

2014 STATUS OF SOUTH AFRICAN LOBSTER AND SQUID FISHERY -

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West Coast rock lobster: Status, TAC, Prospects

The West Coast rock lobster resource is managed by means of an Operational Management Procedure (OMP) for the determination of a global TAC. Key inputs into the OMP each year are

- The commercial catch-per-unit-of-effort (CPUE) for both hoop net and trap fishing,
- The Fisheries Independent Monitoring Survey (FIMS) index, and
- The somatic growth rates.

The overall TAC is divided amongst different sectors of the fishery (nearshore, offshore, interim relief, recreational), each of which is further divided and allocated to the following super-areas (see Figure1):

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, east to Gansbaai).

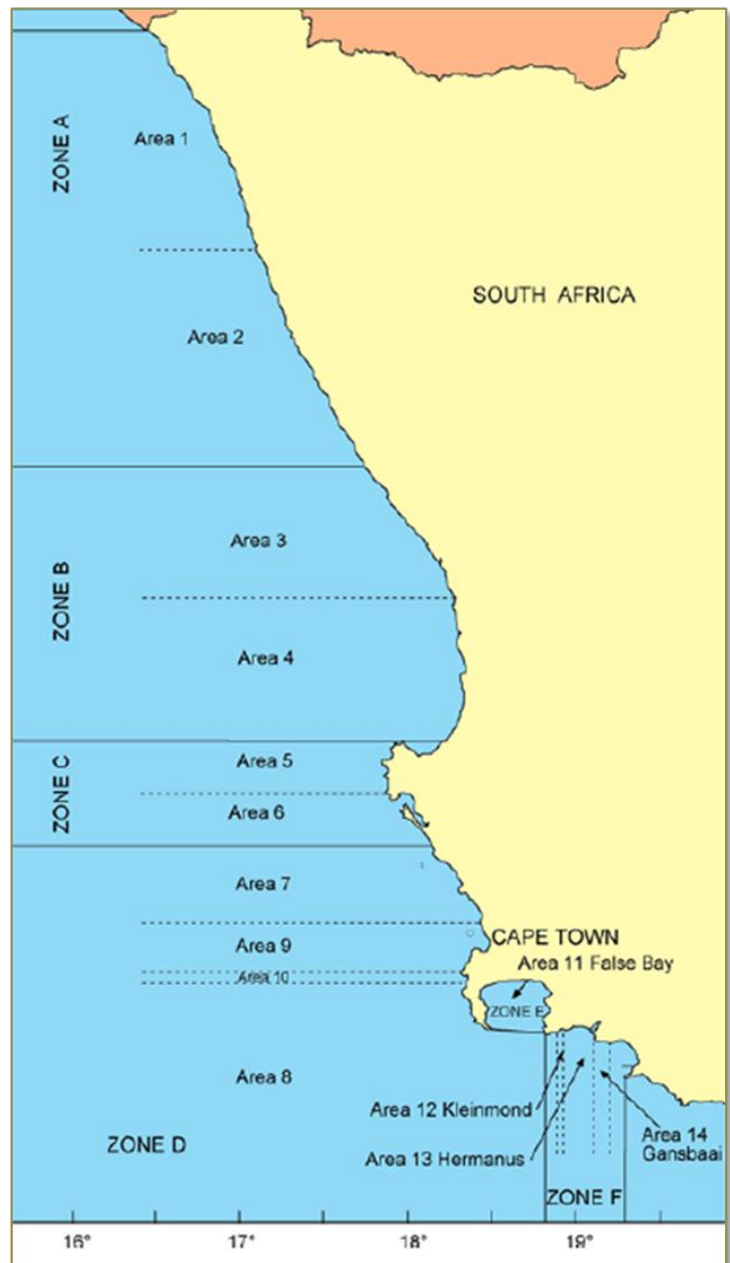


Figure1. West Coast rock lobster fishing zones and areas. The five super-areas are A1-2 corresponding to Zone A, A 3-4 to Zone B, A5-6 to Zone C, A7 being the northern-most Area within Zone D, and A8+ comprising Area 8 of Zone D in conjunction with Zone F. Source (DAFF).

