



MarinTrust Whole fish fishery assessment report

Document TEM-002 (prev. FISH2) - Version 3.0

Issued June 2024 – Effective June 2024

South African Multispecies Fishery

Re-assessment, July 2024

WF11

Table 1: Whole fish fishery assessment scope

Fishery name	South African Multispecies Fishery
MarinTrust report code	WF11
Type 1 species (common name, Latin name)	Anchovy (<i>Engraulis encrasicolus</i>) Sardine (<i>Sardinops sagax</i>) Redeye round herring (<i>Etrumeus whiteheadi</i>)
Fishery location	South Africa EEZ
Gear type(s)	Purse seine, pelagic trawl
Management authority (country/state)	Department of Environment, Forestry and Fisheries (DFFE), South Africa

Table 2: Applicant and Certification Body details

Application details			
Applicant(s)	Lucky Star Ltd. (St Helena Bay); Lucky Star Ltd. (Amawandle Pelagic); Pioneer Fishing (West Coast) Pty Ltd (St Helena Bay); West Point Processors (Pty) Ltd.		
Applicant country	South Africa		
Certification Body details			
Name of Certification Body	LRQA		
Contact Information for CB (e.g. email address/address/telephone number)	E: mt-ca@lrqa.com LRQA, 4-5 Lochside Way, Edinburgh Park, EH12 9DT T: +44 800 092 0452		
Fishery Assessor name	Sam Peacock		
CB Peer Reviewer name	Sam Dignan		
Number of assessment days	5	Assessment period (mm/yyyy to mm/yyyy)	June 2024 – July 2024

Table 3: Assessment outcome

Assessment outcome (See Table 4 for a summary of assessment determination)		Approve
Approval validity	Valid from (mm/yyyy): June 2024	Valid until (mm/yyyy): June 2025
CB peer reviewer evaluation		Agree with assessment determination
Fishery Assessment Peer Review Group external peer reviewer evaluation		Agree with assessment determination

Table 4: Assessment determination

Assessment determination	
Summary of assessment and outcome	
<p>This is the first Version 3 assessment of the South African Multispecies fishery. Catch data for the fishery is good, and allows a robust species categorisation to be conducted. The large majority of the catch in all recent years consists of three species: anchovy (<i>Engraulis encrasicolus</i>), sardine (<i>Sardinops sagax</i>), and redeye round herring (<i>Etrumeus whiteheadi</i>). Together, these species consistently represent at least 95% of catches, and so are the only Type 1 species. Anchovy and sardine have been managed relative to established reference points for some time, and were assessed under Category A. In previous MT assessments, redeye round herring has been assessed under Category B; however, recent advances in the development of a Harvest Control Rule for the stock allowed it to be assessed under Category A in the current assessment.</p> <p>Two Category D species were identified: horse mackerel (<i>Trachurus capensis</i>) and chub mackerel (<i>Scomber japonicus</i>). In previous years an experimental mesopelagic fishery has led to catches of lanternfish and lightfish; however this fishery has not been carried out recently and these species are not present in the catch in significant quantities.</p> <p>Management of the fishery is robust and collaborative, and there is no evidence of widespread non-compliance or IUU activity. The fishery meets the requirements of Section M.</p> <p>As there is extensive overlap between management methodology for the three Type 1 species, they were assessed in a combined Category A assessment. Landings data are recorded and the status of all three stocks is well understood. All three stocks are currently considered to have a biomass above the target and limit reference point levels.</p> <p>Both Category D species were awarded a PASS rating in the PSA, and Tables D1 and D2 were not used.</p> <p>Interactions between the fishery and ETP species are extremely rare, and due to the gears used interactions with seabed habitats are similarly very unlikely. Regarding ecosystems, the importance of small pelagic fish in South African marine ecosystems is clearly well understood by managers, with efforts made to manage the potential impacts of the fishery, particularly on IUCN Endangered African Penguin populations.</p> <p>Overall, the fishery meets the requirements of the V3 assessment, and should be approved for use as a source of raw material for MarinTrust certified facilities.</p>	
Summary of CB peer review	<p>Overall, this is a well-researched and written assessment of a mixed small pelagic fishery which ultimately meets the requirements of the MarinTrust V3 assessment such that raw material derived from the fishery should be approved for in MarinTrust certified facilities.</p>

<p>Summary of external peer review (see Appendix 1 for the full peer review report)</p>	<p>Overall, the assessment report provides clear and concise justification for each section and clause, and is referenced with the most recent evidence.</p> <p>Minor comments made:</p> <p>M2.3.1: Is it worth considering a note to on site auditor to enquire (again) on the availability of statistical or similar reports on fishery compliance.</p> <p>Horse mackerel: Is it worth a short note to explain the use of Cat D rather than C (no disagreement from the External Peer Reviewer of the Cat D classification).</p>
<p>Notes for on-site auditor</p>	<p>On-site auditor should ask whether fishery inspection/compliance reports are available for this fishery, as related to M2.3.1.</p> <p>Please also ask whether the Cunene horse mackerel (<i>T. trecae</i>) or African horse mackerel (<i>T. delagoa</i>) are present in the catch.</p>

Table 5: General results

Section	Outcome (Pass/Fail)
M1 - Management Framework	PASS
M2 - Surveillance, Control and Enforcement	PASS
E1 - Impacts on ETP Species	PASS
E2 - Impacts on Habitats	PASS
E3 - Ecosystem Impacts	PASS

Table 6: Species-specific results

See Table 7 for further details of species categorisation.

Category	Species name (common & Latin name)	Outcome (Pass/Fail/n/a)	
Category A	Anchovy (<i>Engraulis encrasicolus</i>)	A1	PASS
		A2	PASS
		A3	PASS
		A4	PASS
	Sardine (<i>Sardinops sagax</i>)	A1	PASS
		A2	PASS
		A3	PASS
		A4	PASS
	Redeye round herring (<i>Etrumeus whiteheadi</i>)	A1	PASS
		A2	PASS
		A3	PASS
		A4	PASS
Category B	No Category B Species		
Category C	No Category C Species		
Category D	Horse mackerel (<i>Trachurus capensis</i>)	PASS	
	Chub mackerel (<i>Scomber japonicus</i>)	PASS	

Table 7: Species categorisation table

List of all the species assessed. Type 1 species are assessed against Category A or Category B. Type 1 species must represent 95% of the total annual catch. Type 2 species are assessed against Category C or Category D. Type 2 species may represent a maximum of 5% of the annual catch. Species that comprise less than 0.1% of the catch are not required to be assessed or listed here.

Species name (common & Latin name)	Stock	CITES listed yes/no	IUCN Red list Category	% catch composition	Management (Y/N)	Category (A, B, C or D)
Anchovy (<i>Engraulis encrasicolus</i>)		No	Least Concern ¹	67.2%	Yes	A
Sardine (<i>Sardinops sagax</i>)		No	Least Concern ²	10.4%	Yes	A
Redeye round herring (<i>Etrumeus whiteheadi</i>)		No	Least Concern ³	20.7%	Yes	A
Horse mackerel (<i>Trachurus capensis</i>)		No	Least Concern ⁴	1.3%	No	D
Chub mackerel (<i>Scomber japonicus</i>)		No	Least Concern ⁵	0.6%	No	D

Rationale

The South African mixed pelagic fishery targets three species: anchovy (*Engraulis encrasicolus*), sardine (*Sardinops sagax*), and redeye round herring (*Etrumeus whiteheadi*). Historically the fishery has also targeted horse mackerel (*Trachurus capensis*) and chub mackerel (*Scomber japonicus*); however, the quantity of these species in the catch has been relatively small since the 1970s and they are now only caught as bycatch.

The most recent government report on the Status of the South African Marine Fishery Resources (DFFE 2023), published in April 2024, provides full catch data by species for the mixed pelagic fishery covering the period 2000 – 2022. A summary of the most recent three years for which data are available is provided in the table below. The three main target species – anchovy, sardine, and round herring – consistently make up more than 95% of the catch, and are therefore Type 1 species. Two main bycatch species – horse mackerel and chub mackerel – consistently represent more than 0.1% of the catch and are therefore Type 2 species. Historically, an experimental mesopelagic fishery has sometimes meant significant quantities of lanternfish and lightfish in the overall catch; however this component of the fishery has not been conducted in recent years and this is reflected in the catch data.

Catches of each species or species group in the South African small pelagic fishery over the most recent 3 years for which data are available. Catches are in '000t. "Average %" is the average annual percentage of the catch represented by each species or species group (DFFE 2023).

¹ <https://www.iucnredlist.org/species/198568/15546291>

² <https://www.iucnredlist.org/species/183347/143831586>

³ <https://www.iucnredlist.org/species/154968/15530233>

⁴ <https://www.iucnredlist.org/species/21113101/43156455>

⁵ <https://www.iucnredlist.org/species/170306/170083106>

Species	Catch 2020	% 2020	Catch 2021	% 2021	Catch 2022	% 2022	Average %
Anchovy	285.18	77.4%	156.24	61.3%	172.19	63.0%	67.2%
Sardine	24.56	6.6%	31.84	12.5%	33.00	12.1%	10.4%
Redeye round herring	53.75	14.6%	57.30	23.3%	66.42	24.3%	20.7%
Horse mackerel	2.17	0.6%	7.86	3.1%	0.82	0.3%	1.3%
Chub mackerel	2.83	0.8%	1.53	0.6%	0.83	0.3%	0.6%
Mesopelagic	0.00	0%	0.02	0%	0.01	0%	0%
Total catch	368.51		254.79		273.28		

In terms of management, anchovy and sardine are subject to regular stock assessment and are managed relative to established reference points using an annual quota. As such, these two species have been assessed under Category A. Historical efforts to conduct a quantitative stock assessment for redeye round herring have not been successful; however in 2022 MARAM published an assessment which utilised data from 1987 – 2021 (de Moor 2023). The outcomes of this stock assessment were used to implement a Harvest Control Rule for the stock, although a full empirical Management Procedure is not yet in place for the stock (de Moor 2024). For the purposes of assessing the stock, round herring is believed to be able to pass Category A, and has therefore been assessed under this category, as per the MT fishery assessment guidance.

Although there has historically been an OMP in place for horse mackerel, it has not been applied since 2016 and there do not appear to be any explicitly defined reference points for the stock. For these reasons, it was assessed under Category D. There do not appear to be any species-specific management measures in place for chub mackerel, and so it was also assessed under Category D.

References

de Moor, C. (2023). Finalised assessment of South African round herring, using data from 1987 to 2021. University of Cape Town. Report. <https://doi.org/10.25375/uct.24135177.v1>

de Moor, C. (2024). Further work towards managing the South African round herring fishery. University of Cape Town. Report. <https://doi.org/10.25375/uct.25702245.v1>

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

Management requirements

This section, or module, assesses the general management regime applied to the fishery under assessment. It comprises two parts, M1, which evaluates the management framework, and M2, which evaluates surveillance, control and enforcement within the fishery.

- 1.1. All management criteria must be met (pass) for a fishery to pass the Management requirements.
 - 1.1.1. The sub-criteria offer a structured evidence base to demonstrate that the fishery sufficiently meets the management criteria. It is not expected that sub-criteria are assessed independently of the main criterion.

M1 Management framework

M1.1	M1.1 There is an organisation responsible for managing the fishery.
	<i>In reaching a determination for M1.1, the assessor should consider if the following is in place:</i>
	M1.1.1 The management and administration organisations within the fishery are clearly identified.
	M1.1.2 The functions and responsibilities of the management organisations include the overall regulation, administration, science and data collection and enforcement roles, and are documented and publicly available.
	M1.1.3 Fishers have access to information and/or training materials through nationally recognised organisations.
Outcome	<i>Pass</i>
Rationale	
<p>Overall: Management and administration organisations are clearly defined, with sub-divisions which cover all the main areas of fishery management. Some opportunities for training are available to fishers. Overall, M1.1 is met.</p> <p>M1.1.1: The primary organisation with responsibility for the management of fisheries in South Africa is the Fisheries Management Branch of the Department of Forestry, Fisheries and the Environment (DFFE) (DFFE 2024). The Fisheries Management Branch has six sub-programmes each with a defined role (see M1.1.2 below).</p> <p>M1.1.2: The six sub-programmes of the Fisheries Management Branch are as follows (DFFE 2024):</p> <ul style="list-style-type: none"> • Office of the Deputy Director General: Strategic leadership and overall management of the other sub-programmes. • Monitoring, Control and Surveillance: Responsible for enforcement of legislation and regulations. • Fisheries Research and Development: Conducts research and stock assessment activities. • Marine Resources Management: Develops management measures and regulations. • Marine Living Resources Fund: Supports the sustainable development of the fisheries and aquaculture sectors in South Africa. • Aquaculture Development and Freshwater Fisheries: Provides technical and scientific support to aquaculture and freshwater fisheries in South Africa. 	

