

South Coast Rock Lobster

Description of sector

History of the fishery:

P. gilchristi South Coast Rock Lobster is one of three palinurid species commercially fished off the coasts of southern Africa. Of all three species it is currently only *P. gilchristi* that is capable of supporting a lucrative longline trap fishery along our southern Cape coast between Cape Agulhas in the south-west and East-London in the north-east. The south coast rock lobster fishery commenced in 1974 after the discovery of a commercially exploitable stock near Port Elizabeth. The influx of vessels led to a rapid expansion of the fishery, expanding to Cape St Francis and later towards Port Alfred and eventually to the Agulhas Banks in 1978.

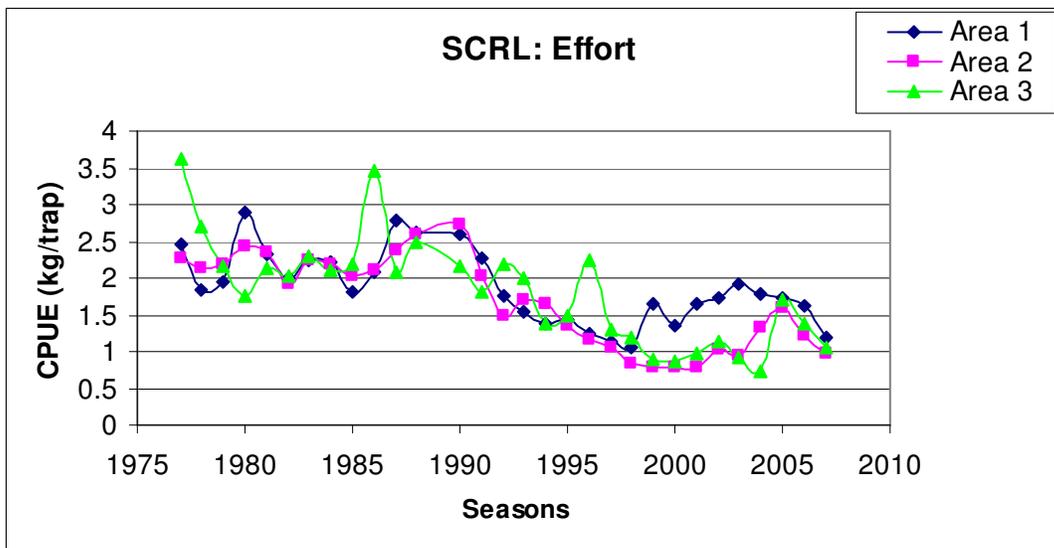


Figure 2. South Coast rock lobster CPUE by Area.

Catch history

Historically at first the south coast rock lobster yield was based on availability and effort until the 1984/85 season. A TAC of 450 ton tail mass was introduced. Catches and catch rates declined significantly between 1977 and 1979. The introduction of management measures such as only locally registered vessels, maximum number of traps allowed for various vessel size classes and a ban on the retention of berried females and soft-shelled individuals. This resulted in a resource recovery and a more rigorous procedure for stock assessment was developed in 1994.

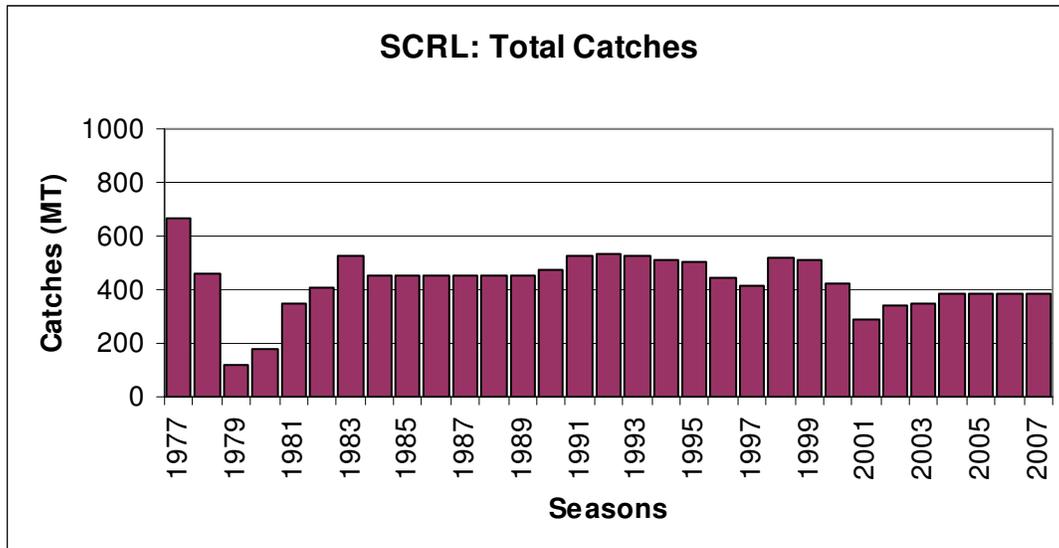


Figure 1. Historical catches of South Coast rock lobster.