OMPs are revised every four years. Work on the revision of the OMP was carried out in 2010 and 2011, applicable to the 2011/12, 2012/13, 2013/14 and 2014/15 TACs. A new OMP will be developed in 2014 and 2015 for the 2015/16, 2016/17, 2017/18 and 2018/19 TACs.

2011/2012 TAC

During 2011, prior to the start of the 2011/2012 fishing season, the scientific working group (SWG) reviewed a number of alternate OMPs. The OMP eventually submitted to management was designed to achieve a 35% biomass recovery by 2021. This is a higher level of recovery than was built into the previous OMP, a consequence of greater risk aversion towards the management of the resource, due partly to the fact that under previous OMPs the desired level of rebuilding was not achieved. There were also concerns about the high level of depletion the resource is estimated to have sustained over the course of the fishery. Management modified this OMP so that the long term recovery level of 35% was unaffected, but the 2011/2012 allocation to the offshore sector was set at the level associated with a 30% recovery target (1540.65 MT), a variant for which calculations had been carried out. There was also a request from the Interim Relief sector that the minimum legal carapace length for their sector be reduced from the current 80mm CL to 75mm CL as for the other commercial sectors, and this was granted. The final OMP, which commenced with the 2011/2012 fishing season, accommodates these changes. Following this, there was a further request, given good fishing performance in Area 5 and 6 and concerns about the biological status of Area 7, to transfer 40 MT from Area 7 to Area 5+6. This modification was also incorporated into the OMP.

The result for 2011/2012 was a global TAC of 2426 MT, a 6.1% increase from the 2010/2011 TAC of 2286 MT.

2012/2013TAC

For the 2012/2013 season, DAFF kept the TAC the same as the 2011/2012 TAC of 2426 MT. This was a cause for great concern given the advice of a 150 MT reduction by the scientific working group. The matter was well publicised and resulted in at least one case being heard by the law courts. The short term benefit of an unchanged TAC for 2012/2013 is, however, not without medium to long term costs. The new OMP contained the following two protective provisions:

- 1) **TAC reduction constraint rule:** The previous OMP limited TAC reductions to 10%. The new OMP made provision for as much as a 30% reduction under certain circumstances.
- 2) **The low abundance rule:** There was an 'Exceptional Circumstances rule' that provides for the closure of all fishing in a super-area should that super-area underperform to a sufficient degree. Following this, the SWG would have to convene and reconsider the OMP with a view to the possible transfer of TAC to other super-areas.

2013/2014 TAC

During late 2012 and early 2013 catch rates at Dassen Island were poor. It became clear that the Area 7 abundance index would fall below the exceptional circumstances low abundance threshold. Stock assessment results were presented during 2013 that suggested that virtually the entire biomass of lobsters above 75 mm CL had been removed from Area 7. As a result it was agreed that for the 2013/2014 fishing season, fishing at Dassen Island would proceed on an experimental basis at a 80 MT allocation, split 20 MT per month for each of the months of December 2013, January 2014, February 2014 and March 2014.

However, given that OMP management of the fishery was suspended, it was agreed that management of the resource would proceed on a different basis. The intention was to try to stick to the OMP framework in the remaining super areas insofar possible, including adherence to the 35% recovery

target. Part of this involved a substantial increase in the trap fishing tonnage allocated for Areas 5+6, and a very substantial reduction in the effort allocated for recreational fishing. However, given that a number of issues were now up for debate, the scale of poaching in the fishery was also reconsidered, and a substantial 25% increase in poaching relative to previous assumptions was built into the mathematical model. The final outcome from this process was a global TAC allocation of roughly 2160 MT for 2013/2014.

