Oceana Sustainability Report 2021

Status and Management of

West Coast Rock Lobster and Squid

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1 West Coast rock lobster: TAC determination for 2020/2021

The global TAC is divided amongst different sectors each of which is further divided and allocated to the following super-areas:

- Areas 1 and 2 (Port Nolloth and Hondeklipbaai)
- Areas 3 and 4 (Lamberts Bay and Elandsbaai)
- Areas 5 and 6 (Saldanha Bay Area)
- Area 7 (Dassen Island); and
- Area 8+ (Cape Point, and east to Gansbaai).

In recent years the management of the resource has departed from the application of an Operational Management Procedure (OMP) and has used an ad hoc approach that has broadly been informed by a landmark legal case in which the judge affirmed the need for sustainable management of the fishery. DFFE's scientific working group has interpreted this ruling as a requirement that the fishery must be managed on the basis of an ability of the resource biomass to growth above a 2006 reference level.

Over the recent period management deliberations about the resource have become increasingly dominated by consideration of past and likely future levels of IUU fishing. The 2021 deliberations on the 2021/22 TAC have been no exception to this.

The levels of IUU fishing are considered to be composed of a component that is exported and another component which is sold on the local market. The estimates of the export component are based on export/important figures reported to COMTRADE and as worked up by TRAFFIC. This year a new approach was developed to estimate the local sales component. This approach involved the compliance data – these are data that are gathered about the levels of policing effort and the scale of confiscations of West Coast rock lobster. A very important component of the calculations is the assumption that the level of IUU in the future is the same as the last value in the time series.

1.1 Management Considerations for 2021/2022

During 2021 new stock assessment calculations and forward projections of resource performance were run using updated results for the following inputs:

1. Statistically standardized CPUE trends.
2. FIMS estimates of resource abundance.
3. Catch at length information from FIMS and from catches.
4. Growth rate calculations based on the OLSPS Marine moult probability model.
5. Traffic estimates of IUU fishing catches that are exported.
6. Trends in total IUU catches based on confiscations and policing effort data, collectively known as 'compliance data'.

The main features of these data are that they are less optimistic than one might have expected on the basis of resource stock assessments last run in 2019. Consequently, the assessment results are more pessimistic than in previous years. In particular, whereas previous stock assessment results have suggested that there is scope

for both a legal catch and growth in resource biomass between 2006 and 2025, for all assessment model options investigated during 2021, even if the legal TAC is set to 0 MT, there is no resource growth between 2006 and 2025.

To partly address this complication, the scientific deliberations have accepted that the definition of sustainability by the legal judgement would be satisfied if there is resource biomass growth between the 2021 biomass level and the 2025 biomass level, and not the more restrictive 2006 to 2025. This then allows for scope for continuation of commercial fishing. A further issue that has been accepted at SWG level is that the reduction in the TAC can be phased over more than one year to lessen the socio-economic burden of these reductions.

It is likely that the scientific recommendations for the 2021/22 fishing season will include a substantial reduction in the TAC compared to the 2020/21 level of 837 MT. This will most likely be a reduction of between 20% and 30%. However, as in previous years, the SWG is likely to submit more than one option to decision makers, so the final potential outcome spans a broad range of possibilities as things stand at the time of writing.

The West Coast Rock Lobster Association (WCRLA) has resubmitted its proposals that a secondary control measure based on seadays be put in place for the fishery. These proposals are meant to be an addition to the shortened fishing seasons which have been in place in recent years. The intent of the seaday proposals is to put in place enforceable regulations to ensure that fishing vessels do not spend more time at sea than would be required to easily land their quota.

The WCRLA has also proposed that experimental work be carried out on the commercial trap to see whether a design can be developed that substantially reduces the quantities of undersized lobsters raised to the surface during trap fishing operations. This involves inserting escape gaps into the commercial trap.

These proposals from the WCRLA have the potential to substantially improve prospects for the resource.

The trend in the WCRL global TAC for the period 1991/1992 to 2020/2021 is shown in Figure 1.

