



Oceana Sustainability Report 2020

Status and Management of South African hake



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Performance of the hake fishery in 2019/20

The Total Allowable Catch (TAC) in the South African hake fishery is split between four fishing sectors, with deep-sea and inshore trawl sectors receiving 84% and 6.2% respectively and the longline sector and handline sector receiving 6.5% and 3.3% respectively (see Figure 1b). A small allowance of the hake TAC is also made for the hake bycatch in the mid-water trawl fishery for horse mackerel (2% of the horse mackerel catch or about 400 t). The hake Total Allowable Catch (TAC) was fixed at 146 400t for 2019 and 2020. Currently the hake allocated to the handline fishery is not utilised.

The trend in the TAC since 2014 has been gradually downwards (Figure 1a) as the Operational Management Plan (OMP) responded to the indices used to determine the state of the hake stocks. Note that the splitting of the hake fishery into two species has only recently (last decade) been done. This splitting was prompted by the 1st Marine Stewardship Council certification in the mid 2000's giving a more rigorous assessment of the species individually. This process required a creative retrospective analysis of past catches based on the known depth distributions of the two species (deep and shallow-water hake). Catches of hake over recent decades have typically fluctuated about 150 000 t per annum (Figure 1b), with most of the catch being landed by the deep-sea trawl sector, and comprising mainly of deep-water hake (*M. paradoxus*). The OMP was revised after a 4-year period during 2018 (OMP-2018) and due to the positive outlook of the stock it has resulted in a more "aggressive" approach than OMP-14 higher TACs for the same stock abundance levels. The TAC for 2018 and 2019 was subsequently set at 146,431 tons and in 2018 green weight catch by the trawl fleet alone amounted to 123 004t (the balance being caught by the other hake fisheries). The OMP-derived TAC was set for 2020 at 146 400t. The disruption of fishing in 2020 due to COVID has affected fishing operations and in all likelihood a portion of the 2020 TAC will not be caught and a rollover into next season is anticipated.

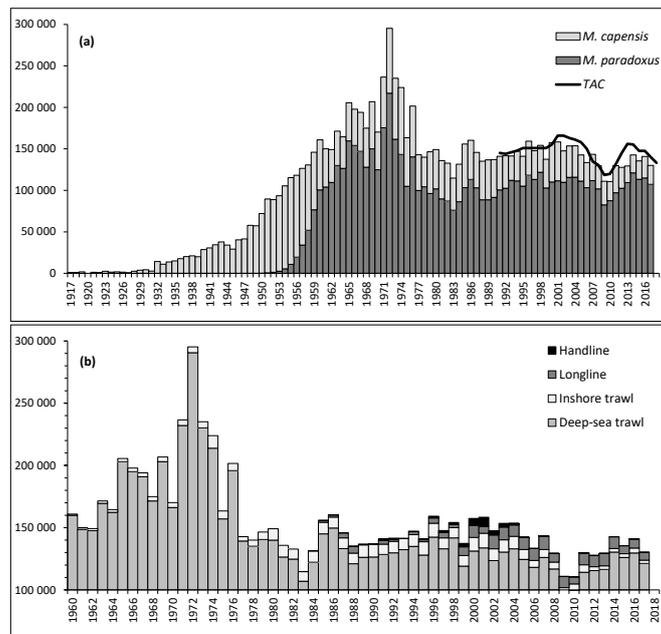


Figure 1: (a) Total catches (tons) of Cape hakes split by species over the period 1917 – 2017 and the TAC set each year since the implementation of the OMP approach in 1991. (b) Catches of Cape hakes per fishing sector for the period 1960 – 2016. Prior to 1960, all catches are attributed to the deep-sea trawl sector. Figure and caption adapted from Durholtz 2018¹.

Computations of the likely range of hake TAC outputs from the OMP for the 2021 season suggest that the TAC for 2021 may be marginally reduced. The main reason is that there is a conflict between the trends in the two hake species. The overall smoothed abundance index for *M. capensis* is trending upwards, while that for *M. paradoxus* is trending downwards (Figure 2). Because *M. paradoxus* contributes about 2.5 times as much as *M. capensis* to the final TAC² it has a greater influence on the TAC allocation. The calculations are informed in part by the West and South coast biomass estimates of the independent research surveys conducted by DFFE (mostly on the *RV Africana*) and in part by the commercial catch rate (CPUE) index derived from the commercial trawl sector (other indices contribute to the model but these are the two primary indices).

Independent indices of biomass, such as those acquired by research vessels provide a critical annual index of abundance, but can also have high variability from year to year as it is only a “snapshot” of the resource at any point in time. It is for this reason that tracking the biomass independently is important to be maintained consistently over time, and missing surveys due to vessel failure (for example) can affect how we estimate the health of the hake stocks.

