobster and deep-sea crab catches alone cannot provide a livelihood. Most fishers use them to supplement income from other fishing activities, or supplement their fishing income with other non-fishing businesses or employment. In the Albany and GAB zones especially, fishers tend to vary their rock lobster and deep-sea crab fishing effort according to the local abundance of stock and market prices.

ECONOMIC EFFECTS

Estimated annual value (to fishers) for year (2001/02):
\$2.5 million

The beach value of the southern rock lobster fishery was about \$2.1 million in 2001/02, based on a beach price of \$31/kg. Giant crabs (\$25/kg) and champagne crabs (\$9.50/kg) added an additional \$400,000 to the catch figure.

The large amount of available pot fishing effort and resultant fishing competition, particularly in the Albany and GAB zones, discourages fishers from trying to specialise in this form of fishing or investing in the necessary fishing gear. In recent years, the increased interest in deep-sea crabs has encouraged some fishers to focus more on this part of the fishery, particularly in the Albany zone, and to exploit areas and species not traditionally targeted by rock lobster fishing.

As more fishers have exploited the crab stocks, yields have decreased, and it is expected that these resources will become just another small component of the fishery that is exploited on an occasional and opportunistic basis.

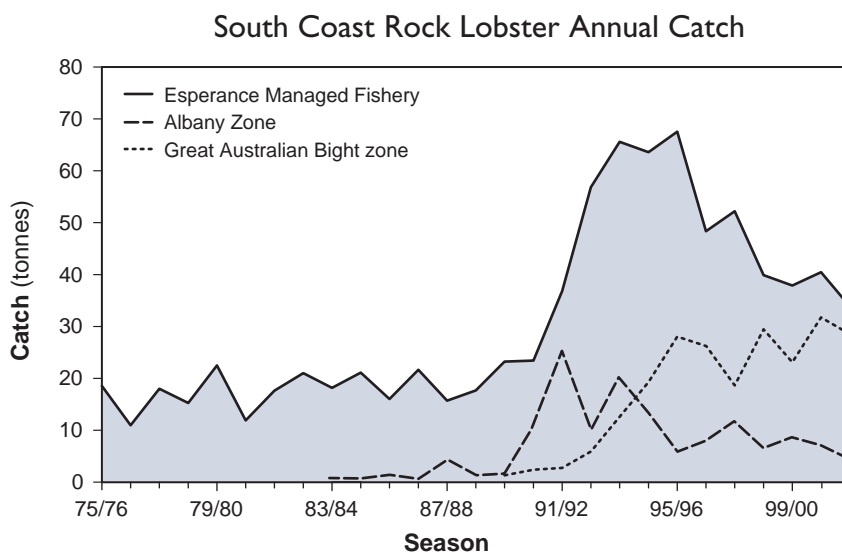
FISHERY GOVERNANCE

Acceptable catch range: **50–80 tonnes**

This range is simply based on the landings that have been reported for this fishery over recent years.

The ERLF 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.

If the management objective were to fish the Albany and GAB 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 might have the undesirable consequence of encouraging fishers to believe that these zones have the potential to support a viable and profitable stand-alone lobster fishing operation. The Department of Fisheries prefers to promote the view that lobster and deep-sea crab fishing on the south coast are best operated as part of diversified fishing operations or as an adjunct to fishers' other business activities.



SOUTH COAST ROCK LOBSTER FIGURE 1

Seasonal catches of southern rock lobster by management area, 1975/76 to 2001/02.

