IN THE HIGH COURT OF SOUTH AFRICA
GAUTENG DIVISION, PRETORIA

Case No: 2024-029857

In the matter between:

BIRDLIFE SOUTH AFRICA	First Applicant
SOUTH AFRICAN FOUNDATION FOR THE CONSERVATION OF COASTAL BIRDS	Second Applicant
and	
THE MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT	First Respondent
THE DEPUTY DIRECTOR-GENERAL: FISHERIES MANAGEMENT, DEPARTMENT OF FORESTRY, FISHERIES AND THE ENVIRONMENT	Second Respondent
THE DEPUTY DIRECTOR-GENERAL: OCEANS AND COASTS, DEPARTMENT OF FORESTRY, FISHERIES AND THE ENVIRONMENT	Third Respondent
THE SOUTH AFRICAN PELAGIC FISHING INDUSTRY ASSOCIATION	Fourth Respondent
EASTERN CAPE PELAGIC ASSOCIATION	Fifth Respondent

SUPPLEMENTARY FOUNDING AFFIDAVIT

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I, the undersigned,

ALISTAIR MC INTYRE MC INNES

do hereby make oath and state that:

1. I am an adult marine ecologist and the Seabird Conservation Programme Manager at BirdLife South Africa, the first applicant. I am the deponent to the founding affidavit from which my particulars and capacity appear.

2. I depose to this affidavit in order to supplement the applicants' founding affidavit under the above case number, as provided for in Rule 53 of the Uniform Rules. A supporting affidavit deposed to by Dr Katrin Ludynia on behalf of the Second Applicant will be filed in parallel.

3. The facts contained herein are within my personal knowledge, unless otherwise stated or as appears from the context, and are to the best of my belief both true and correct.

4. Insofar as I make legal submissions, I rely on the advice of the applicants' legal representatives, which advice I accept to be true and correct.

5. In what follows, I use the same abbreviations as are used in the founding affidavit.

INTRODUCTION

6. The purpose of this affidavit is to supplement the founding affidavit in this application to which I deposed on 18 March 2024 (**the founding affidavit**) given the information made available to the applicants through the documentation filed by the Minister on 25 April 2024 (**the purported record**) and the supplementary items filed by the Minister on 14 June 2024 (**the supplementary record**) (collectively, **the record**).

7. As I have stated in the founding affidavit, this application is brought on an expedited basis to secure relief designed to prevent the imminent extinction of Africa's only penguin: *Spheniscus demersus* or the African Penguin, a species globally recognised as "Endangered".

8. As indicated in the founding affidavit, the status of the African Penguin is currently being assessed by BirdLife International, on behalf of the IUCN, for purposes of uplisting this species' conservation status from "Endangered" to "Critically Endangered" – one step away from extinction. Since the filing of the founding affidavit, the BirdLife International Red List Team has considered the proposed uplisting and issued its recommendation that the IUCN does in fact uplist the African Penguin to Critically Endangered – a decision scheduled to be made by the IUCN in October 2024. I attach a record of BirdLife International's recommendation and associated comments as "**SFA1**".

   8.1 As is made clear from the "Justification" regarding the continuing decline in mature individuals on the formal submission, "*[i]n the*

absence of any evidence of mitigation for the drivers of these declines they are projected to continue at an extremely rapid rate". Moreover, the submission makes clear that access to prey and foraging grounds remains a driver of such declines, which are currently estimated to be 8% per annum in respect of the global population.

8.2 If these rates continue unchecked, the anticipated date for the African Penguin becoming extinct in the wild (i.e. 2035) provides only a narrow window of opportunity for ensuring all possible conservation measures are implemented.

8.3 Accordingly, there is yet further support for the necessity of urgently addressing all impacts on the ability of African Penguins to access prey – including reducing competition for sardine and anchovy with the commercial small-pelagic purse seine industry (**Industry**), which is the conservation measure at the heart of this case.

9. In the founding affidavit, I have highlighted that the importance of availability of sardine and anchovy to African Penguins has been recognised by the South African State since as early as 2007 in the Policy on the Management of Seals, Seabirds and Shorebirds,[1] the initiation of the Island Closure Experiment (**ICE**) by the State in 2008[2] and the publication of early results of the ICE, in 2018, which confirmed that closure of fishing grounds around key breeding colonies had a positive impact on improving chick survival rates.[3] I also set out Industry's

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1 Founding Affidavit, paras 38-39.

2 Founding Affidavit, paras 57-59.

3 Founding Affidavit, para 59.3

refusal to accept the conservation benefits of fishing closures and the Minister's corresponding failure to delineate appropriate fishing closures.

10. The Panel was constituted with the express purpose of resolving this stalemate. It was to do so in two respects:

    10.1 first, by establishing whether island closures are a valid conservation measure; and

    10.2 second, if it concluded that island closures are a valid conservation measure, by recommending an appropriate trade-off mechanism for identifying which of the various potential closure delineations around each breeding colony was most appropriate and, on the strength of that, providing a proposed delineation.

11. The former aspect of the Panel's mandate was essentially the premise for the latter: once the Panel determined that island closures are a valid conservation measure, the key substantive issue for purposes of the Minister's decision-making related to how those closures should be determined.