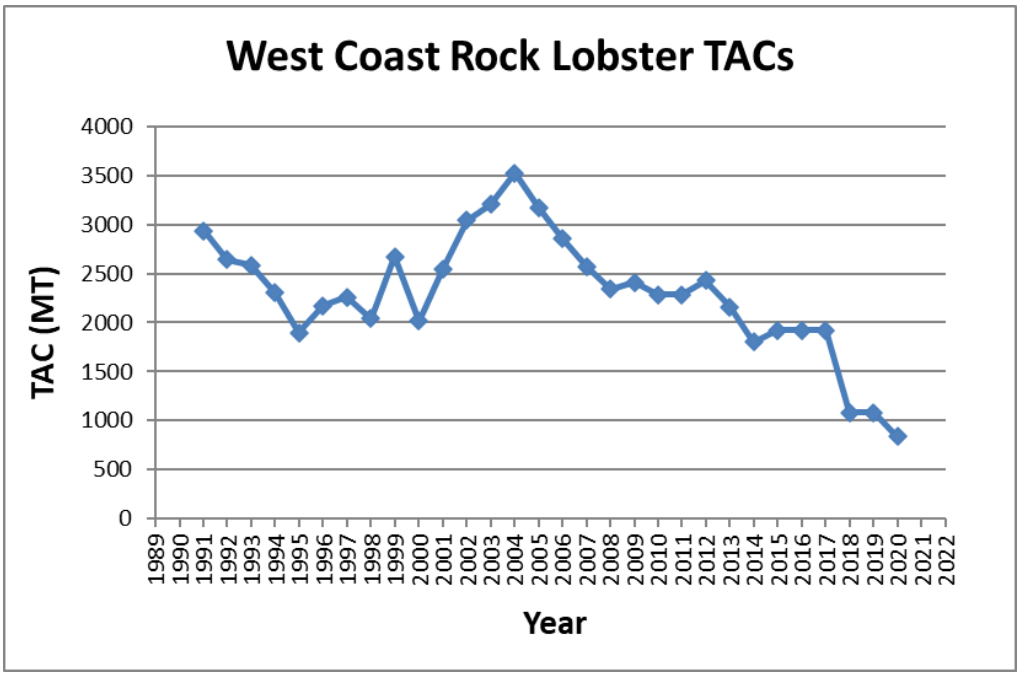

Figure 1. TACs for the West Coast rock lobster resource, 1991/1992 to 2020/2021 fishing seasons. In this plot 1991 refers to the 1991/92 fishing season.

2 South Coast Rock Lobster: TAC Prospects

Although, like the West Coast rock lobster fishery, also based on the exploitation of a spiny rock lobster species and stock, the South Coast rock lobster is a capital intensive and high-cost fishery, features more commonly associated with a trawl fishery. The SCRL fishery is conducted from 7 vessels which range in length from 30 to 40 metres and deploy between 3500 and 6000 plastic traps per vessel. These plastic traps are deployed along a main line roughly 2 km in length and spaced such that each line carries between 150 and 200 traps. A typical set involves the deployment of 20 such lines and the usual configuration is to deploy two sets of 20 lines which are hauled on alternative days with an average soak time of 48 hours. Fishing depth ranges from 100 to 250 metres. Traps are winched collectively by line. Catch rates in the order of 1 lobster per every three traps per set are typical in this fishery, yielding catch rates in the order of 0.1 kg / trap / pull on a tail weight basis. Crew complements per vessel vary between 25 and 40. The SCRL fishery is therefore a complex and high-cost operation where running a vessel above its breakeven point requires careful management of vessel schedules, the selection of fishing locations, and capital financing.

The South Coast rock lobster (SCRL) fishery is managed by a combination of input and output controls. The output control is a TAC with associated IQs (Individual Quotas), and the input control is a Total Allowable Effort (TAE) which is a limitation on the number of fishing days. The TAC is the primary control measure. The TAE, based on a fishing day allocation, is a secondary measure. Up until the 2015/2016 fishing season, the TAE was designed to be an active constraint on the fishery roughly 1 in 20 years. An important development during 2015 was a revision of the effort controls (TAE) used in the management of the fishery. Up to 2014 the TAE was set on the basis of a 1:40, pool out basis. This means that the effort control, expressed as fishing days, was at a level of "tightness" that only in one year out of 40 would the industry have difficulty landing their TAC, because effort levels were too low. The pool out aspect means that a 10% buffer of fishing days would be held in reserve to assist worthy applicants with additional extra-ordinary effort. This pool amount is added on to the basic 1:40 years calculated number of fishing days. During 2015 as a result of an initiative by DAFF and an agreement between DAFF and the South Coast Rock Lobster Industry Association, the basis for the TAE was tightened to a level of 1:20 "Pool-In", where the pool of 10% is subtracted from the basic number of fishing days calculated.

The TAC for the fishery is being managed by means of an OMP in which the TAC is capped at 450 MT, and with an objective to rebuild the spawning biomass by 30% over the period 2006/07 to 2025/26, an increase in the rebuilding amount of 20% used in the previous OMP.

The following data are used in the management of the resource:

1) Catch-per-unit-effort – measured as kg tails per trap set
2) Catch-at-length data
3) Tagging data

The SCRL OMP is presently under revision and a new formula will be developed in time to be used to set the 2022/23 TAC.

