



Oceana Sustainability Report 2023

Status and Management of

West Coast Rock Lobster and Squid



1 West Coast rock lobster: TAC determination

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 grow 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 2023 deliberations on the 2023/24 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/import figures reported to COMTRADE and as analysed and summarized by TRAFFIC. In addition the final estimates make use of so-called "compliance data", which are data that are made available about the levels of policing effort and the scale of confiscations of West Coast rock lobster.

The basic assumption is that the trend in the total amount of IUU in the fishery is given by the statistically determined measure of the 'confiscations/unit of policing effort'. The total IUU is assumed to be comprised of the sum of an export only and a local sales only component. It is assumed further that the export component of IUU is as given by the difference between recorded exports from South Africa and the imports from South Africa recorded by all importing countries. The local sales of IUU are then determined mathematically for each year by selecting values that, when added to the export figures, gives a trend that matches the confiscation/policing effort trend as closely as possible.

For the purpose of projecting into the future it is assumed that the level of IUU will remain the same as the last available value in the time series.

In 2021, a TAC of 700 MT was agreed for the 2021/22 fishing season. The numerical calculations that supported the 700 MT TAC for 2021/22 fishing season were predicated on the assumption of a TAC of 550 MT for 2022/23 and 400 MT for 2023/24 and beyond. However it was acknowledged that the levels of 550 MT and 400 MT would be re-examined during 2022 and re-evaluated based on new information gathered since 2021. In 2022 a TAC of 550 MT was set, consistent with the down approach of 700 MT; 2021/22, 550 MT; 2022/23 and 400 MT; 2023/24 used as the basis for resource projections in the second half of 2021. This suggests that the TAC for 2023/24 will be 400 MT. However new calculations were carried out during 2023 suggesting that DFFE were willing to relook at the situation before following this earlier suggested TAC.

1.1 Management considerations for 2023/2024

During 2023 new stock assessment calculations and forward projections of resource performance were run using updated results for the following input quantities:

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'.
7. Projections from the stock assessment model.

In general these indicators of resource performance have turned very negative over recent years and this is reflected in the stock assessments which estimate the resource to have declined by about 50% since 2006 and to be now in the region of 1-2% of its pristine biomass level.

An important feature of the scientific deliberations during 2023 was that it was clear that the definition of sustainability consistent with the legal precedent was far from set in stone.

Sustainability means in effect that the resource biomass should remain constant or increase under catches in the future. One aspect of this is, "Relative to what starting point?". When using a 2006 starting point then the total exploitable biomass has reduced substantially over time and the resource has clearly not been managed sustainably over that time. But using a starting point of 2022, sustainability in the future can be achieved at levels of TAC in excess of 500 MT (assuming this is the level used for the future). Faced with this, there was nevertheless, given the strong negative indicators for the resource, a view that a substantial reduction in the TAC, say 10 – 20%, should be implemented. This suggested a TAC for 2023/24 in the 400 to 500 MT range. A figure halfway of 450 MT therefore seems to be a reasonable expectation, however at the time of writing the TAC has not been announced.

Note that during these deliberations as has been the case in recent years, the West Coast Rock Lobster Association (WCRLA) restated 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. 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 2023/2024 is shown in Figure 1, assuming a TAC for 2023/24 of 450 MT (which for reasons explained is an assumption).