2014/2015 TAC

During 2014, scientific deliberations on the 2014/2015 TAC resulted in a negative reassessment of the medium term productivity of the WCRL resource in some of its super areas. The situation in Area 8+ was/is a particular cause for concern, as are widespread reports of increasing levels of poaching, coupled with the use of increasingly brazen methods of illegal fishing. Revised stock assessment results estimate that the resource in Area 8+ has been underperforming relative to the assessment results that were used to develop the OMP in 2010 and 2011. Forward projections indicate that a deterioration in the situation at Area 8+ would occur under status quo TAC conditions. Given that the annual tonnage allocated to Area 8+ comprises the bulk of the global TAC, it seems likely that the global TAC will decline further for the 2014/2015 fishing season. It is also likely that fishing at Dassen Island will continue on an experimental basis, most likely at the 2013/2014 level of 80 MT. The global TAC awaits a decision by the minister, DAFF. Sectoral splits (offshore, nearshore, small scale and recreational) will become available when that decision is announced in October or November 2014.

The development of a new OMP for the West Coast Rock Lobster fishery will take place during 2014 and 2015, and will form the basis for the scientific recommendation for the 2015/2016 TAC.

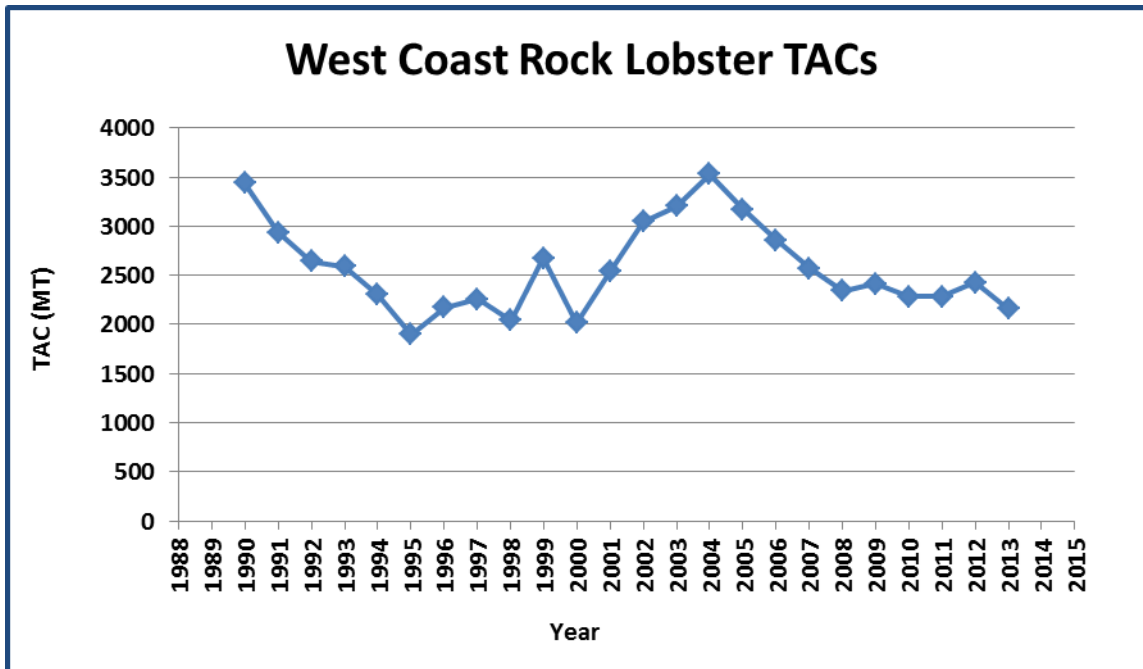


Figure 2. TACs for the West Coast rock lobster resource since 1990.