M1.1.3: Fishers have access to training material. The South African Fisheries Development Fund is a non-profit company established to “assist small, medium and micro enterprises and small-scale fishing communities with their development by providing business support; skills development; accidental death or disability cover and alternative economic opportunities” (SAFD 2024). Training delivered by the Fund includes skipper training, short wave radio training, and pre-sea (Safety Familiarisation) training (SAFD 2024a). There does not appear to be any fisher training offered by the DFFE.

References

DFFE (2024). Fisheries Management Branch, Introduction. <https://www.dffe.gov.za/FisheriesManagement>

SAFD (2024). About the fund. <https://fisheriesfund.co.za/about/>

SAFD (2024a). Our Projects. <https://fisheriesfund.co.za/projects/>

M1.2	M1.2 Fishery management organisations are legally empowered to take management actions.
	<i>In reaching a determination for M1.2, the assessor should consider if the following is in place:</i>
	M1.2.1 There are legal instruments in place to give authority to the management organisation(s) which can include policies, regulations, acts or other legal mechanisms.
	M1.2.2 Vessels wishing to participate in the fishery must be authorised by the management organisation(s).
	M1.2.3 The management system has a mechanism in place for the resolution of legal disputes.
	M1.2.4 There is evidence of the legal rights of people dependent on fishing for food or livelihood.

Outcome *Pass*

Rationale

Overall: There is a legal instrument in place empowering fishery managers and setting out the framework of the fisheries management system. All vessels operating in South African fisheries must obtain a licence. There is a mechanism in place for the resolution of disputes. There is evidence of efforts to recognise and defend the rights of small-scale fishers, although there is a degree of uncertainty as to how effective these efforts have been to date. Overall, the fishery meets the requirements of this clause.

M1.2.1: The primary legal instrument relevant to the management of fisheries in South Africa is the Marine Living Resources Act (No. 18 of 1998), as amended in 1998, 2000 and 2014. The purpose of the Act is to “provide for the conservation of the marine ecosystem, the long-term sustainable utilisation of marine living resources and the orderly access to exploitation, utilisation and protection of certain marine living resources; and for these purposes to provide for the exercise of control over marine living resources in a fair and equitable manner to the benefit of all the citizens of South Africa”

(MLRA 1998).

The Act, *inter alia*, establishes the Consultative Advisory Forum for Marine Living Resources (Paragraphs 5-7); empowers the Minister to designate fisheries control officers (Paragraph 9) and sets out the powers of those officers (Chapter 6); incorporates the Marine Living Resources Fund (Paragraph 10); sets out the planning and management processes for commercial fishing (Chapter 3 Part 3); establishes the Fisheries Transformation Council (Chapter 3 Part 5); empowers the Minister to create Marine Protected Areas (Chapter 4); sets out the penalties for contravenes laws and regulations (Chapter 7); and empowers the Minister to make regulation pursuant to the terms of the Act (Chapter 8).

M1.2.2: Any local fishing vessel (as distinct from international vessels) is required to register with the South African government, obtain a safety certificate from the South African Maritime Safety Authority, and obtain a fishing vessel licence from the DFFE. Only South African individuals or South-Africa-based organisations are permitted to operate a local fishing vessel (Gov.za 2024). Similarly, foreign fishing vessels must also apply for a licence before being permitted to operate in South African waters (MLRA 1998).

M1.2.3: Dispute resolution is managed according to Chapter 4 of the National Environmental Management Act, 107 of 1998, which “authorises the use of alternative dispute resolution mechanisms so as to ensure fair decision making and effective conflict management” (DFFE 2024).

M1.2.4: The approach to small-scale and subsistence fisheries is set out in the Policy for the Small Scale Fisheries Sector in South Africa (DAFF 2012). The policy “aims to provide redress and recognition to the rights of Small Scale fisher communities in South Africa previously marginalised and discriminated against in terms of racially exclusionary laws and policies, individualised permit-based systems of resource allocation and insensitive impositions of conservation-driven regulation” (DAFF 2012). Some analyses have concluded that there is a “mismatch between policy rhetoric and implementation practices” (Sowman & Sunde 2021); however there is also some evidence that progress is being made towards achieving the aims of the policy (e.g. Schneider 2023).

References

Department of Agriculture, Forestry and Fisheries (2012). Policy for the Small Scale Fisheries Sector in South Africa. https://www.gov.za/sites/default/files/gcis_document/201409/35455gon474.pdf

DFFE (2024). Environmental sector conflict resolution and dispute resolution. <https://www.dffe.gov.za/environment-sector-conflict-and-dispute-resolution>

Gov.za (2024). <https://www.gov.za/services/services-organisations/permits-licences-and-rights/fishing-permits/apply-local-fishing>

Schneider (2023). For South Africa’s small fishers, co-ops prove a necessary, but bumpy, step up. Mongabay, 31 August 2023. <https://news.mongabay.com/2023/08/for-south-africas-small-fishers-co-ops-prove-a-necessary-but-bumpy-step-up/>

South Africa Marine Living Resources Act 18 of 1998. <https://www.gov.za/documents/marine-living-resources-act-27-may-1998-0000>

Sowman, M. & Sunde, J. (2021). A just transition? Navigating the process of policy implementation in small-scale fisheries in South Africa. *Marine Policy* 132, 2021, 104683.
<https://www.sciencedirect.com/science/article/abs/pii/S0308597X21002943>

M1.3	M1.3 There is an organisation responsible for collecting data and (scientifically) assessing the fishery.
	<i>In reaching a determination for M1.3, the assessor should consider if the following is in place:</i>
	M1.3.1 The organisation(s) responsible for collecting data and assessing the fishery is/are clearly identified.
	M1.3.2 The management system receives scientific advice regarding stock, non-target species and ecosystem status.
	M1.3.3 Scientific advice is independent from the management organisation(s) and transparent in its formulation through a clearly defined process.
Clause outcome	<i>Pass</i>
Rationale	
<p>Overall: The DFFE and MARAM are responsible for collecting and analysing fisheries data. Advice provided by scientific organisations is used to inform management policies and regulations. No evidence was encountered to suggest that management advice is politically influenced. Overall, the requirements of this clause are met.</p> <p>M1.3.1: The main organisation responsible for the collection and analysis of fishery data is the Fisheries Research and Development sub-programme of the Fisheries Management branch of the DFFE. Modelling and stock assessment support is provided by the Marine Resource Assessment and Management Group (MARAM) at the Department of Mathematics and Applied Mathematics at the University of Cape Town. MARAM “is concerned with quantitative studies related to scientific recommendations for conservation measures governing the utilisation of South African and some other of the world’s renewable marine resources” (MARAM 2024), and is funded primarily by the Fisheries Management branch. All analyses provided by MARAM are published in papers available on the MARAM website and elsewhere (MARAM 2024a).</p> <p>M1.3.2: Management advice is provided by the Fisheries Research and Development sub-programme and MARAM, and informs the management of the fishery. A summary of all advice and stock status conclusions is published every 2-4 years in the form of the report “Status of the South African Marine Fishery Resources” (e.g. DFFE 2023). As noted above, management recommendations made by MARAM as a result of their analyses are published on their website (MARAM 2024a). A full list of research report, projects, and other publications produced by the Fisheries Management branch is provided on the DFFE website (DFFE 2024).</p> <p>M1.3.3: Based on a review of the publications of both MARAM and the DFFE, the assessor believes that advice is broadly independent from political influence. No evidence was found to suggest that political pressure is applied to influence stock assessment conclusions or recommendations.</p>	

References

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE.
https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

DFFE (2024). Research reports and projects.
<https://www.dffe.gov.za/FisheriesManagementResearchreportsandresearch%20projects>

MARAM (2024). About us. <https://science.uct.ac.za/maram>

MARAM (2024a). Research Output 2024. <https://science.uct.ac.za/maram/2024>

M1.4	M1.4 The fishery management system is based on the principles of sustainable fishing and a precautionary approach.
	<i>In reaching a determination for M1.4, the assessor should consider if the following is in place:</i>
	M1.4.1 A policy or long-term management objective for sustainable harvesting based on the best scientific evidence and a precautionary approach is publicly available and implemented for the fishery.

Outcome	<i>Pass</i>
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Rationale

M1.4.1: The Marine Living Resources Act, which underpins South African fisheries management, lists, in Paragraph 2, the following as being amongst the Objectives and Principles of the Act (MLRA 1998):

- The need to achieve optimum utilisation and ecologically sustainable development of marine living resources.
- The need to conserve marine living resources for both present and future generations.
- The need to apply precautionary approaches in respect of the management and development of marine living resources.
- The need to protect the ecosystem as a whole, including species which are not targeted for exploitation.
- The need to preserve marine biodiversity.

The stated Mission of the DFFE is “Providing leadership in environmental management, conservation and protection towards sustainability for the benefit of South Africans and the global community” (DFFE 2024).

References

DFFE (2024). Welcome to the Department of Forestry, Fisheries and the Environment.
<https://www.dffe.gov.za/>

South Africa Marine Living Resources Act 18 of 1998. <https://www.gov.za/documents/marine-living-resources-act-27-may-1998-0000>

M1.5	<p>M1.5 There is a clearly defined decision-making process which is transparent, with processes and results made publicly available.</p> <p><i>In reaching a determination for M1.5, the assessor should consider if the following is in place:</i></p>
	<p>M1.5.1 There is participatory engagement through which fishery stakeholders and other stakeholders can access, provide information, consult with, and respond to, the management systems’ decision-making process.</p>
	<p>M1.5.2 The decision-making process is transparent, with results made publicly available.</p>
	<p>M1.5.3 The fishery management system is subject to periodic internal or external review to validate the decision-making process, outcomes and scientific data.</p>
Outcome	<i>Pass</i>
<p>Rationale</p> <p>Overall: There is evidence that fisheries management in South Africa is participatory, transparent, and subject to internal management review. Overall, the assessor considers the mechanisms and processes in place to meet the requirements of this clause.</p> <p>M1.5.1: Paragraphs 5 – 8 of the MLRA 1998 establish a Consultative Advisory Forum (CAF) for Marine Living Resources. The Forum consists of five members selected by the Minister to ensure that the Forum is “broadly representative and multidisciplinary”, and able to advise the Minister on issues related to the management of the fishing industry, marine living resources management, the establishment of OMPs and other fishery management plans, and other areas related to the objectives of the MLRA (MLRA 1998).</p> <p>Details on the membership and activities of the CAF are difficult to find; however there are some specific examples. In November 2021, the Minister requested advice from the CAF on management of the West Coast Rock Lobster fishery. In addition to the usual CAF membership, seven observers with speaking rights were appointed, to ensure fishery-specific knowledge. The CAF also considered evidence from other relevant stakeholders (DFFE 2021).</p> <p>In addition to the ad-hoc consultation processes evidenced by the existence of the CAF, there are regular consultations on other issues. One example is the public consultation meetings baked in to the fishing rights allocation process (DFFE 2021a). Stakeholders are invited to submit written evidence, or attend in-person or remote consultation meetings held around the country.</p> <p>M1.5.2: All the information required to complete this MT fishery assessment was publicly available online. Details of the stock assessment and OMP development processes are published on the MARAM website (MARAM 2024). Announcements of DFFE decisions are published on government websites (Gov.za 2024), often including detailed explanations of the decision-making process (e.g. DFFE 2023).</p> <p>M1.5.3: South Africa is reported to be one of the first countries to adopt fishery Management Procedures (MPs) which had been fully tested using Management Strategy Evaluation (MSE) (de Moor <i>et al</i>, 2022). OMPs continue to be developed on this basis.</p>	