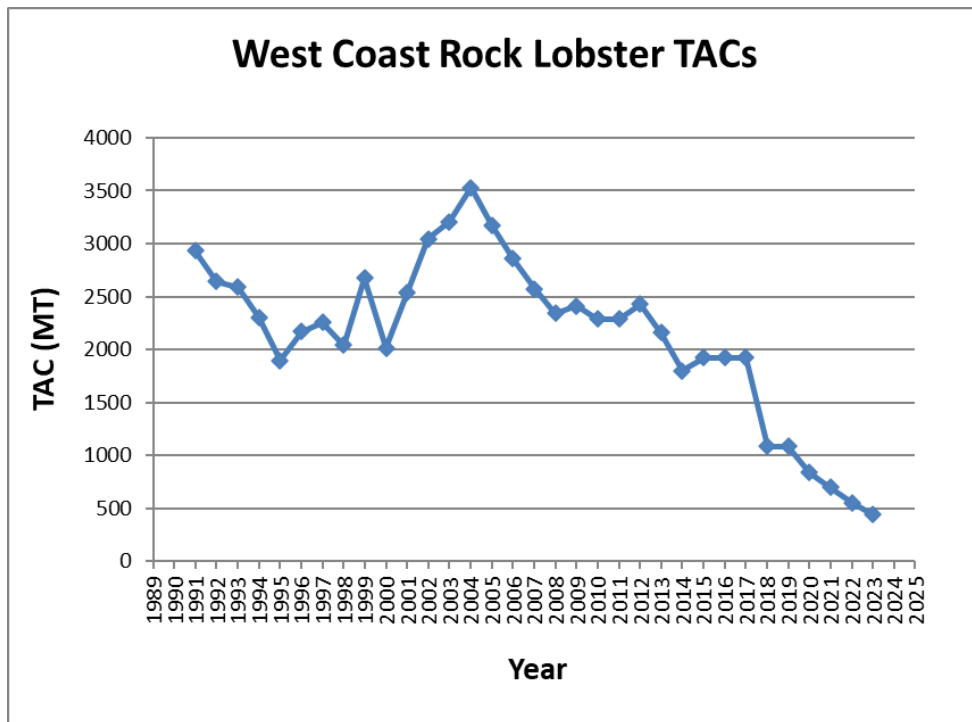


Figure 1. TACs for the West Coast rock lobster resource, 1991/1992 to 2023/2024 fishing seasons. In this plot 1991 refers to the 1991/92 fishing season. The value of 450 MT for the 2023/24 fishing season is an assumptions since the Minister had not made an announcement at the time of writing.

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.

Until the 2022/23 fishing season the TAC for the fishery was 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. For some years now the intention has been to revise the OMP but because of time pressures due partly to demands for technical input on the management of the WCRL fishery, this has not happened. For the 2023/24 TAC decision however an interim approach was taken which departed from the OMP, with a view to initiating the revision of the OMP in October 2023 for determination of the 2024/25 TAC decision.

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

2.1 Recent past TAC decisions, and the TAC outcome for 2022/23.

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.

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.

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.

TAC 2022/2023: During 2022 the CPUE, catch at size and stock assessment models for the resource were updated. The CPUE data were updated to include the information for the 2020/21 fishing season and this shows a continuation of the very positive trends in CPUE in the fishery. As regards the results from the stock assessments these also continues to show the resource at very healthy levels, with depletions in the order of 41%. As a result of these very good indicators for the resource, the TAC for 2022/23 calculated from the OMP formula was a 5% increase to 372 MT.

TAC 2023/2024:

Scientific deliberations on the 2023/24 TAC took place in the context of the following:

1. That the OMP had outlived its usefulness and needed to be revised, but time constraints had prevented this from happening
2. That resource indicators, primarily CPUE trends, over the last ten years had been very positive.
3. That the stock assessment results were very sensitive to the weighting of size data but nevertheless positive overall.

Based on the above, the DFFE scientific working group agreed to investigate whether the mathematical resource projections suggested that a TAC increase of 5% would be sustainable and reasonable. The calculations that were returned suggested that this was indeed the case. The 2023/2024 TAC will therefore be 391 MT.

Figure 2 shows the TACs since the 1989/1990 fishing season.