2.1 Recent Past TAC decisions, and the Likely TAC Outcome for 2021/22.

2.1.1 TAC 2019/2020

During 2020 the OMP for the SCRL resource, revised in 2019, was applied. The 2019/2020 TAC advice was for a TAC of 321 MT, and the Minister followed these recommendations and set a TAC of 321 MT tail weight.

2.1.2 TAC 2020/2021

For the 2020/2021 TAC positive trends in CPUE in 2 out of 3 areas, viz. at Area 1E and Area 2+3 (see statistical areas used in the management of the resource in Figure 3) resulted in an increase in the TAC to 337 MT.

2.1.3 TAC 2021/2022

Further increases in the CPUE have been experience in the fishery and these are likely to result in a TAC for the 2021/22 season of 354 MT, based on an independent application of the known OMP formula to the known CPUE trends.

Figure 2 shows the TACs since the 1989/1990 fishing season, including the likely figure of 354 MT for the 2021/22 fishing season.

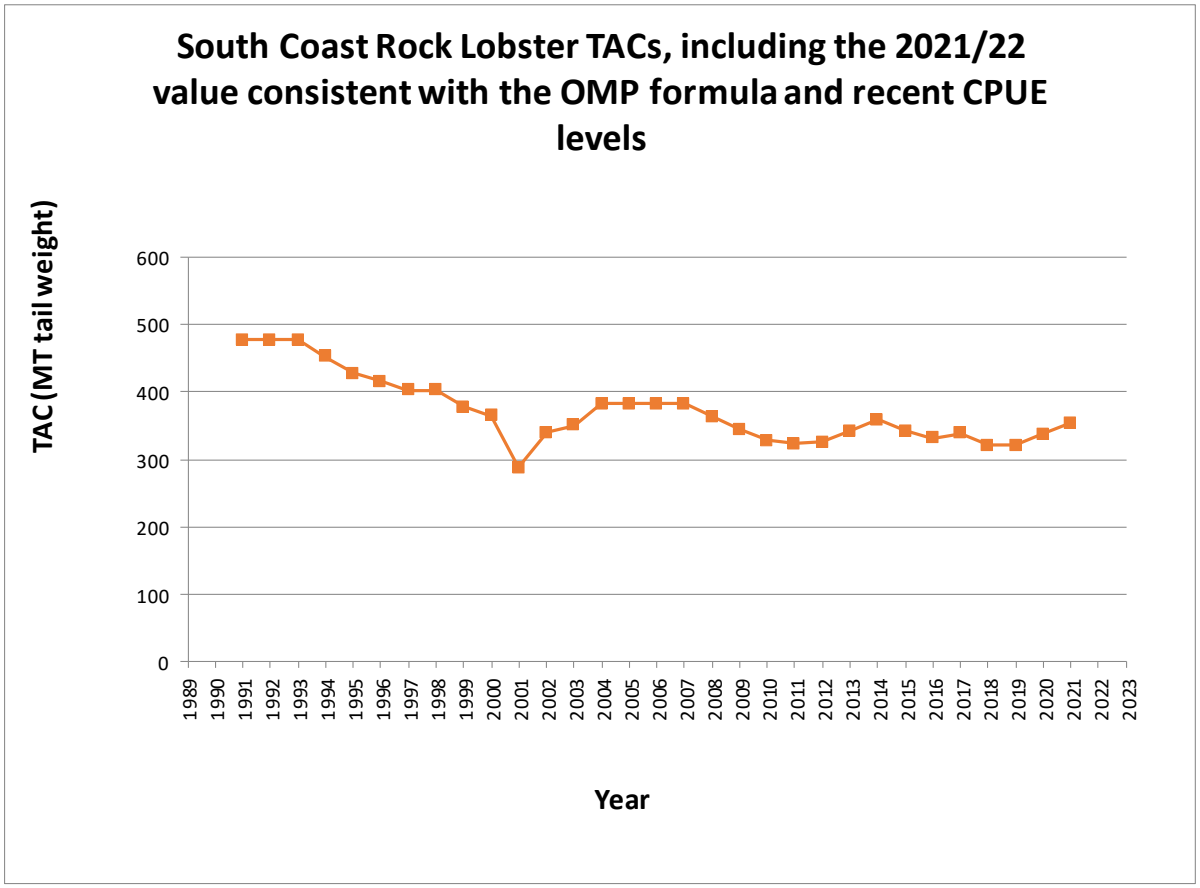

Figure 2. TACs in the South Coast rock lobster fishery 1989/90 – 2021/22.