¹ Durholtz, M.D. 2018. An overview of the SA hake fishery. MARAM/IWS/2018/HAKE/BG3.

² A. Ross-Gillespie and D.S. Butterworth. Likely 2021 hake TAC recommendation, based on information currently available. Marine Resource Assessment and Management Group, Department of Mathematics and Applied Mathematics, University of Cape Town, Rondebosch, 7701. FISHERIES_2020_AUG_SWG-DEM_09.

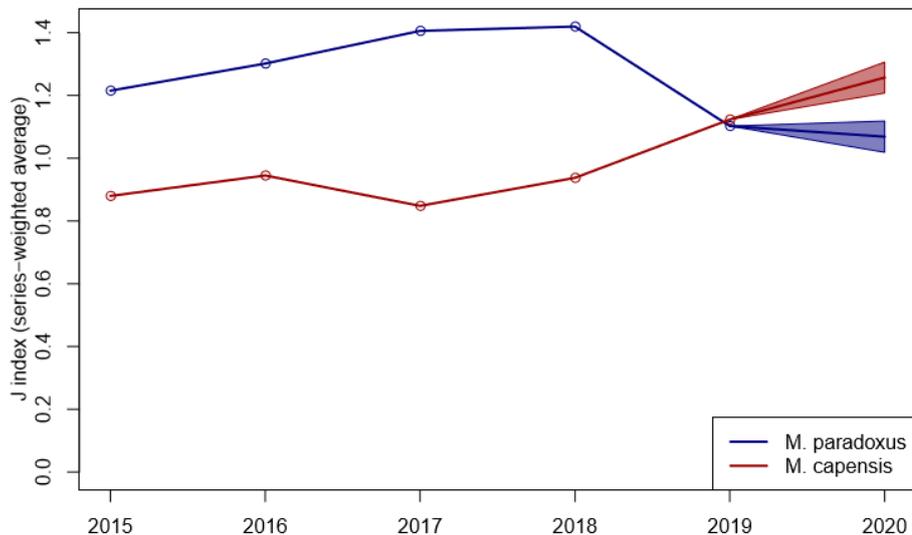


Figure 2: The series-combined J indices are shown for each species, calculated according to Equation (3) for *M. paradoxus* and Equation (4) for *M. capensis*.^{Error! Bookmark not defined.}

Fishery Resource Allocation Process 2021

The main commercial fisheries in South Africa are entering a critical period. For hake, the fishing rights have effectively come to an end and a new process of reapplying for these rights has been started. The inshore trawl fishery for hake and sole, the rights for which were reallocated in 2018, were significantly disrupted due to a similar process, mainly due to objections and litigation. The prospects for the deep-water trawl sector are equally uncertain and the industries affected are bracing themselves for a turbulent period. The deep-sea hake sector, through the mother body (SADSTIA), has commissioned an economics report, commonly referred to as the *Genesis Report*³. Regardless of the complexity inherent in management of the fishery the reality is simply this - substantial value in the industry is dependent on not only a stable TAC but also allocations that can sustain the current employment levels, markets and investments in vessels and other infrastructure. For example, there is a clear distinction in the operating models of freezer trawlers and on-shore process operations but regardless, harvesting the resource is highly capital intensive and requires high-asset utilization even before the catch profile is factored into revenue³. In addition, both costs and revenue are subject to notable external risk factors such as exchange rates and oil prices that have variably plummeted and skyrocketed in 2020. The Genesis report was prepared through private initiative in anticipation of government-driven socio-economic impact assessments of all fishery sectors undergoing the long-term rights allocation process.

In addition an analysis of the economic benefits of Marine Stewardship Council certification for the South African hake trawl fishery showed that retaining MSC-certification is critical in order to maintain high levels of employment and current market position⁴. Whereas (from a DFFE perspective) biological

³ https://www.sadstia.co.za/assets/uploads/GenesisHDSTReport_FINAL.pdf

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https://www.researchgate.net/publication/296682939_Estimating_the_economic_benefits_of_MSC_certification_for_the_South_African_hake_trawl_fishery

considerations are primarily seen as being managed through the TAC and in part through limiting cluster fishing effort (input or TAE control), the MSC provides significantly more incentive for the fishery to maintain its global best-practice certification and perception of a sustainable well-managed fishery.