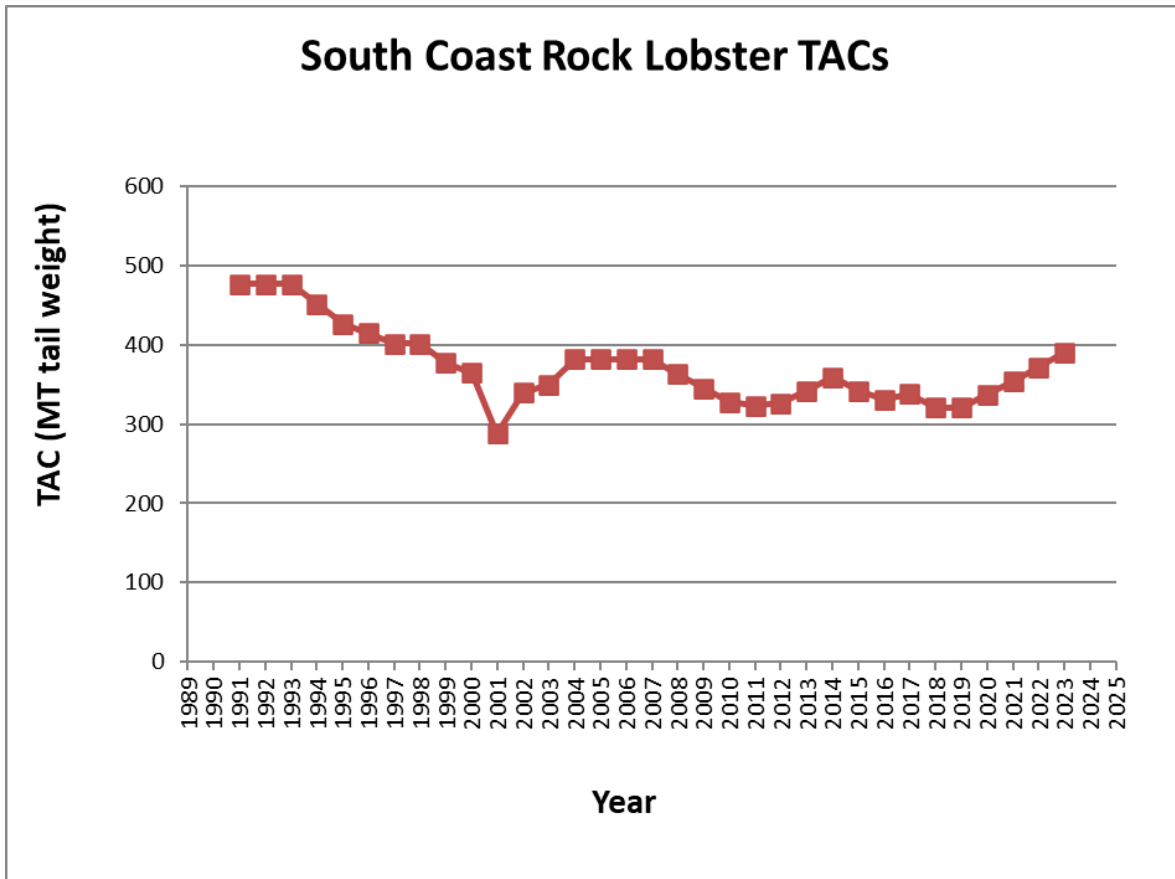


Figure 2. TACs in the South Coast rock lobster fishery 1989/90 – 2023/24..

