

# A review of the South African hake for the year 2016

Melanie Smith and Kevern Cochrane (CapMarine)

This year we report on current hake catches, the importance of research surveys for fisheries management and the recently implemented industry-funded projects.

## Hake catches and Total Allowable Catch (TAC)

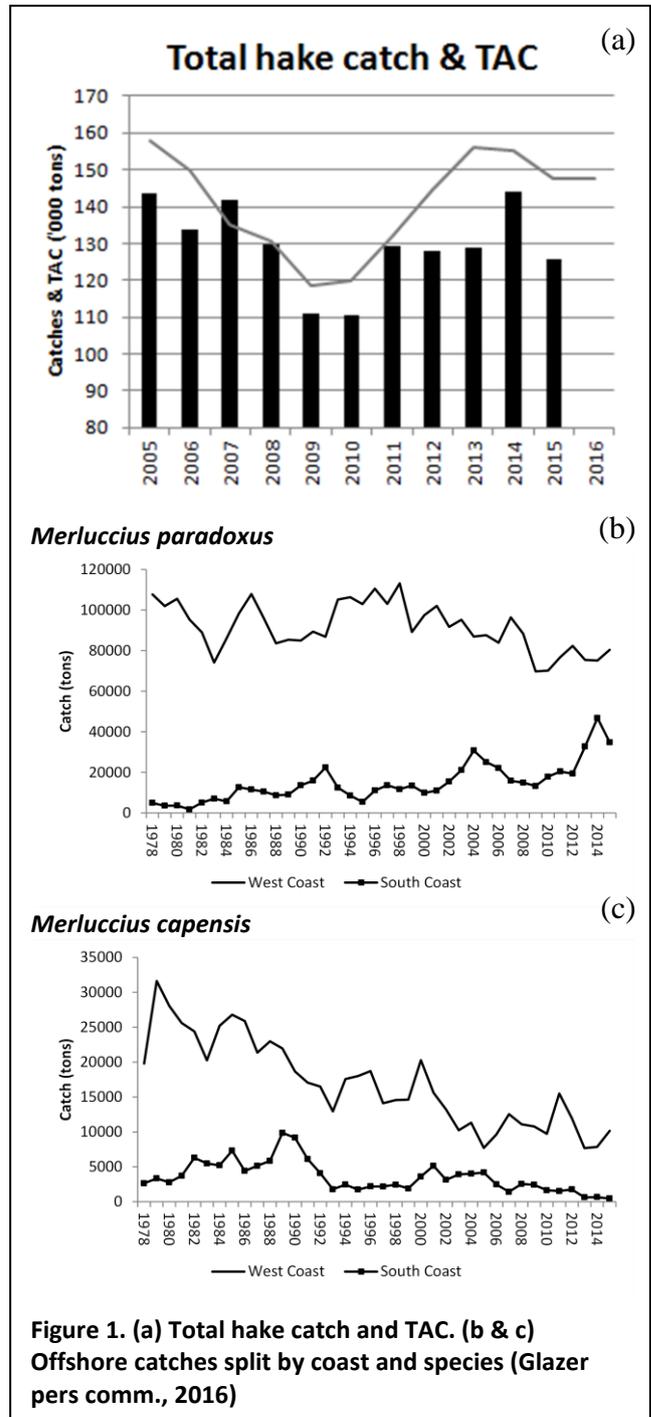
Commercial catches of hake (*Merluccius capensis* and *M. paradoxus*) are shown in Figure 1a. The hake fishery remains dominated by catches of deep-water hake with catches of shallow-water hake on the South Coast at a low level but somewhat higher on the West Coast (Figure 1 b and c). Hake catches on the West Coast were slightly higher in 2015 than they had been the previous year but were lower on the South Coast, although not as low as they had been in the past. Catches in 2015 were again less than the TAC for that year, as they have been for most years since 2009 (Figure 1a).

The status of demersal resources on the Agulhas Bank (South Coast) is a concern. In addition to the declining catches of *M. capensis*, several other species on the South Coast such as monk, kingklip, horse mackerel, squid and East Coast sole have shown a similar trend but the reason for these declining catches has not yet been fully explained. Nevertheless, it is considered that the declining catches of these species on the South Coast reflect a decline in availability (due to anomalous environmental conditions) rather than changes in stock structure and abundance.

The hake TAC for 2016 is 147 500 t, the same as in 2015 (Figure 1a). A proportion of the hake TAC was allocated to bycatch of hake in the horse mackerel fishery, with the balance apportioned to directed catches in the handline fishery (1.8%), longline fishery (6.6%), inshore trawl fishery (6.2%) and the offshore trawl fishery (83.9%). A further 1.5% was allocated to subsistence fishers.