References

De Moor, C., Butterworth, D.S., & Johnston, S. (2022). Learning from three decades of Management Strategy Evaluation in South Africa, ICES Journal of Marine Science, Volume 79, Issue 6, August 2022, Pages 1843–1852, <https://doi.org/10.1093/icesjms/fsac114>

DFFE (2021). Special Project Report on the review of the TAC for West Coast Rock Lobster for the 2021/22 fishing season by the Consultative Advisory Forum for Marine Living Resources. https://www.dffe.gov.za/sites/default/files/reports/wcr12021.2022fishingseasonCAF_MLRASpecialReport.pdf

DFFE (2021a). 2021 fishing rights allocation process: public consultation meetings. <https://www.dffe.gov.za/2021-fishing-rights-allocation-process-public-consultation-meetings>

DFFE (2023). General published reasons for decisions on appeal for the verification of small-scale fishers in the Western Cape province. https://www.dffe.gov.za/sites/default/files/legislations/appeals/13nov23gpr_smallscalefisheries_reallocation.pdf

Gov.za (2024). Department of Forestry, Fisheries and the Environment, news and announcements. <https://www.gov.za/taxonomy/term/908>

South Africa Marine Living Resources Act 18 of 1998. <https://www.gov.za/documents/marine-living-resources-act-27-may-1998-0000>

M2 Surveillance, control and enforcement

M2.1	M2.1 There is an organisation responsible for monitoring compliance with fishery laws and regulations.
	<i>In reaching a determination for M2.1, the assessor should consider if the following is in place:</i>
	M2.1.1 There is an organisation responsible for monitoring compliance with specific monitoring, control and surveillance (MCS) mechanisms in place.
	M2.1.2 There are relevant tools or mechanisms used to minimise IUU fishing activity.
	M2.1.3 There is evidence of monitoring and surveillance activity appropriate to the intensity, geography, management control measures and compliance behaviour of the fishery.
Outcome	<i>Pass</i>
Rationale	
Overall: There is an organisation responsible for monitoring compliance with fishery laws and regulations, and there are measures in place to carry out this monitoring.	
M2.1.1: Monitoring, control and surveillance (MCS) is primarily the responsibility of the Monitoring, Control and Surveillance Sub-programme of the Fisheries Branch of DFFE (DFFE 2024). The MLRA allows the designation of fishery observers and fishery control officers, whose activities are supported by the police, navy and coastguard.	

M2.1.2: Catches are inspected and weighed upon landing at designated ports. Skippers are required to conduct catch sampling exercises on board. All vessels must be licensed and must have the original copy of the licence on board during fishing activity. The license lists conditions including permitted fishing areas; effort limitations and gear restrictions; mandatory VMS; landing requirements; and mandatory observer coverage.

M2.1.3: VMS is mandatory on vessels operating in this fishery. Observer coverage is provided by Capricorn Marine Environmental PTY LTD. CapMarine produces monthly reports summarising observer coverage and indicating the catch composition of observed hauls. Several of these monthly reports were provided by the applicant, and indicated that there were around 35 – 55 observer deployments per month. Catch composition, length frequency, and catch location data are recorded.

References

DFFE (2024). Fisheries management. <https://www.dffe.gov.za/FisheriesManagement>

South Africa Marine Living Resources Act 18 of 1998. <https://www.gov.za/documents/marine-living-resources-act-27-may-1998-0000>

M2.2	M2.2 There is a framework of sanctions which are applied when infringements against laws and regulations are discovered.
	<i>In reaching a determination for M2.2, the assessor should consider if the following is in place:</i>
	M2.2.1 The laws and regulations provide for penalties or sanctions that are adequate in severity to act as an effective deterrent.
	M2.2.2 There is no evidence of systematic non-compliance.
Outcome	<i>Pass</i>
Rationale	
Overall: Laws and regulations appear to provide adequate penalties, and no evidence was encountered to suggest systematic non-compliance in the fishery.	
M2.2.1: The MLRA sets out, in detail, a range of potential penalties for breaches of regulations or legislation. Penalties for breaching the MLRA, set out in Chapter 7, include: <ul style="list-style-type: none"> • A fine of up to 2 million rand (US\$110,000) or up to five years imprisonment for contravening Section 13 (“Permits”), any licencing conditions, or an authorisation to fish. • A fine of up to 3 million rand (US\$165,000) for breaching rules on high seas fishing or Part 7 of Chapter 3 (“High Seas Fishing”). • A fine of up to 5 million rand (US\$275,000) for breaching section 39 (“Foreign fishing vessel licences”), 45 (“Possession of prohibited gear”), 47 (“Driftnet fishing”), 48 (“Fish aggregating devices”) or 49 (“Stowage of gear”). • A fine or imprisonment of up to 2 years for breaching any regulation made under the Act. <p>The MLRA also empowers fishery control officers to seize vessels, gear, equipment, stores, cargo and catch whenever the officer has “reasonable grounds to believe that it has been or is being used in the commission of an offence in terms of [the MLRA]” (MLRA 1998).</p>	


M2.2.2: No evidence was encountered during the drafting of this assessment report to suggest that there is systematic non-compliance in this fishery. However, neither was evidence available to demonstrate widespread compliance.

References
 South Africa Marine Living Resources Act 18 of 1998. <https://www.gov.za/documents/marine-living-resources-act-27-may-1998-0000>


M2.3	M2.3 There is substantial evidence of widespread compliance in the fishery, and no substantial evidence of IUU fishing.
	<i>In reaching a determination for M2.3, the assessor should consider if the following is in place:</i>
	M2.3.1 The level of compliance is documented and updated routinely, statistically reviewed and available.
	M2.3.2 Fishers provide additional information and cooperate with management/enforcement agencies/organisations to support the effective management of the fishery.
	M2.3.3 The catch recording and reporting system is sufficient for effective traceability of catches per vessel and supports the prevention of IUU fishing.
Outcome	<i>Pass</i>
Rationale	
<p>Overall: Although there is a lack of statistical evidence on compliance rates, information provided by the applicant indicates that vessels and other stakeholders are engaged with the management process, and that steps have been taken to ensure vessels understand and abide by their reporting and other obligations.</p> <p>M2.3.1: Statistical information reporting on the level of compliance in the fishery could not be found online. The applicant was asked to provide any available control and enforcement reports, but none were made available.</p> <p>M2.3.2: Stakeholders in the small pelagic fishery have developed an Operating Manual which is regularly updated and contains a range of useful information for vessels engaged in the fishery. This includes species ID instructions, with photos; catch sampling methodology; a list of designated landing ports for the fishery; templates for recording the results of catch sampling; instructions and templates for quota transfer; instructions and templates for recording and reporting landings; procedure for engaging with observers; information on the biology of the African penguin and a log sheet for recording penguin sightings; and a map and list of Marine Protected Areas. The operating manual is circulated to participating vessels.</p>	

1) Species ID

Anchovy – *Engraulis encrasicolus*
 Size generally between 8 to 12 cm. Soft body with silvery stripe down its side. Lower jaw distinctly shorter than the top jaw.




Sardine / Pilchard – *Sardinops sagax*
 Size juveniles generally between 8 to 12 cm. Larger fish caught generally 18 to 25 cm. Jaw at distinct angle compared to the red-eye. Slightly flattened body and distinct line of black spots down its side. Note dorsal fin and anal fin in vertical line one above the other.



b. Methods

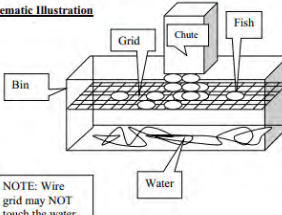
NOTE: TO ENABLE TRUE REFLECTION OF ENTIRE VESSEL HOLD CONTENT, SAMPLING MUST START AS SOON AS VESSEL STARTED TO OFFLOAD, E.G. WITH THE BRAILING METHOD THE FIRST SAMPLE WILL BE TAKEN DURING THE FIRST BRAIL.

Method 1
 "Small" operation – Fish sucked from vessel by pump via chute into bins and onto PLATFORM scale.



1. Sampling time between 20min to 30min intervals, as soon as the offloading starts.
2. Sample size 10-15kg samples.
3. Samples to be taken in a large solid (with NO holes in bottom of bin) bin which will cover the entire chute area where samples are taken.
4. A wire grid will be placed in the bin in such manner that the water/ice can drain properly from the fish. See example below.
5. After proper draining of water/ice (+2-3min.) mass of different fish species and ice should be determined separately for species composition purposes.
6. Right Holder / representatives and Monitor supervisors should do regular random checks that procedures are understood and followed properly

Schematic Illustration



NOTE: Wire grid may NOT touch the water

How a total sample mass is determined:
 Pre-weighed bucket containing sample is NOT allowed!

1. Zero empty bucket.
2. Sort into different species.
3. Weigh species separately in zeroed bucket.
4. Ice treated as a separate species.
5. Add different masses to get total sample mass.

Fig. M2.3.2a. Examples of pages from the operating manual.

M2.3.3: Several examples of catch data records were provided by the applicant. These records include total catches of each species, the proportion of sardine caught in the west and east, and the quantity of each species caught in each of 5 areas in each month. The operating manual described above sets out the reporting template for landings. Taken together these constitute good evidence that a robust recording and reporting system is in place.

References

Small pelagic catch summaries provided by applicant.

South African small pelagic fishery operating manual, by "Small Pelagic Stakeholders", Version 7b (Feb 2024). Provided by applicant.

Species requirements

This section, or module, comprises of four species categories. Each species in the catch is subject to an assessment against the relevant species category in this section (see clauses 1.2 and 1.3 and Table 6).

Type 1 species can be considered the ‘target’ or ‘main’ species in the fishery under assessment. They make up the bulk of the catch and are subjected to a detailed assessment. Type 1 species must represent 95% of the total annual catch. If a species-specific management regime is in place for a Type 1 species, it shall be assessed under Category A. If there is no species-specific management regime in place for a Type 1 species, it shall be assessed under Category B.

Type 2 Species can be considered the ‘non-target’ species in the fishery under assessment. They comprise a small proportion of the annual catch and are subjected to a relatively high-level assessment. Type 2 species may represent a maximum of 5% of the annual catch. If a species-specific management regime is in place for a Type 2 species, it shall be assessed under Category C. If there is no species-specific management regime in place for a Type 2 species, it shall be assessed under Category D.

Species that comprise less than 0.1% of the catch are not required to be assessed or listed here.

Category A species

- 1.2. All clauses must be met for a species to pass the Category A assessment.
 - 1.2.1. If a species fails any of the Category A clauses, it should be re-assessed as a Category B species.

A1 Data collection

A1.1	A1.1 Landings data are collected such that the fishery-wide removals of this species are known.
Outcome	<i>Pass</i>
Rationale	
Commercial catch data for all three Type 1 species (sardine, anchovy and redeye round herring) are collected via vessel logbooks and confirmed through the presence of inspectors at landings (Coatsee <i>et al</i> 2022). Total landings are collated and published periodically in the DFFE Status of the South African Marine Fishery Resources report (e.g. DFFE 2023).	