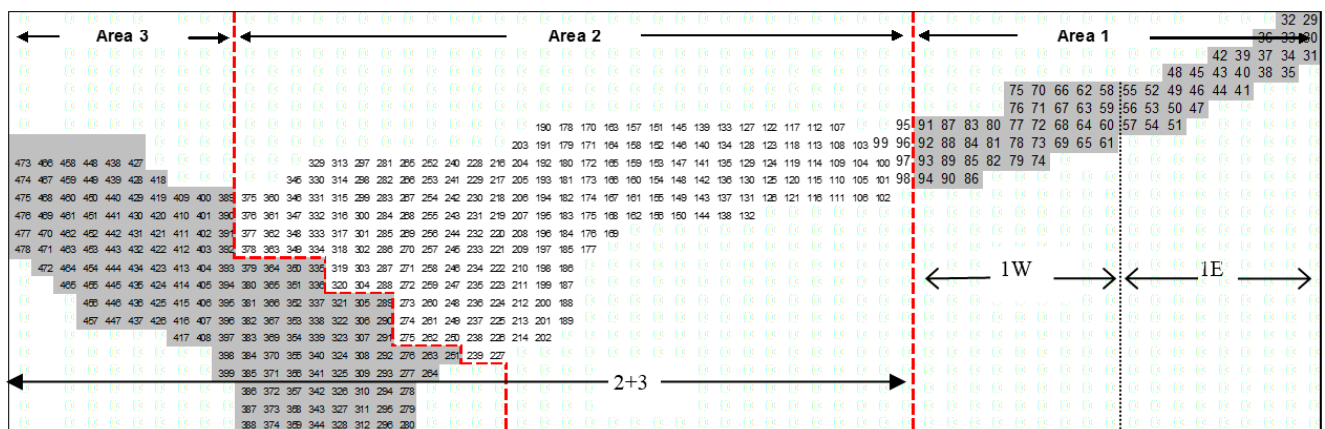


Figure 3. The fishing grounds showing the statistical areas that are used in the formulation of scientific advice for resource management for the South Coast rock lobster resource.

3 Squid jiggling industry and resource status

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 stock assessment 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, and the science underlying the management of the resource was reviewed again in November/December 2022 at an international workshop held at the University of Cape Town, with a further review planned at the end of 2023.

Some of the scenarios submitted to the 2012 meeting suggested that the scope for effort increases in the fishery was limited. The 2022 review dealt with recent acoustic abundance surveys for squid and also with improvements to the stock assessment models.

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.

It is the view of most 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.

A document submitted to an international workshop, see

https://webcms.uct.ac.za/sites/default/files/image_tool/images/302/workshop/IWS2022/MARAM_IWS_2022_SQUID_P1.pdf) notes the following:

“At the present time the fishery is managed under a fixed effort harvesting strategy, with the associated TAE (expressed as person-days and currently set at 295 000 person days) adjusted every few years in line with assessment updates. However, this effort is not directly allocated amongst right holders. Each commercial vessel has a crew complement, the total of which amounts to 2443 crew for the entire fleet. The reporting of detailed records of the effort expended is often delayed so that a coarse early warning system has been developed; this serves as a basis to curtail fishing as the end of the fishing season approaches it appears that the TAE is likely to be exceeded.”

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. Appeals were lodged in response to DFFE decisions regarding the apportionment. DFFE had earlier stated that phase three of the FRAP appeals process would deal with the Tuna Pole Line and Squid Sectors and that the proposed date for finalisation of these appeals would be 30 April 2023. The finalisation of the appeal decisions in respect of the squid sector were subsequently deferred to 12 May 2023, with the Minister stating that

“The deferral will not prejudice appellants and right holders in this sector, because the three months from April to June is a closed season in the squid sector”. This means that the successful right holders will only begin to harvest squid on 1 July 2023, by which, the Minister will have finalised and issued the appeal decisions.

In addition to the TAE management of the resource, MARAM/IWS/2022/SQUID/P1 notes that

“There are two closed seasons:

- A “permanent” closed season of five weeks centred on November, which corresponds to the peak spawning period, the objective of which is to limit the disturbance of fishing on spawning aggregations.*
- An “additional” closed season, typically of three months duration and usually over the April-June period. This became necessary because, given the number of rights allocated in the fishery, the TAE*

will be exceeded if all rights holders operate at approaching their full capabilities (some vessels operate for up to 220 days per annum). The start of this additional season may be advanced or delayed early in the calendar year if it appears that the TAE is likely to be reached before this date, or alternatively, may not be reached by then.

At the 2022 international review workshop a revision of the stock assessment model was considered. Such a review was deemed to be appropriate for three reasons:

- 1) Squid is now considered not to live beyond about one year, contrary to what is assumed in the prevailing stock assessment model.
- 2) The “annual” squid life cycle needs to be taken into account consistently in the definition of the overall season and the assessment of the resource.
- 3) The introduction of further rights holders could increase the risk of TAE overruns, requiring a review of the allocation and the management of the TAE, with implications for the stock assessment model.