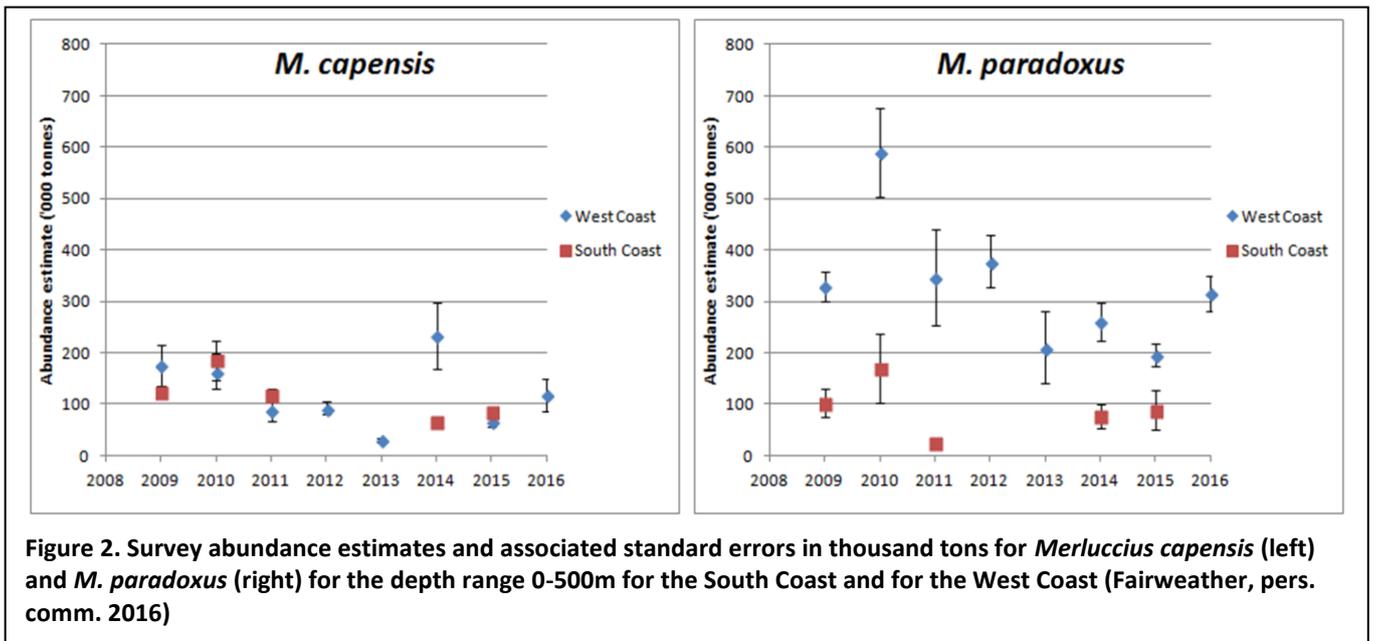
## The importance of research surveys for fisheries management

Since 1986, the Fisheries Branch of the Department of Agriculture, Forestry and Fisheries (DAFF) has conducted surveys of the demersal resources on the West and South Coasts, the results of which provide not only essential

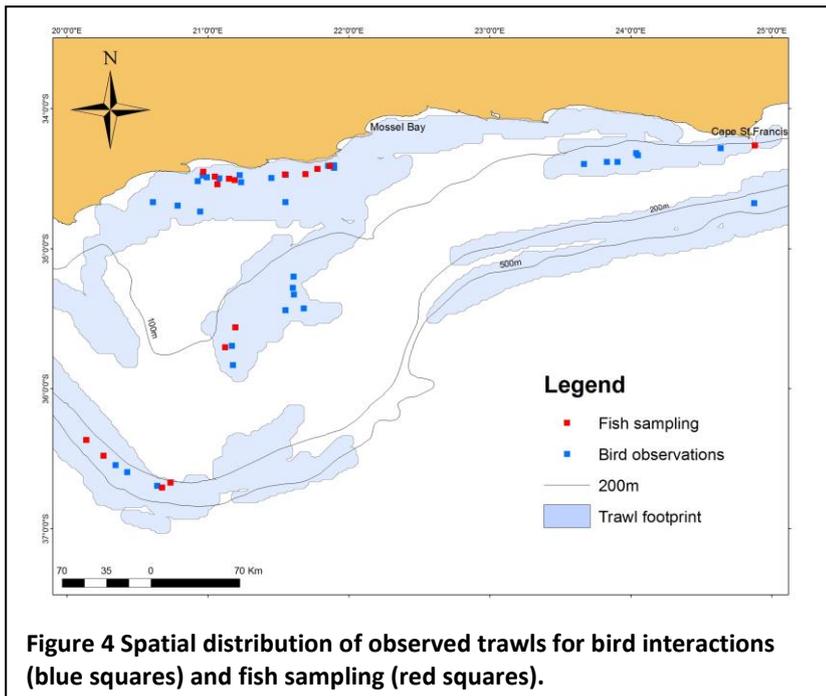


inputs into the annual hake stock assessment but are also used to calculate abundance trends for other species. The results from these surveys show that the relative abundance of *M. paradoxus* is much higher than that of *M. capensis* on the West Coast but that the difference in relative proportions of the two species on the South Coast is less marked (Figure 2). The abundance of both species of hake is much higher on the West than on the South Coast: typically the biomass on the West Coast is about twice that of the biomass on the South Coast.

