



# Exploring the deep

## Sophisticated modeling and ground-breaking research win MSC stamp of approval

fishery in Africa to have achieved MSC certification.

Since 2004, MSC certification has certainly proved its worth. Not only has it allowed the deep-sea trawling industry to diversify into markets in northern Europe where there is a high degree of consumer awareness of sustainability issues, it has also enabled us to substantially improve the management of the fishery. For example, in 2015, at the time that the trawl fishery for Hake was certified by the MSC for a third time, the paradoxus stock was thought to be below the target reference point of maximum sustainable yield (MSY) – in other words, the stock wasn't quite as healthy as we wanted it to be. As a result, SADSTIA included a stock rebuilding strategy in its MSC Action Plan. But recently, two long-term studies that considered the question of Hake cannibalism, have shed new light on the status of the paradoxus stock. Through biological research we know that adult shallow-water Hake (*Merluccius capensis*) routinely feed on juvenile paradoxus; now that this biological reality has been accounted for in the stock assessment model (and small adjustments have been made to the procedure used to manage the fishery's two-species dynamic), the stock is believed to be at a higher level – fluctuating above MSY, where we want it to be.

To the casual observer, this result might seem like the waving of a proverbial stock assessment wand, but the Hake cannibalism question has been thoroughly tested by the best stock assessment minds in the world. Two separate studies were conducted by Mike Bergh of OLSPS Marine (which provides stock assessment expertise to fisheries managers around the world) and Doug Butterworth and his team from the University of Cape Town's Marine Resource Assessment and Management (MARAM) group. The results of both studies were reviewed by the International Fisheries Stock Assessment Review Workshop that takes place at UCT each year. The Workshop scrutinised and approved the techniques employed by the OLSPS and MARAM studies, and verified their findings.

The point I want to make is that, partly as a result of MSC certification, the management of the trawl fishery for Hake is sophisticated and finely tuned. Modeling is rigorous and peer-reviewed and the status of the stocks is closely monitored.

Another aspect of the MSC certification that is often overlooked is how successful it has been at encouraging environmental awareness in the fishery. For example, the number of seabirds killed by trawl warps on offshore trawl grounds has dropped by between 95% and 98% as a result of deep-sea trawlers routinely deploying bird scaring lines (tori lines). Our next challenge is to determine whether trawling on the inshore grounds (waters shallower than 100m) is having an impact on seabirds, particularly Cape gannets.

Although seabird densities are not as high on inshore grounds, there are concerns that some seabirds may be killed during trawling operations on the south coast. The closure of the inshore trawl fishery last year, as a result of the contested 2016 rights alloca-

tion process, stalled SADSTIA's efforts to determine whether there are negative impacts or not, but the recent MSC audit has ramped up our efforts. We are in the process of determining the level of observer coverage needed to comprehensively consider whether seabird interactions are a problem, and we expect that by the end of this year we will have sufficient data to properly consider this question.

The MSC auditors were particularly pleased with the good progress that SADSTIA has made with respect to determining the impact that trawling has on the seabed. The seabed experiment that was conducted from the research vessel *Ellen Khuzwayo* over the past five years has been completed and the results are being analysed. We expect that by the end of the year we will have some definitive results. Our plan is to continue the experiment on a long-term basis and we are looking at the feasibility of conducting another survey after five or even 10 years to see whether, and how rapidly, organisms on the seabed recover when an area is closed to trawling. Over the past five years our members have respected the no-trawl areas on the Karbonkel fishing grounds and they have also trawled in the open areas. That is good because it will allow the scientists working on this project to compare trawled with untrawled areas. (For more on the seabed experiment, please see <http://www.sadstia.co.za/news/ellen-khuzwayo-survey-quantify-impacts-trawling/>).

SADSTIA is also working with the Department of Environmental Affairs (DEA) to facilitate the establishment of a network of 21 marine protected areas (MPAs) that were initially announced by DEA early in 2016. SADSTIA participated fully in the consultation process that followed the publishing of the Government Gazette notice in 2016. We asked that the boundaries of two MPAs be slightly shifted, but otherwise our members are in favour of the MPA network because it will help us to meet our commitment to the MSC to help protect seabed biodiversity in unique habitats. Consequently, we have written to DEA to say that SADSTIA will respect the boundaries of the MPAs (with two slight amendments) and that we will request the Department of Agriculture, Forestry and Fisheries (DAFF) to include the boundaries of these MPAs in our permit conditions.

With so much of our industry's success riding on the MSC certification, it was reassuring to see the level of support for the annual surveillance audit provided by DAFF. We have established a MSC Hake liaison committee which meets before the auditors' visit to South Africa to ensure that all stakeholders are aware of the documents that need to be compiled and provided to the auditors. This year the system worked like a well-oiled machine and we had the best cooperation we have ever had from DAFF. The auditors were extremely happy with the information provided by DAFF, including the numbers of at-sea inspections and routine discharge and factory inspections that are conducted by DAFF. This work takes place in the background, but it is vitally important to the continued certification of our fishery.

**E**arly in May, the independent auditors responsible for conducting the annual surveillance audit of the Hake trawl fishery on behalf of the Marine Stewardship Council (MSC) gave our fishery an emphatic thumbs up. Not only did the auditors agree that stocks of deep-water Hake (*Merluccius paradoxus*) are healthier than previously thought, they also acknowledged the work that the SA Deep-Sea Trawling Industry Association (SADSTIA) is doing in an effort to better understand and ultimately address the impacts that trawling has on our fishing grounds – both above and below the sea surface.

As many in the fishing industry will be aware, SADSTIA puts a lot of effort into maintaining the certification of the MSC which our fishery first secured in 2004. Ours was the first Hake fishery in the world to be certified as "sustainable and well-managed" by the MSC and we are proud of the fact that we remain the only