The international review panel considered that the current stock assessment model could continue to be used to provide management advice while the new model was under development. This new model will be reviewed at a further international workshop scheduled for 27 November to 1 December of 2023.

The international review panel of 2022 considered the acoustic survey of squid in inshore spawning grounds between Storms River Mouth and Port Alfred. Their recommendations on this matter were that “even in the best case that the uncertainty regarding the species composition of the acoustic signal can be resolved, the estimates can be considered only as an estimate of biomass at a given point in time when the population is dominated by spawning (and dying) squid. Moreover, the uncertainty regarding the species composition of acoustic signals means that it will be difficult to use the results of the acoustic surveys as measures of absolute abundance. Hence, the Panel supports continued work to understand the species composition of signals better.

Lastly it is worth commenting that catches since the opening of the season in July of 2023 have been poor.

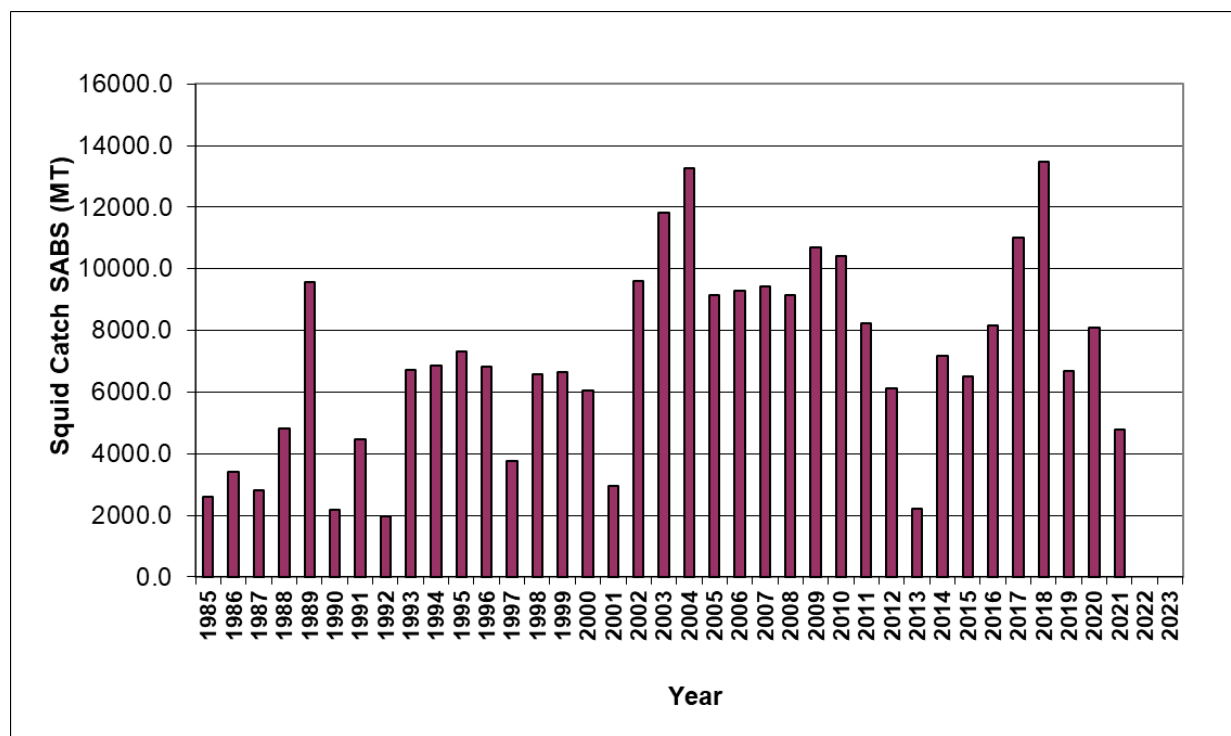


Figure 4. Catches in the squid jigging fishery 1985 to 2021.