South Coast rock lobster: Status, TAC, Prospects

The South Coast rock lobster (SCRL) fishery is managed by a combination of output controls and input controls. The output control is a Total Allowable Catch (TAC) and IQs (Individual Quotas) and the input control is a Total Allowable Effort (TAE) which is a limitation on the number of fishing days per season. The TAC is the primary control measure. The TAE, based on a fishing day allocation, is a secondary measure. The TAE has been designed to become active roughly once in 20 years.

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

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

An Operational Management Procedure (OMP) is in effect for the determination of the TAC. This OMP is based on an interpretation and calculation of trends in CPUE in recent years, separately for each of three areas, Area 1E, Area 1W and Area 2+3. The location of these areas is shown in the map in Figure 3.

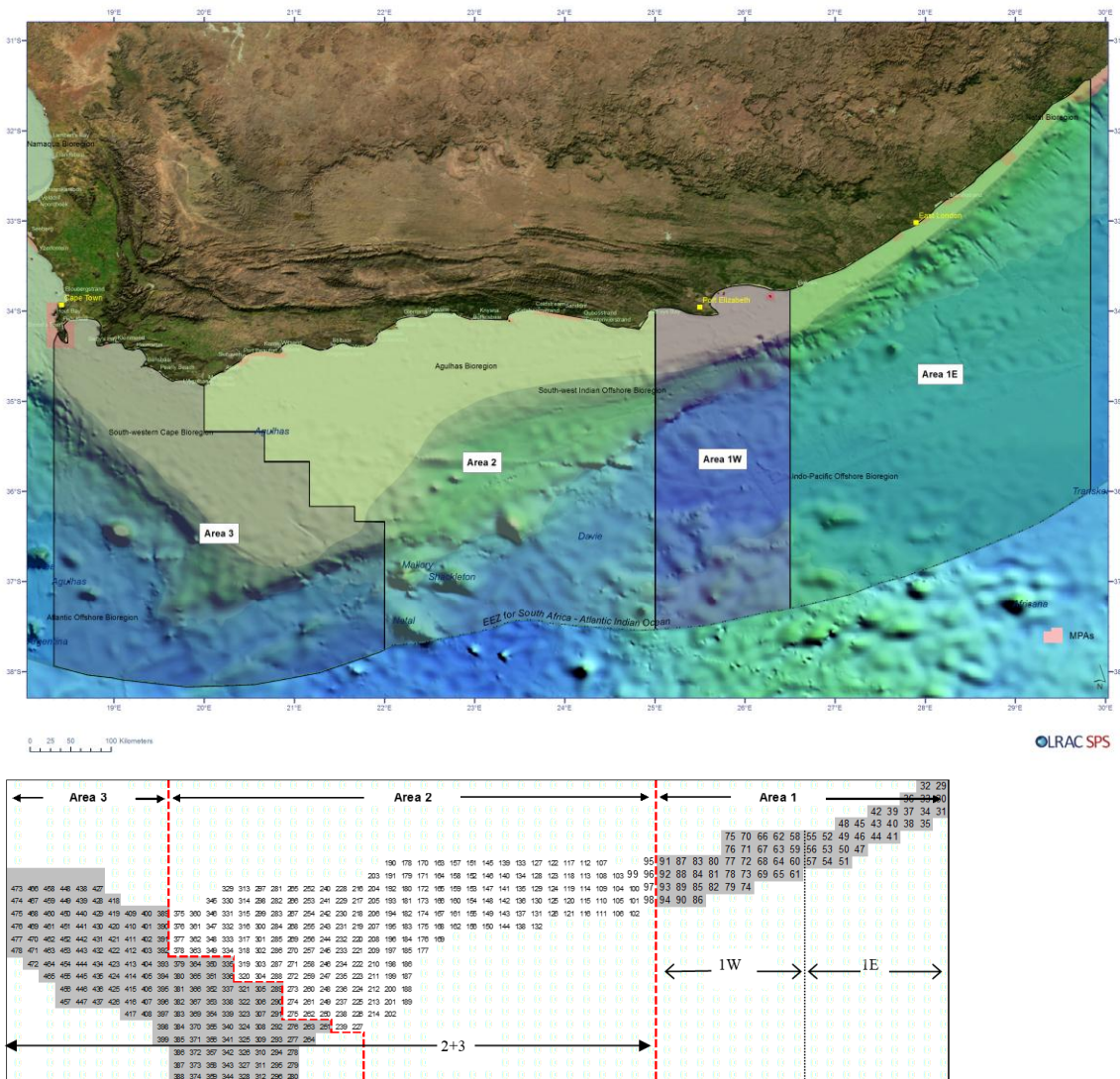


Figure 3: The fishing grounds showing the statistical areas that are used in the formulation of scientific advice for resource management, South Coast Rock Lobster resource.

The OMP has however been under almost constant revision over the last four fishing season. The OMP formula was revised and retuned in 2010, whereupon the SWG agreed to apply it for a further two fishing seasons, for the 2010/2011 and 2011/2012 fishing seasons. In 2012 the OMP was further revised and a TAC of 326 MT was adopted for the 2012/2013 