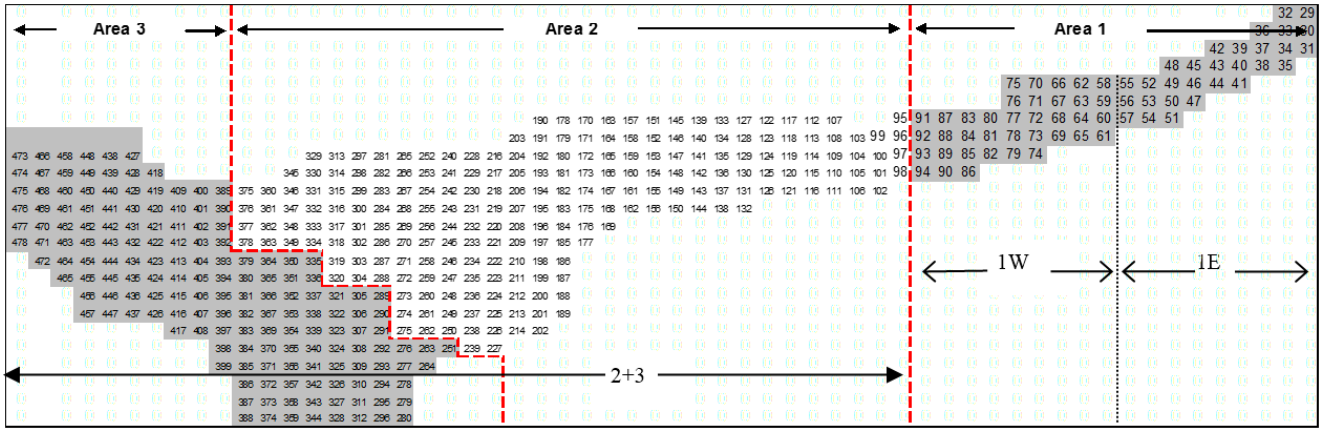

Figure 3. The fishing grounds showing the statistical areas that are used in the formulation of scientific advice for resource management for the South Coast rock lobster resource.

3 Squid Jigging Industry

The fishery is an effort-controlled fishery, where effort is managed by a combination of vessel and crew allocation permits and closed seasons. A safe effort level is estimated by mathematical models which use the following input data:

- Jig catch data
- Trawl catch data
- Jig CPUE data
- Trawl CPUE data
- Spring survey biomass index from demersal trawl surveys
- Autumn survey biomass index from demersal trawl surveys

The management of the resource was reviewed at an international workshop held at the University of Cape Town in 2012. Some of the scenarios submitted to this meeting suggested that the scope for effort increases in the fishery was limited.

The following is a summary of important milestones in the fishery:

- Total effort in the fishery rose between the period 1995 to 2010, while the number of crew permits in the fishery remained unchanged and the number of vessels was reduced. The catch rates peaked in the period 2008 and 2009 as did effort levels despite the existence of an additional closed season of 6 weeks duration in 2008, 2009 and 2010.
- From 2010 to 2013, catch rates declined to a low point. Although it may be that the effort level reached a point at which it impaired the recruitment reproductive capacity of the resource, similar declines in the availability and/or productivity of other resources (notably sole and horse mackerel) at about the same time suggests that the experience in 2013 was more likely an environmentally driven event.

The mathematical models of the resource suggest that the effort level in 2010 was 15%-20% higher than would produce a 5% chance that the 2022 resource biomass would fall less than 20% of the pristine resource biomass. Any appraisal of this result needs to recognise the semi-arbitrary nature of this risk measure. Nevertheless, this was a motivation for proposals for effort reductions in the fishery.

Two approaches to reduce effort were considered:

- **Reduce crew permits only:** One was to eliminate vessels which had previously under-utilised their opportunities (i.e. days at sea) in the fishery. Under this approach the required 15 - 20% reduction in effort (to 250 000 person days) is achieved when the total number of crew permits are reduced by 57%. This calculation assumes that the vessels which remain in the fishery utilise an average number of fishing days as typical for each vessel in recent years.
- **Introduce an additional 4 month closed season, reduce crew permits slightly:** Another approach considered to achieve a target effort level of 250 000 person days was to declare an additional 4 month long closed season, coupled with eliminating vessels which previously underutilised the time available for fishing. Under this approach the number of crew permits are reduced by about 7.6% from 2422 to 2238 crew permits by eliminating vessels that have underutilised seadays in the past. This calculation assumes that the remaining vessel do not increase their seaday usage per month beyond what was typical in recent years for the remaining open period of fishing.