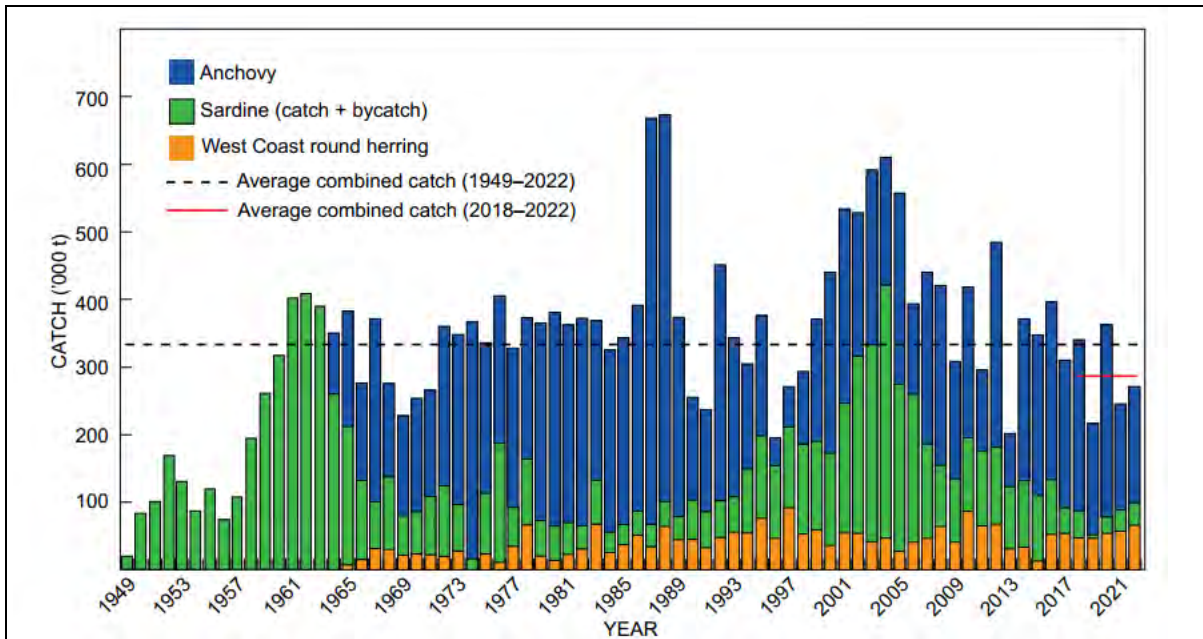


Fig. A1.1a: Annual combined catches of anchovy, sardine and round herring, 1949-2022. The long term average annual catch is shown by the black and white dashed line. The short term (2018-2022) average annual catch is shown by the solid red line (DFFE 2023).

References

Coatzee, J.C., de Moor, C.L., van der Longern, C.D., and Butterworth, D.S. (2022). A summary of the South African sardine (and anchovy) fishery. <https://doi.org/10.25375/uct.22146596.v1>

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

A1.2	A1.2 Sufficient additional information is collected to enable an indication of stock status to be estimated.
Outcome	<i>Pass</i>
<p>Rationale</p> <p>In addition to commercial catch totals, a range of fishery -dependent and fishery-independent information is collected to inform the management of the fishery. The biomass and distribution of anchovy, sardine and round herring, along with other pelagic and mesopelagic species relevant to the fishery, is assessed biannually using hydroacoustic surveys (DFFE 2023). Although the time series of these estimates was disrupted between 2018 and 2021, surveys have recently successfully resumed. A significant focus for fishery research is the distribution of small pelagic species and potential sub-stocks off the South African coast. The results of these research efforts are also fed into stock assessment and management activities (DFFE 2023).</p> <p>Samples from commercial catches are used to obtain length-frequency data. Other fishery-dependent information collected by scientists includes sex frequency, gonad maturity stage, fish condition, and parasite infection rates (Coatzee <i>et al</i> 2022).</p> <p>References</p>	

Coatzee, J.C., de Moor, C.L., van der Longern, C.D., and Butterworth, D.S. (2022). A summary of the South African sardine (and anchovy) fishery. <https://doi.org/10.25375/uct.22146596.v1>

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

A2 Stock assessment

A2.1	A2.1 A stock assessment is conducted at least once every 3 years (or every 5 years if there is substantial supporting information that this is sufficient for the long-term sustainable management of the stock) and considers all fishery removals and the biological characteristics of the species.
Outcome	<i>Pass</i>
Rationale	
<p>Full stock assessments are periodically conducted for each of the three Type 1 species, and used to update the management plan for sardine and anchovy when appropriate. There is currently not a full management plan in place for round herring, but the stock was subjected to its first full quantitative stock assessment (de Moor 2024). The most recent full stock assessment for sardine was carried out in 2023 using data from 1984 – 2022 (de Moor 2023). The most recent full anchovy stock assessment was carried out in 2020, using data from 1984 – 2019 (de Moor 2020). The first round herring stock assessment was finalised in 2022 and used data from 1987 – 2021 (de Moor 2022).</p> <p>In addition to the full stock assessments, Harvest Control Rules are applied to biomass estimates generated by biannual hydroacoustic surveys to determine appropriate catch levels for each species (see A2.3). Therefore although the most recent full stock assessment for anchovy was conducted more than 3 years ago, there is substantial evidence of ongoing analysis to determine the current state of the stock and appropriate levels of fishery removals, for example throughout the MARAM publications database (MARAM 2024). The more recent analysis is also discussed in more detail in the relevant sections of this MT assessment.</p>	
References	
<p>de Moor, C. (2021). The South African anchovy assessment with annual maturity ogives. University of Cape Town. Report. https://doi.org/10.25375/uct.13669787.v1</p> <p>de Moor, C. (2022). Finalised assessment of South African round herring, using data from 1987 to 2021. University of Cape Town. Report. https://doi.org/10.25375/uct.24135177.v1</p> <p>de Moor, C. (2023). Updated assessment of the South African sardine resource using data from 1984-2022. University of Cape Town. Report. https://doi.org/10.25375/uct.22574869.v1</p> <p>de Moor, C. (2024). Further work towards managing the South African round herring fishery. University of Cape Town. Report. https://doi.org/10.25375/uct.25702245.v1</p> <p>MARAM (2024). Research Output 2024. https://science.uct.ac.za/maram/2024</p>	

A2.2	A2.2 The assessment provides an estimate of the status of the biological stock relative to a reference point or proxy.
Outcome	<i>Pass</i>
<p>Rationale</p> <p>The status of each of the three Type 1 stocks is estimated annually as a result of biannual hydroacoustic surveys. Estimates were not available for 2021 but have been generated for every other year since 1984. Estimated biomass is compared to reference points established by a series of Harvest Control Rules.</p> <p>Sardine and anchovy biomass are compared to the HCR and reference points set out in OMP-18 (de Moor 2018), the management plan for sardine and anchovy, and OMP-18rev (de Moor 2021), a revised version of the OMP applying to anchovy only. OMP-18 sets for sardine $B_{s\text{ crit}}$, defined as “November survey estimated biomass threshold below which Critical Biomass metarules are invoked for sardine” (de Moor 2018). This is the biomass value below which sardine is considered to be over-exploited and where Exceptional Circumstances are declared. A similar reference point, $B_{a\text{ crit}}$, was also defined for anchovy and subsequently updated in OMP-18rev.</p> <p>The sardine $B_{s\text{ crit}}$ is set by OMP-18 at 300,000t. The anchovy $B_{a\text{ crit}}$ is set by OMP-18rev at 685,000t. The most recently available estimates of stock biomass for sardine and anchovy were 560,000t and 1,000,000t respectively (DFFE 2023).</p> <p>Redeye round herring is currently managed using an interim HCR which sets a maximum catch of 100,000t, decreasing linearly to 0t as the estimated stock biomass decreases from 750,000t to 187,500t (see figure A2.2c) (de Moor 2024). The most recent available round herring stock biomass estimate was “over 3,000,000t” (DFFE 2023).</p>	

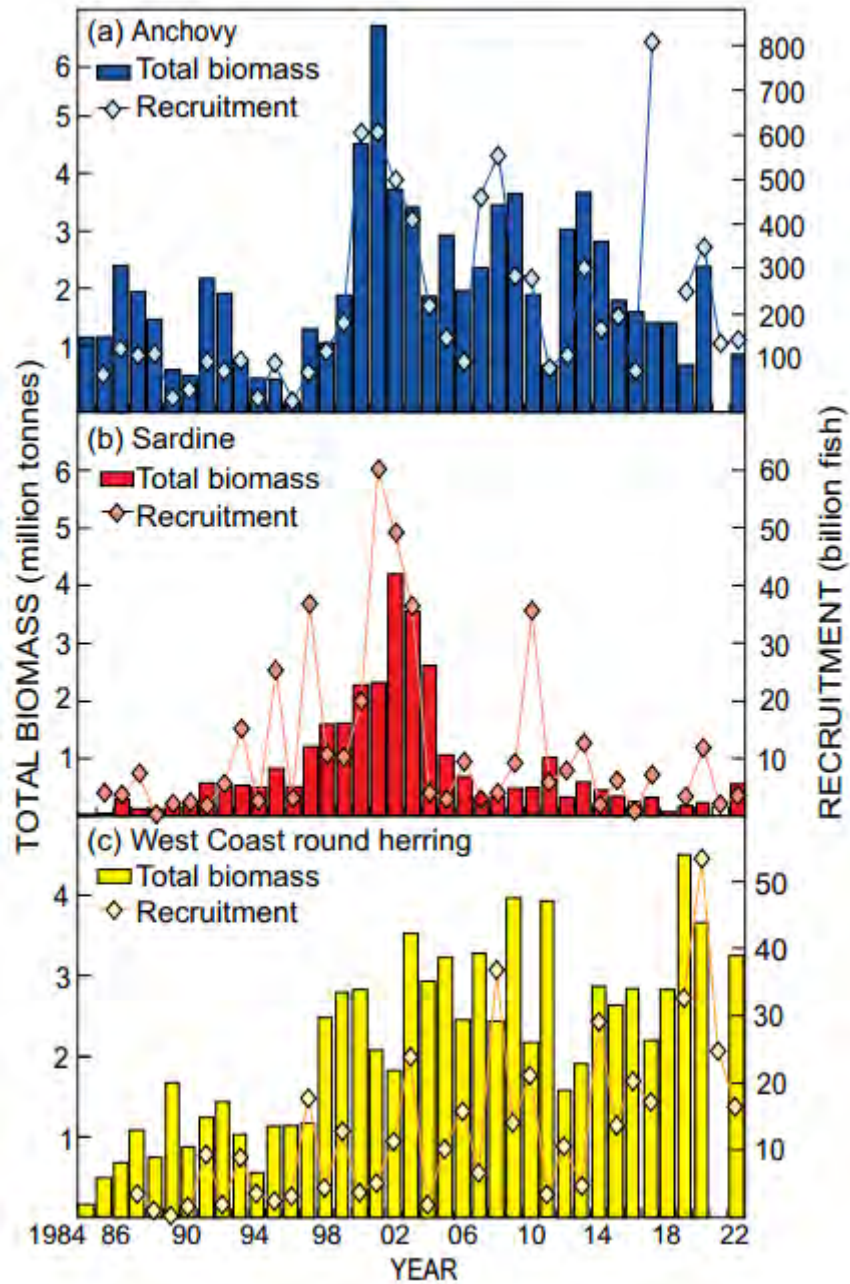


Fig. A2.2a: Time series of acoustically estimated recruitment strength and total biomass of anchovy, sardine and round herring, 1984 – 2022 (DFFE 2023).