fishing season. Further revisions to the OMP were effected during 2013 and this led to a 5% increase in the TAC to 342 MT for 2013/2014. Until that time the fishery was being managed under a 20% rebuilding strategy which aimed to rebuild the spawning biomass by 20% between 2006 and 2015.

During 2014 the OMP for resource was reinvestigated and re-revised. Stock assessment results tabled at that time indicated that the resource was in a healthy state with an overall spawning biomass of in excess of 35% of pristine. There were some concerns expressed about the performance of the resource in the east however, which weighed on the deliberations somewhat. During this phase of deliberations DAFF requested that the 20% rebuilding target be reconsidered. As a result a rebuilding target of 30% from 2006 to 2025 was agreed to, on the understanding that this would be opened up for re- discussion in four years time. It was also agreed that catches in Area 1E would be closely monitored. The sequence of TACs that have followed all these deliberations are as follows, for the last four fishing seasons:

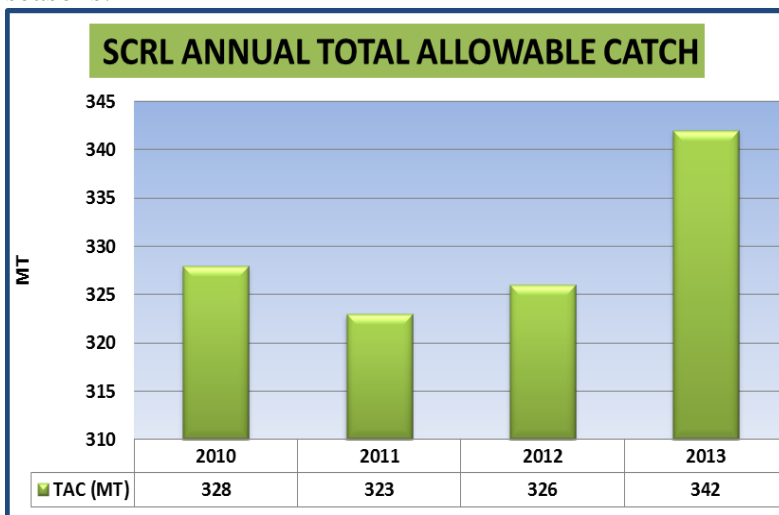


Figure 4: South Coast Rock Lobster TAC per annum

Figure 5 shows the TACs since the 1989. The medium term forecasts of resource performance considered during 2014 suggest that there is a good chance that the TAC will not fall below 342 MT for the next three to four years, and that some increase in TAC can be permitted without compromising the 30% rebuilding target.