Managers are concerned about latent effort in the fishery which could increase effort levels. The reality of latent effort is however strongly contested by industry representatives, they suggest that the data are either incorrect and/or that the majority of vessels are already turning trips around at close to the maximum level.

At the present time it is accepted by scientists that there is over-capacity in the squid sector. In the past this has been the motivation for the implementation of additional closed seasons. More recently DFFE have signalled that they want to put in place a control measure based on the number of person days per rights holder. This will limit effort in the sector in terms of the "number of sea days" per right holder as well as reducing the number of crew in the squid sector in the future.

Recent figures show that the presently the squid fishing sector employs 2443 crew and is restricted by a TAE limit of 295000 person days. The rights in this fishery have been under review and this process has culminated in a decision by DFFE. Originally, as part of this review, DFFE had proposed that the effort be apportioned, 75% of the TAE (221250 person days) to the commercial sector, and 25% (73750 person days) to small-scale fishing. Adjustments have however been made and more recently, according to an announcement by the Department of Forestry, Fisheries and the Environment (DFFE), the decision is to give small-scale fishers 15% of the Total Allowable Effort and 85% to the commercial sector. DFFE however wish to review this apportionment annually with a view to moving towards their original proposal for a 25%:75% split.

In addition to the TAE management of the resource, the fishery is closed in the months of April, May and June, as well as for a five-week period between 19 October and 23 November.

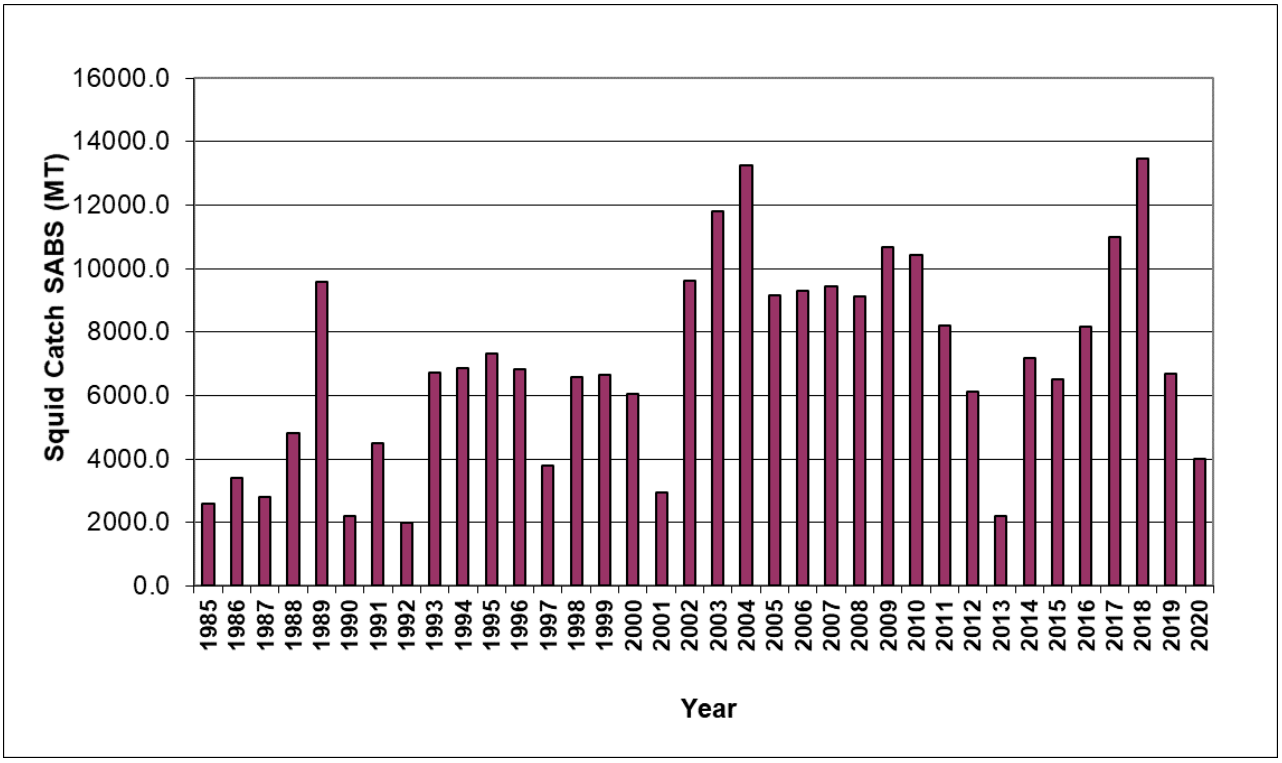

Figure 4. Catches in the Squid Jigging Fishery 1985 to 2020.