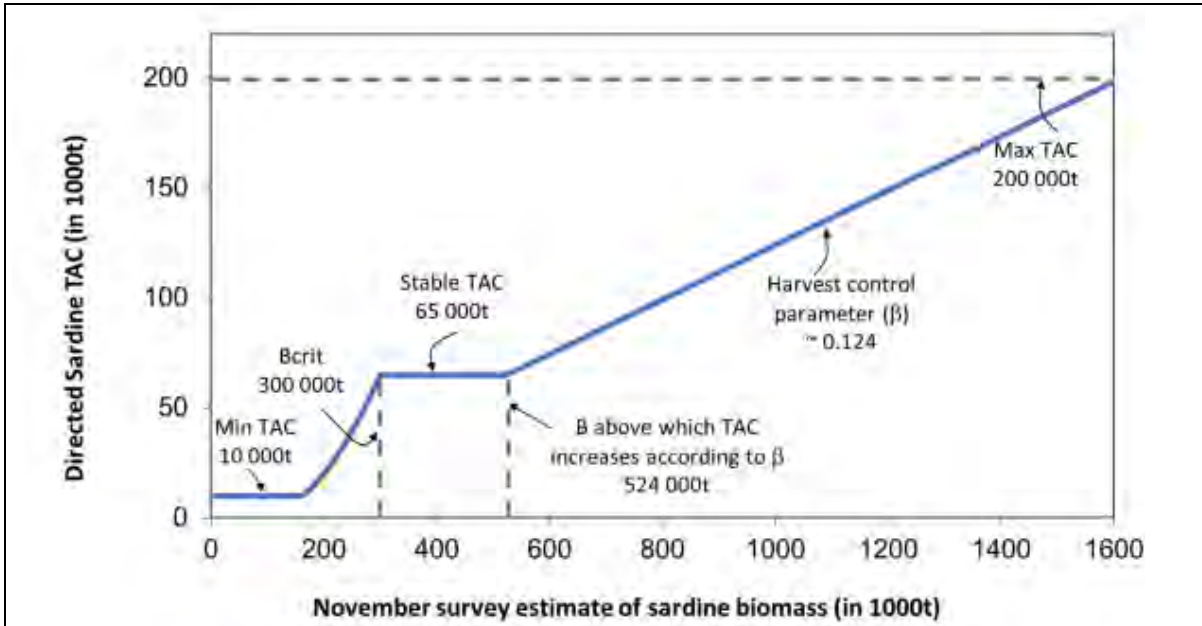


Fig A2.2b: Sardine Harvest Control Rule created by OMP-18 (Coetzee *et al* 2022)

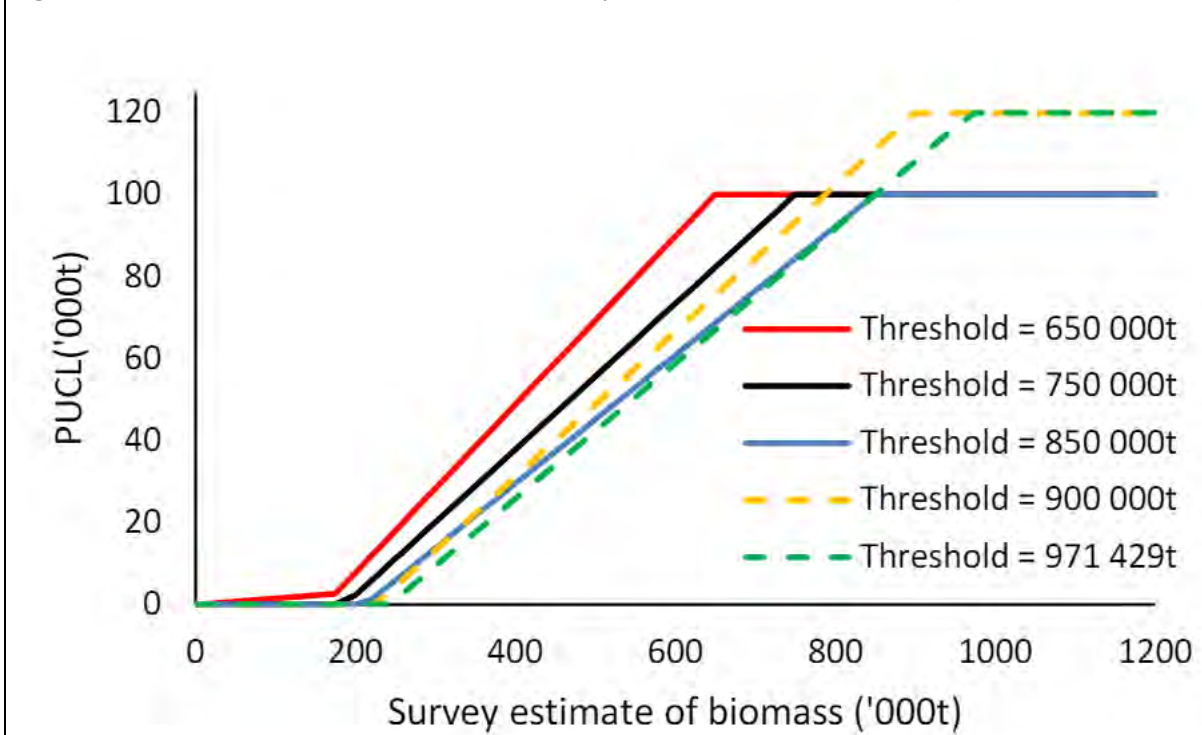


Fig. A2.2c: Harvest Control Rules for redeye round herring. The black line, with a threshold set at 750,000t, is the HCR currently in place. The other lines represent potential future HCRs (de Moor 2024)

References

Coatzee, J.C., de Moor, C.L., van der Longern, C.D., and Butterworth, D.S. (2022). A summary of the South African sardine (and anchovy) fishery. <https://doi.org/10.25375/uct.22146596.v1>

de Moor, C. 2018. The 2018 Operational Management Procedure for the South African sardine and anchovy resources. <http://hdl.handle.net/11427/33220>

de Moor, C. 2021. OMP-18rev: The revised 2018 Operational Management Procedure for the South African anchovy fishery. <http://hdl.handle.net/11427/35874>

de Moor, C. (2024). Further work towards managing the South African round herring fishery. University of Cape Town. Report. <https://doi.org/10.25375/uct.25702245.v1>

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

A2.3	A2.3 The assessment provides an indication of the volume of fishery removals which is appropriate for the current stock status.
Outcome	<i>Pass</i>
Rationale	
The full stock assessment for each species is used to create a Harvest Control Rule, and, in the case of anchovy and sardine, forms the basis of the Operational Management Plans (OMPs) which set out the rules for the management of the fishery. By implementation of the HCRs and OMPs, the biomass estimates generated from the biannual hydroacoustic surveys are automatically converted in quota recommendations. For more details on the methodology, see A2.2, particularly Figs. A2.2b and A2.2c.	
References	
Coatzee, J.C., de Moor, C.L., van der Longern, C.D., and Butterworth, D.S. (2022). A summary of the South African sardine (and anchovy) fishery. https://doi.org/10.25375/uct.22146596.v1	

A2.4	A2.4 The assessment is subject to internal or external peer review.
Outcome	<i>Pass</i>
Rationale	
Stock assessments are peer reviewed both by MARAM group members and by the Small Pelagic Scientific Working Group (SWG-PEL) (MARAM 2024).	
References	
MARAM (2024). Research overview. https://science.uct.ac.za/maram/overview	

A2.5	A2.5 The assessment is made publicly available.
Outcome	<i>Pass</i>
Rationale	
All stock assessments and associated analyses are made available on the MARAM website (e.g. MARAM 2024, but see also every technical report used in this assessment, such as de Moor 2028). Additional information is provided in the regular “Status of the South African marine fishery resources” reports (e.g. DFFE 2023). All the information used to produce this MT assessment was publicly accessible online.	
References	
de Moor, C. (2018). The 2018 Operational Management Procedure for the South African sardine and anchovy resources. http://hdl.handle.net/11427/33220	
DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023	
MARAM (2024). Research Output 2024. https://science.uct.ac.za/maram/2024	

A3 Harvest strategy

A3.1	A3.1 There is a mechanism in place by which total fishing mortality of this species is restricted.
Outcome	<i>Pass</i>
Rationale	
All three Type 1 species are subjected to restrictions on total fishery removals. Anchovy and sardine are each subject to a Total Annual Catch (TAC) quota. Sardine is also subject to an additional Total Annual Bycatch (TAB) quota. Round herring is managed under a Precautionary Upper Catch Limit (PUCL), which catch has historically always been substantially below (DFFE 2023). TACs are set in two stages: an initial TAC set late in the year and based on the results of the first hydroacoustic survey; and a final, updated TAC which reflects a revised biomass estimate calculated using catch data and the results of the second hydroacoustic survey.	
References	
DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023	

<p>A3.2</p>	<p>A3.2 Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment. Where a specific quantity of removals is recommended, the actual removals may exceed this by up to 10% ONLY if the stock status is above the limit reference point or proxy.</p>
<p>Outcome</p>	<p><i>Pass</i></p>
<p>Rationale</p> <p>Total removals of each species are generally consistently below the levels of the relevant quota (See Fig. A3.2a). The anchovy TAC has been set at 350,000t most years since 2019, with the exception of 2022 when it was 341,000t. The largest anchovy catch over that period was 285,180t, and since 2000 the average TAC utilisation rate has been 56% (DFFE 2023).</p> <p>The targeted sardine TAC has varied in recent years, between 12,250t in 2019 and 33,350t in 2022. Directed sardine catches over this period have been 2,048t – 25,940t, and have not exceeded the TAC. The sardine bycatch TAB has similarly fluctuated, between 10,750 in 2019 and 16,150t in 2022. Sardine bycatches in this period have ranged from 3,160t – 9,550t, exceeding the TAB once in 2021 by around 1.6% (DFFE 2023).</p> <p>The round herring PUCL has been set at 100,000t every year since its introduction, with the exception of 2022 when it was set at 70,000t. Annual round herring catch has never exceeded the PUCL, and in most years is around 40-60,000t (DFFE 2023).</p>	

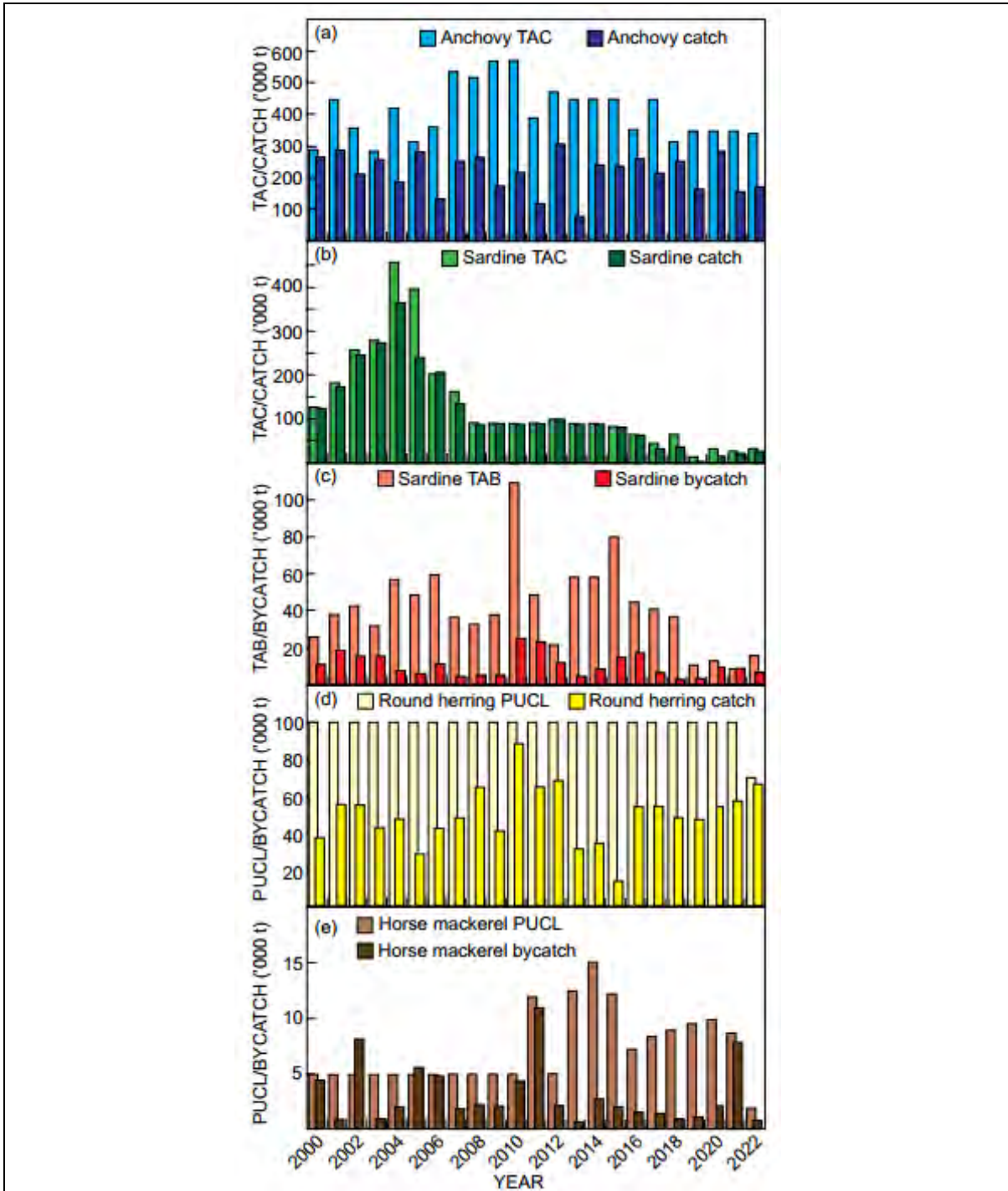


Fig. A3.2a: Quotas (TAB, TAC, PUCL) and catches of the four most prevalent species in the small pelagic fishery. Catches of sardine are recorded as directed (b) or bycatch by vessels targeting the other species (c), 2000 – 2022 (DFFE 2023)