Management of the fishery (OMP application)

The fishery was first certified against the MSC Standard 2004, making it the first hake fishery to be certified globally, and re-certified on two occasions (2010 and 2015). The third re-assessment against the new MSC Standard Version 2.1 began in October 2019, and the fishery has once again had its efforts recognized as meeting the gold standard for sustainability and numerous factories maintain their chain of custody certification⁵, though the Public consultation and objections procedure must still be finalised. Whereas the South African fishery is well versed in the rigours of maintaining such a high level accolade, for the first time, in 2019/20, the Namibian hake trawl and hake longline fishery has also gone the distance in its pursuit of certification against the MSC Standard⁶. Since the deep-water hake stock has been deemed to be shared between the two countries (moderate connectivity), the MSC requires a degree of management control and cooperative governance never before considered necessary. This led to a plethora of OMP robustness tests, and variations and re-runs of the hake assessment model⁷; which ultimately led to the conclusion that the SA hake management procedure is sufficiently robust effectively mitigating any adverse consequences (in resource conservation terms) of any variations (particularly increases) in the Namibian catch of *M. paradoxus*.

The stock status the South African *M. paradoxus* stock is considered to be fluctuating around the Maximum Sustainable Yield (MSY) target whilst the *M. capensis* stock is better off and determined with a high degree of certainty to have been above the MSY level for a number of years⁵. With the Namibian fishery landing a similar amount of hake to South Africa (around 150 000t) a year and the stock there also considered healthy and fluctuating around MSY⁶ the amount of MSC certified hake in between the two countries will approximate 300 000t. This is seen as a positive development for our regional hake fishery, strengthening the value of hake for both countries and increasing the volume of prime quality hake on the international “whitefish” markets.

In terms of governance the MSC requires further development of the existing framework for cooperation between the two countries specifically with respect to; collecting and sharing data; creating appropriate arrangements for the management of shared living marine resources; the scientific assessment of stock status; and the development of scientific advice; with the ultimate goal that “*a system for organised and effective cooperation shall be established between the respective clients which delivers management outcomes consistent with MSC Principles 1 and 2.*”

Ecosystem impacts and associated research

⁵ <https://fisheries.msc.org/en/fisheries/south-africa-hake-trawl/@assessments>

⁶ <https://fisheries.msc.org/en/fisheries/namibia-hake-trawl-and-longline-fishery/@assessments>

⁷ FISHERIES/2020/MAR/SWG-DEM/02; FISHERIES/2020/MAR/SWG-DEM/03; FISHERIES_2020_AUG_SWG-DEM_11, FISHERIES_2020_AUG_SWG-DEM_11b

In addition to the routine research undertaken by DAFF – now the Department of Environment, Fisheries and Forestry (DFFE⁸), industry has voluntarily initiated its own investigations in the interest of better understanding the ecosystem and conservation aspects of the hake fishery. For the most part this work is driven by SADSTIA⁹ and through the Responsible Fisheries Alliance (RFA)¹⁰ in support of ecolabel certification by means of the MSC and consumer awareness through SASSI^{11,12}.

The research initiatives, conducted in collaboration with tertiary institutions, the government department scientists, NGOs and independent scientific monitoring companies, specifically reflect the actions required to close out any conditions of certification raised during the MSC assessment process. The Unit of Certification (UoC), defined in this instance as the deepsea and inshore trawl fishery sectors represented by SADSTIA and SECIFA, is awarded a 5-year certificate during the lifespan of which it is required to close-out any conditions. A Client Action Plan (CAP) is drafted laying out the strides the fishery intends to take to achieve this. Since the adoption of the new MSC Standard V2.1 and a further 'raising of the bar', there are a number of critical new milestones the fishery is required to meet. These are reflected in conditions linked to; Endangered, Threatened and Protected (ETP) species and benthic habitat impacts – specifically relating to Vulnerable Marine Ecosystems (VMEs). However, it is important to reflect that where MSC conditions have not been raised then the fishery has been scored as meeting the global-best practice come to be expected of it. This applies to Primary (managed) bycatch, secondary (unmanaged) bycatch and overarching ecosystem impacts.

Longstanding management interventions in support of habitat protection include the Trawl Ring-Fence. This was implemented in 2004 by the deepsea and inshore trawl sectors to ensure that the fishery only operates in historically trawled areas that conceivably are not home to fragile habitat types. The two sectors also supported the development of 20 new offshore MPAs¹³ in cooperation with the Department of Environmental Affairs and the South African National Biodiversity Institute (SANBI) in order to protect most of the important marine habitat types that occur on the continental shelf.

Co-ordination of activities relating to habitats and VMEs is the responsibility of the SADSTIA VME Management Committee, first convened in February 2020. A comprehensive guide to support data collection on marine invertebrates (Atkinson & Sink 2018¹⁴) and posters to support VME indicator species identification at sea have been produced. A pilot project to develop a monitoring protocol for VME indicator organisms has been conducted and already observers conduct invertebrate sampling during one trawl per day on an ongoing basis.