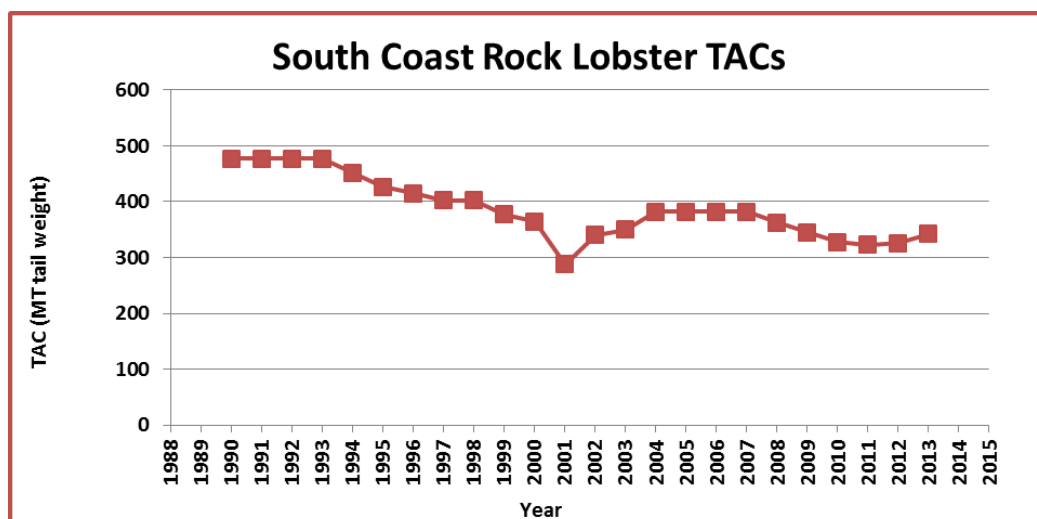


Figure 5. TACs in the South Coast rock lobster fishery 1989/90 – 2013/14.

Squid jigging industry

There is a continuation of the extensive revision of the data underlying the management of the resource. As mentioned in 2012, numerous inconsistencies were noted between company catch records submitted for the long-term rights allocation process and the records produced by MCM for scientific calculations. In addition, the two sets of records showed very substantial differences in the number of fishing days per vessel. This was despite significant efforts to improve the data recording process via the replacement of the ‘blue books’ with the new ‘yellow books’. The number of fishing days per vessel was a critical input into discussions of closed seasons, which was based on a desire to curtail latent effort in the fishery.

An important development that occurred in 2010 was the revision of the Bayesian assessment model for the squid jigging fishery. This revision was carried out using a new agreed dataset. The results of this revision suggest a more optimistic appraisal of the resource and, in particular, a position in which effort levels is presently sub-optimal. This removes much of the risk inherent in the possible expression of all the latent effort in the fishery. As a result, the additional closed seasons have been removed and continued during the 2011 and 2012 seasons. This position is, however, contingent on the revised Bayesian assessment model and there is a possibility that future revisions of the model, coupled with data updates as they accrue, will overturn this position.

Year	Effort Controls	Closed Season
2005	2423 unrestricted crew, 22 restricted crew	5 weeks Oct / Nov
2006	2423 crew or 138 vessels	5 weeks Oct / Nov
2007	2422 crew or 138 vessels	5 weeks Oct / Nov
2008	2422 crew or 136 vessels	5 weeks Oct / Nov + 6 weeks
2009	2422 crew or 136 vessels	5 weeks Oct / Nov + 6 weeks
2010	2422 crew or 136 vessels	5 weeks Oct / Nov + 6 weeks
2011	2422 crew or 136 vessels	5 weeks Oct / Nov
2012	2422 crew or 136 vessels	5 weeks Oct / Nov
2013	2422 crew or 136 vessels	5 weeks Oct / Nov
2014	2422 crew or 136 vessels	April, May, June + 5 weeks Oct / Nov

Tables of effort controls and closed seasons for the squid jigging fishery

Anecdotal low catch rates reported from industry in the most recent season does however place some question on the current management framework and the role of environmental conditions on recruitment success. No clear intervention has been taken regarding this low catches, and data is yet to be collated to establish the extent of this problem. No further information on the squid industry is available.