References

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE.
https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

A3.3	A3.3 Commercial fishery removals are prohibited when the stock has been estimated to be below the limit reference point or proxy (small quotas for research or non-target catch of the species in other fisheries are permissible).
Outcome	Pass
Rationale <p>In the case of all three Type 1 stocks, a Harvest Control Rule is in place which reduces the quota when biomass falls below a specified level (defined as B_{crit}). In the case of anchovy and round herring, this reduction leads to a quota of 0t when biomass is estimated to be below 25% of the B_{crit} level. In the case of sardine, the minimum TAC is 10,000t, to maintain a catch sampling regime.</p> <p>None of the three stocks is currently estimated to be below the limit reference point level (see A4.1), and none have fallen below this level historically (see Fig. A2.2.a). There is evidence that quotas are reduced when stock biomass falls below the target reference point level, and therefore no reason to believe that the HCR would not be used to set catch at zero if biomass fell below the limit reference point level.</p>	
References <p>DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023</p>	

A4 Stock status

A4.1	A4.1 The stock is at or above the target reference point; OR IF NOT: the stock is above the limit reference point or proxy and there is evidence that a fall below the limit reference point would result in fishery closure; OR IF NOT: the stock is estimated to be below the limit reference point or proxy, but fishery removals are prohibited.
Outcome	Pass
Rationale <p>Target and limit reference points have not been explicitly established for the three Type 1 stocks; however the variables utilised by the three HCRs can be interpreted as implicit reference points.</p> <p>For all three species, the HCR currently applied implies three separate reference points (see Fig. A.2.2b for the sardine example): a level of biomass above which the quota linearly increases (with the exception of round herring, which has an absolute maximum quota of 100,000t); a level of biomass below which the quota linearly decreases until the third reference point; and a level of biomass below which the quota is set to zero (although in the case of sardine there is also an absolute minimum directed fishery quota of 10,000t). It is reasonable to conclude that the target reference point is the level of biomass below which the TAC is reduced (B_{crit} (see A2.2)), and the limit reference point is the level of biomass below which the TAC would be set to zero. For both species, the limit reference point level is 25% of the target reference point level.</p> <p>Thus, for anchovy, the biomass target reference point is 685,000t and the biomass limit reference point is 171,250t (de Moor 2021). The most recent estimate of anchovy biomass was around 1,000,000t (DFFE 2023), above both the target and limit reference point levels, and therefore</p>	

anchovy meets the requirements of this clause.

For sardine the biomass target reference point is 300,000t and the limit reference point is 75,000t (de Moor 2018). The most recent biomass estimate for sardine was 560,000t (DFFE 2023), which is also above the target and limit reference point levels. Sardine meets the requirements of this clause.

For round herring, the biomass target reference point is 750,000t and the limit reference point is 187,500t (de Moor 2024). The most recent biomass estimate for round herring was above 3,000,000t (DFFE 2023), and therefore round herring also meets the requirements of this clause.

References

de Moor, C. (2018). The 2018 Operational Management Procedure for the South African sardine and anchovy resources. <http://hdl.handle.net/11427/33220>

de Moor, C. (2021). OMP-18rev: The revised 2018 Operational Management Procedure for the South African anchovy fishery. <http://hdl.handle.net/11427/35874>

de Moor, C. (2024). Further work towards managing the South African round herring fishery. University of Cape Town. Report. <https://doi.org/10.25375/uct.25702245.v1>

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

Category B species

Category B species are assessed using a risk-based approach.

- 1.3. The risk matrix in Table B(a) shall be used when assessing a Category B species when estimates of Fishing mortality (F), Biomass (B) and reference points are available.
- 1.4. The risk matrix in Table B(b) shall be used when assessing a Category B species when no reference points are available.

B1	A3.3 Commercial fishery removals are prohibited when the stock has been estimated to be below the limit reference point or proxy (small quotas for research or non-target catch of the species in other fisheries are permissible).
Table used B(a) or B(b)	N/A
Outcome	Choose an item.
Rationale	N/A
References	

Category C species

- 1.5. All clauses must be met for a species to pass the Category C assessment.
- 1.5.1. Where a species fails this Category C clause, it should be assessed as a Category D species instead, except if there is evidence that the species is currently below the limit reference point.

C1.1	C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process OR are considered by scientific authorities to be negligible.
Outcome	Choose an item.
Rationale	N/A
References	

C1.2	C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.
Outcome	Choose an item.
Rationale	N/A
References	

Category D species

Category D species are assessed against a risk-based approach.

- 1.6. The Productivity-Susceptibility Analysis (PSA) in Table D(a) shall be used when assessing Category D species.
- 1.7. Table D(b) shall be used to calculate the overall PSA risk rating for the Category D species.
- 1.8. Should the PSA indicate a high risk, further assessment shall be completed against the requirements in Table D(C).

Productivity Susceptibility Analysis (PSA) and scores

Table D(a) provides detailed values and scores for the species productivity and susceptibility attributes and attributes, the assessor shall use Table D(a) to the PSA table. Table D(b) is used to calculate the overall PSA risk rating for the Category D species.

Species name	Horse mackerel (<i>Trachurus capensis</i>)	
Productivity attributes	Value	Score
Average age at maturity	5.1 years	2
Average maximum age	22 years	2
Fecundity	Unknown	-
Average maximum size	60cm	1
Average size at maturity	30.2cm	1
Reproductive strategy	Broadcast spawner	1
Mean Trophic Level (MTL)	3.5	3
Density dependence (to be used when scoring invertebrate species only)	n/a	
Susceptibility attributes		
Areal overlap (availability): Overlap of the fishing effort with a species concentration of the stock	>30% overlap	3
Encounterability: The position of the stock/ species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	High Overlap	3
Selectivity of gear type: Potential of the gear to retain species	Presume frequently caught	3
Post-capture mortality (PCM): The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	Retained	3
Average productivity score		1.67
Average susceptibility score		3
PSA risk rating (from Table D(b))		PASS
Compliance rating		PASS
Fishbase, Cape Horse Mackerel. https://www.fishbase.se/summary/Trachurus-capensis.html		

Species name	Chub mackerel (<i>Scomber japonicus</i>)	
Productivity attributes	Value	Score
Average age at maturity	2 years	1
Average maximum age	7.9 years	1
Fecundity	135,962	1
Average maximum size	64cm	1
Average size at maturity	22cm	1
Reproductive strategy	Broadcast spawners	1
Mean Trophic Level (MTL)	3.4	3
Density dependence (to be used when scoring invertebrate species only)	n/a	
Susceptibility attributes		
Areal overlap (availability): Overlap of the fishing effort with a species concentration of the stock	<10%	1
Encounterability: The position of the stock/ species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	High overlap	3
Selectivity of gear type: Potential of the gear to retain species	Assume frequently caught	3
Post-capture mortality (PCM): The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	Retained	3
Average productivity score		1.29
Average susceptibility score		2.5
PSA risk rating (from Table D(b))		PASS
Compliance rating		PASS
Fishbase, chub mackerel: https://fishbase.se/summary/SpeciesSummary.php?ID=117&AT=chub+mackerel		

Further assessment for Category D species

Should the PSA indicate a high risk, further assessment shall be completed against the requirements D1 and D2 – Table D(c).

D1	D1. The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.
Outcome	Choose an item.
Rationale	
References	

D2	D2. There is no substantial evidence that the fishery has a significant negative impact on the species.
Outcome	Choose an item.
Rationale	
References	



Ecosystem requirements

This section, or module, assesses the impacts that the fishery under assessment may have on key ecosystem components: ETP species, habitat and the wider ecosystem.

- 1.1. All ecosystem criteria must be met (pass) for a fishery to pass the Ecosystem Requirements.
 - 1.1.1. The sub-criteria offer a structured evidence base to demonstrate that the fishery sufficiently meets the ecosystem criteria, it is not expected that sub-criteria are assessed independently of the main criterion.

E1 Impact on Endangered, Threatened or Protected species (ETP species)

E1.1	E1.1 Information on interactions between the fishery and ETP species is collected.
	<i>In reaching a determination for E1.1, the assessor should consider if the following is in place:</i>
	E1.1.1 ETP species which may be directly affected by the fishery have been identified.
	E1.1.2 Interactions between the fishery and ETP species are recorded and reported to management organisations.
E1.1.3 Collection and analysis of ETP information is adequate to provide a reliable indication of the impact the fishery has on ETP species.	
Outcome	<i>Pass</i>
Rationale	
<p>Overall: Information on the potential impacts of the fishery on ETP species is collected through observer programmes and catch reporting. Evidence from these sources suggests that direct interactions are extremely rare.</p> <p>E1.1.1: Although there does not appear to be a formal list of all potential ETP species in South African waters, there is clear evidence that fishery managers are aware of such species. Sharks are covered by their own section in the Status of South African Marine Fishery Resources report. Seabirds are considered throughout the report, and penguins in particular are studied extensively (although the impacts of this fishery on penguins are primarily indirect, and are considered in more detail in Section E3).</p> <p>E1.1.2: Vessels participating in the fishery are required as a condition of their permit to report catches of non-target species, and interactions with ETP species. Rates of interaction are double-checked by observers, who produce monthly reports on interactions observed.</p> <p>E1.1.3: Information collected through the mechanisms described in E1.1.2 indicates that interactions between the fishery and ETP species are extremely rare. Previous Status of South African Marine Fishery Resources reports have stated this outright, listing the ETP species with which other fisheries</p>	

interact but noting that the small pelagic fishery rarely if ever interacts with ETP species (DFFE 2020). This is reinforced by the observer reports provided by the applicant, which listed only a single interaction with a “Species of Special Interest”, that being the incidental mortality of a common thresher shark (*Alopias vulpinus*). This species is categorised by the IUCN Red List as Vulnerable (IUCN 2018) and it does not appear in the CITES appendices, and thus is not an ETP species by the MarinTrust definition.

References
 Department of Forestry, Fisheries and the Environment (2020). Status of the South African Marine Fishery Resources 2020.
https://www.dffe.gov.za/sites/default/files/docs/publications/statusofsouthafrican_marinefisheryresources2020.pdf

IUCN (2018). IUCN Red List, Common Thresher.
<https://www.iucnredlist.org/species/39339/212641186>

E1.2	E1.2 The fishery has no significant negative impact on ETP species.
	<i>In reaching a determination for E1.2, the assessor should consider if the following is in place:</i>
	E1.2.1 The information collected in relation to E1.1.3 indicates that the fishery does not have a significant negative impact on ETP species.
Outcome	Pass
Rationale	
E1.2.1: As noted above, the evidence collected by observers and catch reporting suggests that direct interactions between vessels operating in the small pelagic fishery and ETP species are extremely rare.	
References	

E1.3	E1.3 There is an ETP management strategy in place for the fishery.
	<i>In reaching a determination for E1.3, the assessor should consider if the following is in place:</i>
	E1.3.1 There are measures applied to the fishery which are designed to manage the impacts of the fishery on ETP species.
	E1.3.2 The measures are considered likely to achieve the objectives of regional, national and international legislation relating to ETP species.
Outcome	Pass
Rationale	
Overall: Due to interactions between the fishery and ETP species being extremely rare, no ETP management strategy or measures are required.	
E1.3.1: No measures are required to reduce the potential impacts of the fishery on ETP species, as these are already thought to be minimal.	

E1.3.2: No measures are required to reduce the potential impacts of the fishery on ETP species, as these are already thought to be minimal.