These surveys are carried out twice a year, in summer (on the West Coast) and autumn (on the South Coast). They are independent of the commercial fishery and designed to be comparable from year to year. Biomass of the two hake species as well as the many other demersal species can vary quite considerably from year to year. The survey estimates of biomass provide a critical index of stock status that is independent of the commercial fishery. This index, along with numerous other indicators based on the commercial trawl and longline fishery, are key inputs into the hake Operational Management Procedure (OMP) that is used to generate annual TAC recommendations (the OMP is based on an agreed stock assessment model and reference set of information that is reviewed every four years or more frequently if needed). It is therefore essential to maintain a continuous time-series of data from the surveys in order to keep a consistent and objective record of relative abundance of the species caught. It was for this reason that the fishing industry expressed concerns when, in 2012, the research vessel *RV Africana*, which had been used regularly to conduct surveys up until then, suffered technical problems and was unable to continue the surveys. To overcome this problem, the industry made one of their commercial trawlers, the *FV Andromeda*, available for surveys (the Oceana vessel *FV Compass Challenger* was used for the summer survey on the West Coast). Although the gear on the *FV Andromeda* is the same as that used by the *RV Africana* there are still likely to be differences in relative fishing efficiency between the two vessels. There is therefore a need for further gear calibration to standardise the survey results obtained using commercial vessels such as the *FV Andromeda* and *FV Compass Challenger* so that they are comparable with the historical *RV Africana* dataset before the results can reliably be used in the hake stock assessments.



## Recently implemented industry funded projects



When the South African hake trawl fishery was re-certified by the Marine Stewardship Council (MSC) in April 2015, several conditions were raised. The MSC process requires that the client (SADSTIA) develops an “action plan” to address each condition. One of the MSC conditions relates to Endangered, Threatened and Protected (ETP) species, more specifically requiring the quantification of the fishery-related (trawl) mortality of seabirds. Although this condition had been satisfactorily addressed in the previous certificate for the offshore sector, focus is now on the much smaller inshore fishery operating mostly from Mossel Bay. To tackle this, SADSTIA, working with their sister

organisation for the inshore fishery, the South East Coast Inshore Fishery Association (SECIFA), have developed a specific three-year programme to collect data on the nature and frequency of seabird warp strikes associated with inshore trawlers. As SADSTIA already have an established industry-funded observer programme, SECIFA are funding an enhanced observer data collection programme, which commenced in April 2016. The programme is also monitored by *Birdlife South Africa*, which provides oversight on the sampling methods used to ensure consistency with international bird-sampling standards. To date, observers have been deployed on three inshore vessels and have sampled a total of 69 inshore trawls. The spatial distribution of bird observations and fish samples is presented in Figure 3. Most of the trawls were located in water shallower than 110 m but a few trawls took place in water deeper than 200 m, demonstrating that inshore vessels sometimes operate in offshore areas. It should be highlighted that this programme is currently the only source for scientific information directly from the inshore vessels. Therefore, future plans to increase the observer coverage and types of scientific data collected e.g. bycatch, are being considered.

Another industry-funded programme that started this year is the Fisheries Conservation Projects (FCP). These are collaborative projects between WWF South Africa and the Deep-Sea Trawling Industry Association (SADSTIA). The programme is focused on non-target fish species and aimed at, amongst other things, determination of the nature and degree of discarding practiced by the trawl fishery; encouraging the assessment of the status of non-target species retained by the fishery; and the development of initiatives for ongoing monitoring and, where appropriate, management of non-target species. It



**Figure 3. Image of a black browed albatross taken by an observer on one of the South African hake trawlers.**

is hoped that the results of the FCP will inform the assessment or reassessment of the main non-target species in the hake trawl fishery against the WWF Southern African Sustainable Seafood Initiative (SASSI). SASSI is a programme that has been developed by WWF SA that, through a traffic light system that informs retailers and consumers of the status of fish stocks, endeavours to reduce pressure on species that are listed as red (serious conservation concerns) or orange (reasons for concern). We should be able to report further on progress of the FCP projects in next year's annual report.

Overall, the hake trawl fishing industry continues to promote and support a high level of scientific research. They continue to work closely with several institutes (in addition to the above mentioned) including University of Cape Town (UCT), South African Biodiversity Institute (SANBI) and the South African Environmental Observation Network (SAEON) to deliver and advance marine-based research.