⁸ <https://www.environment.gov.za/branches/fisheriesmanagement>

⁹ <https://www.sadstia.co.za/>

¹⁰ <https://www.rfalliance.org.za/>

¹¹ <http://wwfsassi.co.za/south-african-offshore-trawl-bycatch-fishery-conservation-project/>

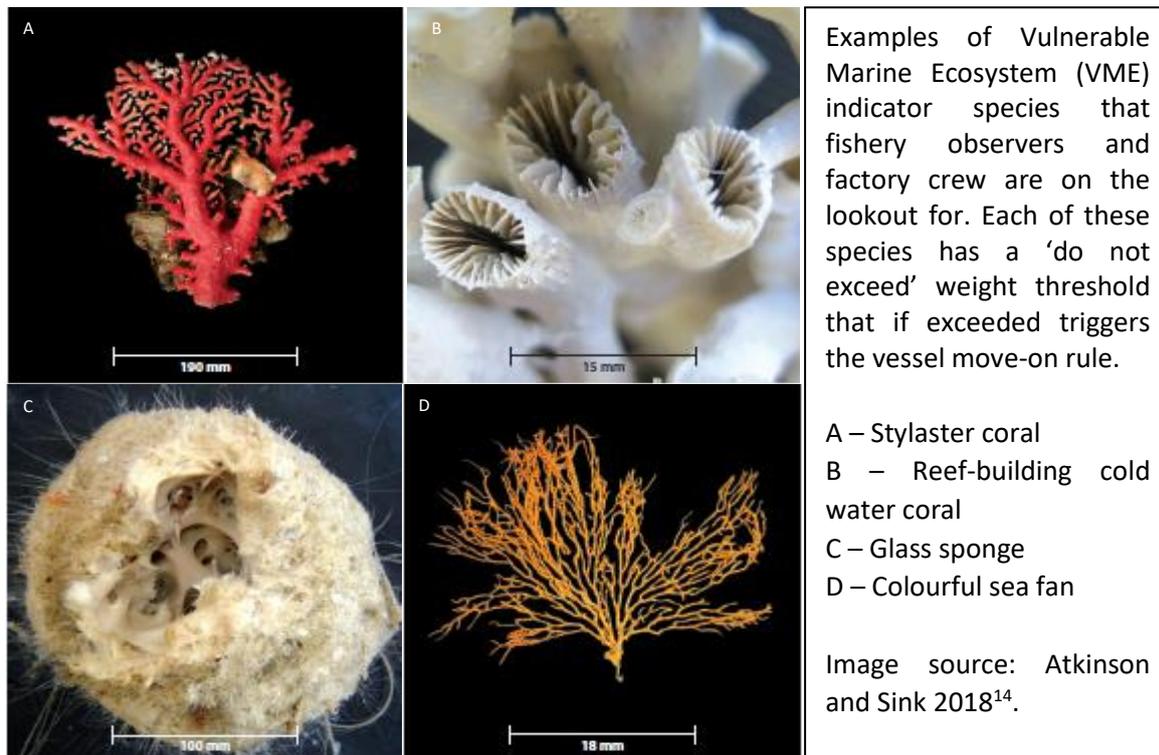
¹² <http://wwfsassi.co.za/hake-inshore-trawl-fishery-conservation-project/>

¹³ <https://www.marineprotectedareas.org.za/explore>

¹⁴

http://www.saeon.ac.za/Field%20Guide%20to%20SA%20Offshore%20Marine%20Invertebrates_web%20full%20version.pdf

WWF-SA and SADSTIA are in the process of finalizing a new agreement that builds on the successes and learnings of the 2016-2019 SADSTIA offshore trawl Fisheries Conservation Project (FCP). The second phase is set to commence in January 2021 and will span a 3 year time period.



Outlook for the Hake Fishery

Management of hake and fisheries in general aim for “sustainability”, which by definition can be the ability to be maintained at a certain rate or level or, the avoidance of the depletion of natural resources in order to maintain an ecological balance. Sustainability therefore depends on your frame of reference. From an economic and job security standpoint for example, the sustainability of the fishery was recently called into question when the ongoing global pandemic forced most operations to radically innovate in order to continue to function under a “new normal”. Along the sea floor (the “habitat”) however things carried on blissfully unaware of COVID19, or perhaps the effects of a reduction in fishing effort are still to be seen. From whichever viewpoint you are looking, during 2020 the message seems clear enough - always innovate and improve - and we can hopefully envisage a positive change to our collective behaviours – something that the Oceana group perpetuates. What has remained unchanged is the demand for high quality, fresh and frozen seafood caught and processed in South Africa, with the guarantee that it is sourced from a sustainable well managed fishery.