Furthermore, the squid industry also appears to be at some risk of the proposed off-shore phosphate mining off Mossel Bay.

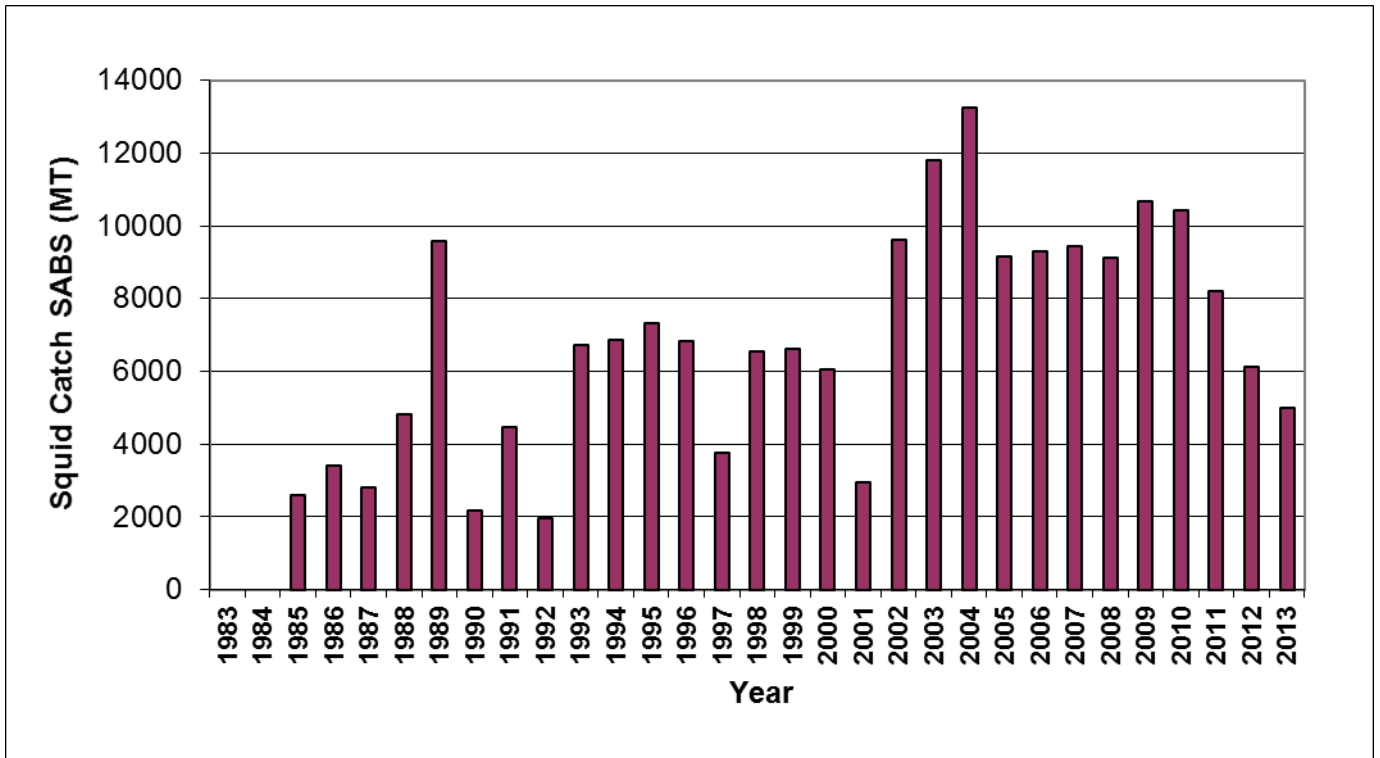


Figure 6: Squid catches

September 2014