References

E2 Impact on the habitat

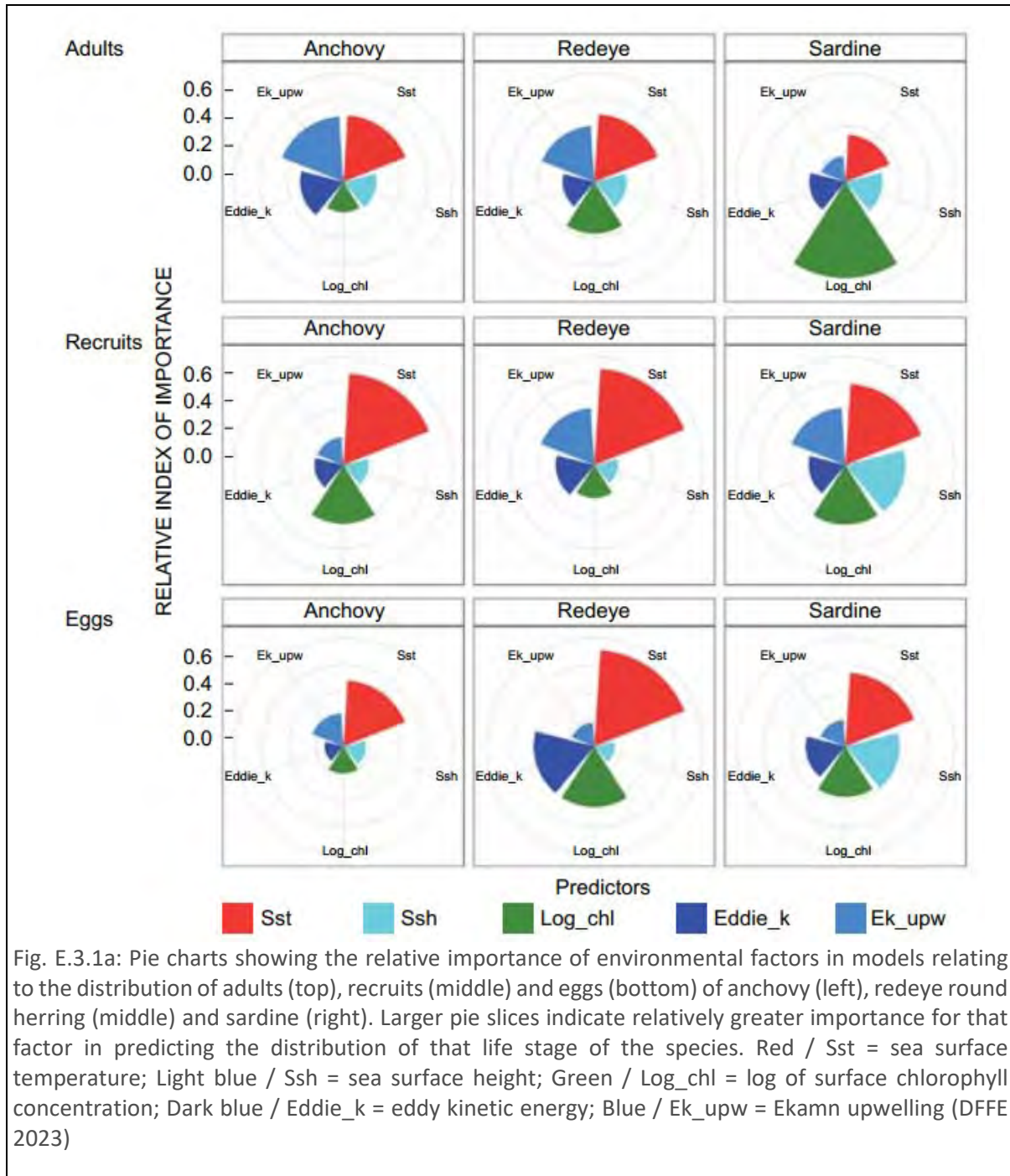
E2.1	E2.1 Information on interactions between the fishery and marine habitats is collected.
	<i>In reaching a determination for E2.1, the assessor should consider if the following is in place:</i>
	E2.1.1 Habitats which may be directly affected by the fishery have been identified, including any habitats which may be particularly vulnerable.
	E2.1.2 Information on the scale, location and intensity of fishing activity relative to habitats is collected.
	E2.1.3 Collection and analysis of habitat information is adequate to provide a reliable indication of the impact the fishery has on marine habitats.
Outcome	<i>Pass</i>
Rationale	
Overall: Due to the gears used, this pelagic fishery is inherently very unlikely to significantly impact any marine habitats.	
E2.1.1: There are no habitats likely to be directly affected by this fishery. However, in fisheries within South African jurisdiction where habitat impacts are likely – for example the hake trawl fishery – efforts have been made to understand those impacts (DFFE 2023).	
E2.1.2: Fishing activity within the small pelagic fishery is very unlikely to have any impact on marine habitats; however, the locations of vessels and fishing activity is monitored via VMS.	
E2.1.3: Due to the gears used, data do not need to be collected to indicate that the fishery does not have an impact on habitats.	
References	
DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023	

E2.2	E2.2 The fishery has no significant impact on marine habitats.
	<i>In reaching a determination for E2.2, the assessor should consider if the following is in place:</i>
	E2.2.1 The information collected in relation to E2.1.3 indicates that the fishery does not have a significant negative impact on marine habitats.
Outcome	<i>Pass</i>
Rationale	
E2.2.1: As noted above, due to the gear types used in this fishery, it is very unlikely to have a significant negative impact on marine habitats.	
References	

E2.3	E2.3 There is a habitat management strategy in place for the fishery.
	<i>In reaching a determination for E2.3, the assessor should consider if the following is in place:</i>
	E2.3.1 There are measures applied to the fishery which are designed to manage the impact of the fishery on marine habitats.
	E2.3.2 The measures are considered likely to prevent the fishery from having a significant negative impact on marine habitats.
Outcome	<i>Pass</i>
Rationale	
Overall: Due to the pelagic nature of the gears used in this fishery, no habitat management strategy is necessary.	
E2.3.1: No measures are required to reduce the potential impacts of the fishery on marine habitats, as these are likely to be zero due to the gear types used.	
E2.3.2: No measures are required to reduce the potential impacts of the fishery on marine habitats, as these are likely to be zero due to the gear types used.	
References	

E3 Impact on the ecosystem

E3.1	E3.1 Information on the potential impacts of the fishery on marine ecosystems is collected.
	<i>In reaching a determination for E3.1, the assessor should consider if the following is in place:</i>
	E3.1.1 The main elements of the marine ecosystems in the area(s) where the fishery takes place have been identified.
	E3.1.2 The role of the species caught in the fishery within the marine ecosystem is understood, either through research on this specific fishery or inferred from other fisheries.
	E3.1.3 Collection and analysis of ecosystem information is adequate to provide a reliable indication of the impact the fishery has on marine ecosystems.
Outcome	<i>Pass</i>
Rationale	
<p>Outcome: Information on the potential impacts of the fishery on the ecosystem is collected, and used to inform management plans and decisions.</p> <p>E3.1.1: The main elements of the marine ecosystem have been identified. The 2023 Status of the South African Marine Fishery Resources report provides a summary of the variables considered. This includes recognising the importance of sardine and the other target species as prey; sea surface temperature; sea surface height; chlorophyll concentration; ocean kinetic energy; and Ekman upwelling (see Fig. E3.1a). Although there are many species reliant on small pelagic fish as prey, the focus of fishery managers has been the African penguin, <i>Spheniscus demersus</i> (IUCN Endangered) (de Moor 2023).</p> <p>E3.1.2: The role of sardine and anchovy within the ecosystem, and the ways in which fishers targeting one species influence the other, is well understood. The role of round herring in this specific fishery appears to have been studied less, but its importance as a small pelagic prey species is understood. Managers recognise the importance of maintaining sufficient populations of small pelagic species to “avoid potential catastrophic ecosystem implications” (de Moor 2023).</p> <p>E3.1.3: The impact of the fishery on the marine ecosystem is primarily monitored through studies examining African penguin populations, with management objectives relating to penguins made explicit performance measures in the OMP for the sardine and anchovy fishery (see Fig. E3.1b) (de Moor 2023). A new OMP is also under development for the resource, and efforts are being made to incorporate ecosystems-based management objectives. This might include consideration of ecosystems in setting target/limit reference points, or the option to declare Exception Circumstances based on changes to the ecosystem (de Moor 2022).</p>	



Concern	Objective	Performance Statistic
Target resource	Avoid the resource declining to an unacceptably low level	B_{min} / B_0
		B_{min} / B_{lim}
	Sound resource at the end of the projection period	B_{final} / B_0
		B_{final} / B_{lim}
Socio-economics	Maximise average directed sardine and anchovy annual catch, subject to known trade-off between these fisheries	Average $C_{directed}$
	Minimise average inter-annual variation in directed sardine and anchovy catch	AAV $C_{directed}$
	Ecosystem	Avoid an unacceptable fishery-induced impact on top predators [African penguins]
Number of moulters of Robben Island penguins 5 and 10 years into projection period : current		

Fig. E.3.1b: Core decision performance statistics for the sardine & anchovy OMP-18 (de Moor 2023)

References

de Moor, C. (2022). Including ecosystem considerations in the sardine-anchovy OMP. University of Cape Town. Standard. <https://doi.org/10.25375/uct.21257589.v1>

de Moor, C. (2023). Including quantitative ecosystem objectives in Management Strategy Evaluation with examples from South Africa's small pelagic fishery. University of Cape Town. Presentation. <https://doi.org/10.25375/uct.22303762.v1>

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

IUCN (2019). African penguin. <https://www.iucnredlist.org/species/22697810/157423361>

E3.2	E3.2 There is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem.
	<i>In reaching a determination for E3.2, the assessor should consider if the following is in place:</i>
	E3.2.1 The information collected in relation to E3.1.3 indicates that the fishery does not have a significant negative impact on marine ecosystems.
Outcome	Pass
Rationale	
E3.2.1: As noted in E3.1, the main mechanism by which the potential impact of the fishery on the ecosystem is monitored is through the study of African penguin populations. As of 2023, this indicator suggests that “fishing is likely to have a relatively small impact on penguins, especially when compared with uncertainties that arise from the variable spatial distribution of the sardine population” (DFFE 2023).	
References	
DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023	

E3.3	E3.3 There is an ecosystem management strategy in place for the fishery.
	<i>In reaching a determination for E3.3, the assessor should consider if the following is in place:</i>
	E3.3.1 There are measures applied to the fishery which are designed to manage the impacts of the fishery on marine ecosystems.
	E3.3.2 The measures are considered likely to prevent the fishery from having a significant negative impact on marine ecosystems.
Outcome	<i>Pass</i>
<p>Rationale</p> <p>Overall: There are measures in place which could reasonably be considered likely to prevent the fishery from having a significant negative impact on marine ecosystems, and ongoing efforts to ensure future measures are also effective.</p> <p>E3.3.1: South Africa currently has in place 41 Marine Protected Areas (MPAs), protecting 5% of its coastal waters (see Fig. E3.3a) (SANBI 2024). Additional measures are in place specifically to protect African penguin populations, including 20km-radius areas closed to pelagic trawling around key penguin colonies (see Fig. E3.3b) (DFFE 2023).</p> <p>E3.3.2: Efforts are ongoing to ensure that measures to protect the ecosystem, and specifically penguin populations, are science-based and successful. The Consultative Advisory Forum for Marine Living Resources (CAFMLR) established by the Minister to advance the discussion was not entirely effective, producing a recommendation which was not accepted by either the fishing or conservation sector. An expert panel has recently been convened to further discuss the value of fishery closures, and in the meantime temporary closures remain in place (see E3.3b) (DFFE 2023).</p>	



Fig. E3.3a: Marine Protected Areas in South Africa (SANBI 2024)

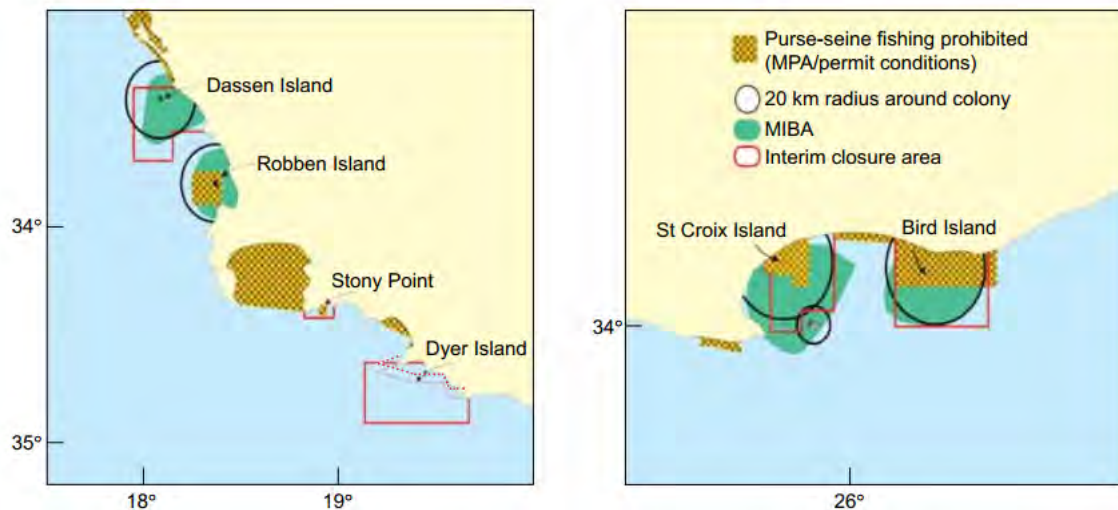


Fig. E3.3b: Locations of Marine Important Bird Areas (MIBAs; core foraging areas for African penguins), the 20-km-radius closed areas implemented during the Island Closure Experiment, and the interim closures that are presently in place. Also shown are the locations of marine protected areas (MPAs) and other restricted areas where pelagic fishing is not allowed (DFFE 2023).