Biological characteristics of main commercial species

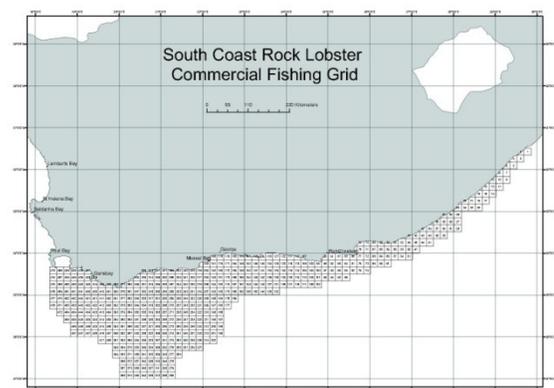
Geographical Distribution:

Restricted to South Africa between Cape Agulhas in the south-west and East-London in the north-east.

Habitat and Biology:

It is generally accepted that the bulk of the population occurs in three sectors; the eastern sector defined as the area east of Cape Padrone which includes Port Alfred and north-east of East-London, an area with a very narrow continental shelf. The central sector is defined as the area west of Cape Padrone and east of Cape St. Blaise which includes grounds such as Bird Island, Cape Receife, Cape St. Francis and the Knysna/Plettenberg

Bay area, an area with a gradual widening of the continental shelf and lastly the western sector, defined as the area west of Cape St. Blaise which includes the entire Agulhas Bank with Cape Point forming the extreme western boundary, the entire area considered to be a very wide continental shelf.



Many people believe that rock lobsters are scavengers. This is only partly true. Although lobsters are attracted to fish bait or dead organisms, they feed almost entirely on mussels and a variety of other invertebrates in their natural environment.

Features unique to species:

South Coast rock lobster (*Palinurus gilchristi*) supports the second largest lobster fishery in South Africa. The fishery operates in deep water (50 – 200 m) off the South Coast, between Cape Point and East London, and fishing gear is restricted to long-lines with traps. The fishery is capital-intensive, requiring specialized equipment and large ocean-going vessels. For this reason, it is restricted to a commercial sector.

Commercial fisheries

Research and Monitoring

The stock assessment model used for South Coast rock lobster (an age-structured production model) is based, *inter alia*, on size and age composition of the catch, somatic growth rates and population size estimates. A tagging programme supplies the critical growth and population size estimates as well as estimates of migration. Lobsters are tagged and released by trained observers during normal commercial fishing operations. Recaptured lobsters are returned by commercial fishers with details of the date and location of recapture. Tagging covers as wide an area and range of size classes as possible.

Scientific observers are also deployed aboard commercial South Coast rock lobster vessels to primarily collect data relating to catch composition, to take biological measurements such as length, sex and reproductive state, estimate catch and effort, report on gear used, observe fishing practices such as discarding, dumping and bycatch proportions. They also record the areas where fishing takes place, the number of traps used per day and the depth fished. The data are utilised in the annual stock assessment used to determine the TAC (Total Allowable Catch).

Commercial CPUE (Catch Per Unit Effort) data are captured from landing slips. These provide input data for TAC and TAE (Total Allowable Effort) management.

New research planned for this resource aims to use baited video fishing techniques to offer a standardised, non-extractive method for estimating relative abundance and behaviour of South Coast rock lobster. Very precise and accurate length and biomass estimates will also be recorded by stereo-camera pairs. The baited video camera traps will be used to monitor the effect that bycatch species have on catch rates, the fate of the bait and other bycatch discards. The video camera work would also be used to help in the measurement of metabolic rates, swimming speed and foraging behaviour of South Coast rock lobster.

Collaborative research between DAFF and the South Coast Rock Lobster Industry Association (SCRLIA) aims to examine the spatial and temporal distribution of berried females throughout the known distribution range and to investigate the possibility for the introduction of a fishery-independent survey (FIMS) for this resource.

The effect of benthic environmental factors on daily catches has not been investigated to date. New research is directed at establishing these relationships.

Management Strategy

The fishing season for South Coast rock lobster is year-round, extending from 1 October to 30 September of the following year. The management strategy is a combination of TAC and TAE. The TAC limits the total catch and is based on an annual resource assessment, whereas the TAE is measured in fishing days allocated to each vessel. A vessel may fish until its fishing days expire or its quota is filled, whichever occurs first. The number of days spent at sea by each vessel is monitored. Catches may only be off-loaded in the presence of a Marine Control Officer and the catches are weighed at designated off-loading harbours. Skippers must, at the conclusion of each trip, provide DAFF with accurate daily catch rate statistics.

The scientific recommendations for catch limits are based on an OMP (Operational Management Procedure) which was introduced in 2008 and “retuned” in 2010. The objectives of the OMP are to keep interannual TAC change restricted to 5% and to increase the spawning biomass of this resource by 20% over the next 20 years.

Current Research

- Biochemical and physiological indicators for growth and reproduction of South African rock lobsters
- Separation of stocks of SCRL by means of genetic methods
- Impact of ocean acidification on growth and reproduction.

Publications on beneficiation (chronological order)