References

DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. https://www.researchgate.net/publication/379783832_Status_of_the_South_African_Marine_Fishery_Resources_2023

SANBI (2024). South African National Biodiversity Institute, [marineprotectedareas.org](https://www.marineprotectedareas.org).
<https://www.marineprotectedareas.org.za/explore>

Annex 1: External Peer Review report

Insert report from Fisheries Assessment Peer Review Group. Reference this report in Tables 3 & 4



Fishery Assessment Peer Review Report

Document TEM-013 – Version 1.1

Issued August 2024 – Effective August 2024

South African Multispecies fishery

WF11

Assessment and determination summary

Fishery name	South African Multispecies fishery
MarinTrust report code	WF11
Type 1 species (common name, Latin name)	Anchovy (<i>Engraulis encrasicolus</i>) Sardine (<i>Sardinops sagax</i>) Redeye round herring (<i>Etrumeus whiteheadi</i>)
Fishery location	South Africa EEZ
Gear type(s)	Purse seine, pelagic trawl
Management authority (country/state)	Department of Environment, Forestry and Fisheries (DFFE), South Africa
Certification Body recommendation	Approved
FAPRG reviewer recommendation	Agree with CB determination

Summary of peer review outcomes

<p>Summary</p> <p><i>Provide any information about the fishery that the reviewers feel is significant to their decision. This summary is used by the Certification Body in the Fishery Assessment Report.</i></p> <p>The assessment report provides clear and concise justification for each section and clause, and is referenced with the most recent evidence. Minor comments made. M2.3.1: Is it worth considering a note to on site auditor to enquire (again) on the availability of statistical or similar reports on fishery compliance. Horse mackerel: It it worth a short note to explain the use of Cat D rather than C (no disagreement from the Exernal Peer Reviewer of the Cat D classification). CAB response: A note has been added for the on-site auditor to enquire about inspection/compliance statistical reports. An brief explanation has been added to clarify why horse mackerel was assessed under Category D.</p>
<p>General comments on the draft report provided to the peer reviewer</p>

Peer reviewers should review the fishery assessment report with the primary objective of answering the key questions listed in the table below. When the situation is more complicated, reviewers may

answer “See Notes” instead.

1. Has the fishery assessment been fully completed, using the recognised MarinTrust fishery assessment methodology and associated guidance?	Yes
2. Does the Species Categorisation section of the report reflect the best current understanding of the catch composition of the fishery?	Yes
3. Are the scores in the following sections accurate (i.e. do the scores reflect the evidence provided)?	Yes
Section M - Management	Yes
Category A Species	Yes
Category B Species	n/a
Category C Species	Yes
Category D Species	Yes
Section E – Ecosystem Impacts	Yes

Detailed Peer Review Justification

Peer reviewers should provide support for their answers in the boxes provided, by referring to specific scoring issues and any relevant documentation as appropriate.

Detailed justifications are only required where answers given are one of the ‘No’ options. In other (Yes) cases, either confirm ‘scoring agreed’ or identify any places where weak rationales could be strengthened (without any implications for the scores).

Boxes may be extended if more space is required.

1. Is the scoring of the fishery consistent with the MarinTrust requirements, and clearly based on the evidence presented in the assessment report?	Yes
The scoring is consistent with MarinTrust requirement and clearly based on the evidence provided which is also the most recent available.	
Certification Body response	
n/a	

2. Has the fishery assessment been fully completed, using the recognised MarinTrust fishery assessment methodology and associated guidance?	Yes
Report content confirms consistency with methodology and guidance.	
Certification Body response	

n/a

3. Does the species categorisation section of the report reflect the best current understanding of the catch composition of the fishery? **Yes**

Three Type 1 species (target) are identified anchovy (*Engraulis encrasicolus*), sardine (*Sardinops sagax*), and redeye round herring (*Etrumeus whiteheadi*) and Two Type 2 species; horse mackerel (*Trachurus capensis*) and chub mackerel (*Scomber japonicus*). The assessor uses a most recent government report on the Status of the South African Marine Fishery Resources (DFFE 2023), published in April 2024, which provides full catch data by species for the mixed pelagic fishery covering the period 2000 – 2022 to base the species categorisation upon. Also, provided, that whilst, historically, an experimental mesopelagic fishery has sometimes meant significant quantities of lanternfish and lightfish in the overall catch, this component of the fishery has not been conducted in recent years. A summary of catch composition for years 2020-2022 is provided an averaged from which the categorisation is based upon. References are provided. The three Type 1 targets makeup >95% of the catch, remaining non targets species make up <5%.

Certification Body response

n/a

3a. Are the “Category A Species” scores clearly justified? **Yes**

Anchovy and sardine are identified as Category A species and are subject to regular stock assessment and are managed relative to reference points and an annual quota. The assessor identifies that quantitative stock assessment for redeye round herring have not been successful historically; however in 2022 MARAM published an assessment which utilised data from 1987 – 2021 (de Moor 2023). This resulted in the development of a Harvest Control Rule and as such, round herring was also assessed as a Category A species. The Peer Reviewer considered this an appropriate approach. Category A Species selection is clearly justified.

Category A species scores for each species are clearly justified and well evidenced with working reference links to the most recent data on catch composition, length- frequency distribution of catches, sex, gonad maturity, condition, parasite infection rates, survey approach and collected information (assessed biannually using hydroacoustic surveys and research into sub-species, small pelagic species distribution).

Stock assessments have been carried out within the last 3-5 years, noting that anchovy is greater than 3 years since the last assessment but that there is evidence of ongoing analysis to support current state and in each case, HCR’s are applied to biomass estimates for each species to determine appropriate fishery removals and managed via an Operational Management Plan (OMP) for anchovy and sardine. Recent 2024 Marine Resource and Assessment Management Group (MARAM) published information is cited. Proxy target and limit reference points are identified and the most recent assessments

<p>place stocks above targets for all three species.</p> <p>For round herring, an OMP is not identified, however there is recent evidence of management progress in the work of the Small Pelagic Scientific Working Group (SWG-PEL) in selecting a Harvest Control Rule (HCR) to recommend the annual Precautionary Upper Catch Limit (PUCL) for South African round herring.</p> <p>Regarding the TAB for sardine: The sardine bycatch TAB has similarly fluctuated, between 10,750 in 2019 and 16,150t in 2022. Sardine bycatches in this period have ranged from 3,160t – 9,550t, exceeding the TAB once in 2021 by around 1.6% (DFFE 2023). The peer reviewer assumes the majority of this is the horse mackerel bycatch in fig. A3.2a.</p>
Certification Body response
n/a

3b. Are the “Category B Species” scores clearly justified?	n/a
There were no Cat B species identified. Peer Reviewer agrees with the analysis.	
Certification Body response	
n/a	

3c. Are the “Category C Species” scores clearly justified?	n/a
There were no Cat C species identified. Peer Reviewer agrees with the analysis.	
<p>The Peer Reviewer notes that DFFE (2023). Status of the South African marine fishery resources 2023. Cape Town: DFFE. (p27-31) refers to the horse mackerel OMP incorporated a harvest control rule that adjusted the annual TAC each year (either upwards or downwards) depending on the level of current resource abundance indices relative to averages over a fixed past period. The stock status and fishing pressure of the Cape Horse mackerel stock is described as optimal. There are TAB’s established In other fisheries (referring to note on bycatch TAB for this mixed pelagic fishery).</p> <p>Did the assessor initially consider the species under Cat C and then on review, undertook to categorise as D. A separate internal note to describe this may be helpful to collect to consider if further MT guidance on supporting a decision to use Cat C or D.</p>	
Certification Body response	
Yes, Category C was considered. However, the horse mackerel OMP does not appear to have been officially in place since 2016	

(<https://academic.oup.com/icesjms/article/79/6/1843/6645268>) and the available documentation implies there are no formal reference points in place. It is possible that further investigation would reveal sufficient information to conduct a Category C assessment, but based on the initial review - and the treatment of horse mackerel as a Cat C species in previous assessments - Category D was chosen. A note has been added to the assessment to clarify this.

3d. Are the “Category D Species” scores clearly justified?	Yes
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Horse mackerel (*Trachurus capensis*) and Chub mackerel (*Scomber japonicus*) were identified as Cat D species.

The peer reviewer agrees with the PSA table outcome based on Cape Horse Mackerel Fishbase data.

There is also some references to life-history information provided in the Status of the South African marine fishery resources 2023 although this does not affect the risk rating scores assigned. ‘Cape Town: DFFE for the Cape horse mackerel stock. ‘Cape horse mackerel generally reach 40–50 cm in length and become sexually mature at about three years of age when they are roughly 20 cm long’.

Ariel overlap is identified as 10% in the Susceptibility section. Was the ariel overlap map from the report used to make the determination? Could it be higher?

At any rate, a medium risk score (2) does not affect the overall risk outcome. Also the report identifies the Cunene horse mackerel *T. trecae* and African horse mackerel *T. delagoa* to the north and east, respectively. Are these relevant to the assessment?

To note the reference to Fishbase for chub mackerel is absent but the peer reviewer assumes the analysis is based on data provided at:
<https://fishbase.se/summary/SpeciesSummary.php?ID=117&AT=chub+mackerel>

Certification Body response

Areal overlap was estimated as >30% for horse mackerel. Chub mackerel (rated <10%) is present throughout the Pacific and so the South African population represents a small proportion of the total species distribution. Potentially there is a question here for MT regarding whether the fishery coverage should be estimated relative to the individual stock or the species as a whole.

T. trecae and *T. delagoa* are not identified as present in the catch as per the catch composition data, and therefore were not assessed. However, a note has been added for the on-site assessor to investigate whether this is accurate.

A reference to the chub mackerel fishbase page has been added to the report.

Are the scores in “Section E – Ecosystem Impacts” clearly justified?	Yes
<p>Evidence provided, clearly justifies the pass scores and references are provided. ETP species are identified (range from sharks, seabirds, most noticeably penguins); fishers are required to report; there is routine independent observation, interactions appear rare, no evidence of significant negative impacts on ETP's, habitat impact risk very low due to pelagic gears, there are MPA's and components of the ecosystem and their effects and the role of the small pelagic species are monitored for potential impacts, with ongoing management responses, such as the 20km radius closed areas around penguin colonies.</p>	
Certification Body response	
n/a	

Optional: General peer reviewer comments on the draft report	
<p>Overall, concise and thorough report with most recent evidence cited. Regarding M clauses. The Assessor states that (M2.3.1), statistical information on the level of compliance in the fishery could not be found online and on request not made available. Was the absence due to none being made available or that the Applicant did not respond to the request? There is good evidence of compliance, cooperation and no negative evidence of IUU discovered but, perhaps a follow up question to the Applicant can be made during the factory audit??</p>	
Certification Body response	
<p>The applicant did respond to the request, which covered several other points, but did not provide an inspection/compliance report as part of the response. A note has been added for the on-site assessor to follow up during the factory audit.</p>	