12. The record confirms that the Minister accepted the Panel's finding that island closures are an appropriate conservation measure, but then completely ignored its recommended trade-off mechanism. In other words, the Minister accepted the premise, but then ignored the conclusion. This disregards the very purpose for which the Panel was appointed.

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13. Neither the purported record, nor the extensive documentation produced as part of the supplementary record, contain the Minister's independent reasons – or any other explanation – for why, notwithstanding the time, energy and expense of convening the Panel for purposes of finally taking action, the Minister accepted the validity of island closures as a meaningful conservation intervention, but fell back on what has become the default of seeking stakeholder "agreement" rather than applying the Panel's recommended trade-off mechanism. The absence of any such reasons in itself renders the impugned decision irrational.

14. The sole record of any analysis informing the Minister's decision is the memorandum authored by Dr Ashley Naidoo dated on or around July 2023 (**the Naidoo Memo**). This is the document that was ultimately presented to the Minister for approval, and which records her decision. Like the rest of the record, the Naidoo Memo shows that the Minister had no reason for ignoring the Panel's recommended trade-off mechanism. There is no suggestion that the Panel had erred in that respect or that there was some other reason why the trade-off mechanism could not be applied.

15. To the contrary, the Naidoo Memo goes so far as to suggest that the trade-off mechanism should be used for purposes of proposing fishing limitations, but only for the sake of trying to reach consensus on fishing closures. In the event of no consensus being reached, the Naidoo Memo recommended that the Interim Closures be extended for 10 years. This in itself is irrational. Instead of using the trade-off mechanism to resolve the impasse when consensus could not be achieved – which was the very reason the Panel had been tasked with recommending a trade-off mechanism – the Naidoo Memo sought to use it

merely to further the negotiation process. In other words, the Naidoo Memo sought to use the trade-off mechanism as a tool for driving consensus when it was sought and provided as a tool for resolving a lack of consensus.

16. In the recommendation to the Minister, which ultimately informed her decision, the Naidoo Memo placed no reliance on the trade-off mechanism at all. Instead, it recommended that, absent agreement on the fishing closures between Industry and the conservation sector, the Interim Closures should be extended until the end of the 2033 fishing season.

17. The record therefore shows that the Minister had no qualms about the trade-off mechanism. She simply subordinated it to her and the DFFE's ingrained preferences for consensus and for placating Industry interests above protecting the African Penguin survival and well-being.

18. The record also shows that neither the DFFE nor the Minister considered the appropriateness of extending the Interim Closures in the event of no agreement being reached between Industry and the conservation sector. They gave absolutely no consideration to the fact that the Interim Closures were adopted purely as an interim stop-gap measure, without sufficient scientific input and that they were recognised by the Deputy Director General: Oceans & Coasts (**DDG: O&C**) himself as not being fit for conservation purposes. Nor did they give any explanation for why, absent agreement between Industry and the conservation sector, Interim Closures determined through an unscientific process should take precedence over closures determined through a scientific trade-off mechanism.

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19. In effect, the Minister disregarded the recommendations of a panel of international experts regarding the appropriate approach for delineating fishing closures, despite the Panel having been constituted by the Minister for that express purpose, and opted rather to take a decision which would foreseeably have the result of entrenching, for the next decade, fishing closures which were determined purely as a temporary stop-gap measure and without any such scientific input. Moreover, she did so without any apparent reason. All this in circumstances where the Minister has a constitutional obligation to implement urgent measures, including through the imposition of appropriate fishing closures, to prevent the impending extinction of the African Penguin.

20. In the circumstances, to the extent the record reflects any analysis in support of the Minister's decision, it confirms that the decision was both irrational and unlawful.

21. Absent this Honourable Court's intervention, the Interim Closures will remain in place until 31 December 2033. As explained in the founding affidavit, these Interim Closures are grossly inappropriate and unable to meet their objective of reducing resource competition between African Penguins and Industry, and thereby improving African Penguins' prey availability. It is clear that their utility is entirely questionable given the narrow window of opportunity to arrest declines and prevent extinction by 2035.

22. Accordingly, I submit that the relief sought in the amended Notice of Motion should be granted on the grounds of review expressed in the founding affidavit, by which the applicants stand, and as amplified in paragraphs 71 to 90 below.

23. In what follows, I:

23.1 outline the contents of the record;

23.2 describe the key documentation which provides what little insight is afforded into the Minister's decision-making process;

23.3 explain how the record serves to confirm the grounds of review raised in the founding affidavit, namely that the Minister's decision was irrational and unlawful; and

23.4 address the late filing of the record, the referral of this application to case-management and the resulting procedural timetable.

THE CONTENTS OF THE RECORD

24. The record consists of:

24.1 a series of 18 "workflows" – being particular actions or steps occurring at different stages of the decision-making process, documented on the DFFE's document management system – covering the period from 21 November 2019 to 26 July 2023;

24.2 the final press release issued on 4 August 2023, announcing the impugned decision (attached to the founding affidavit as **AM15**);

24.3 an agenda and draft agenda for the press conference of 4 August 2023;

24.4 a large number of documents that appear either to have been produced as part of the Panel proceedings or submitted for its consideration; and

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24.5 a handful of additional letters which have varying degrees of possible relevance to the Minister's decision-making.

25. It is clear from the contents of the record that the Minister neither reviewed nor accessed the extensive scientific material placed before the Panel. Accordingly, the documentation which provides the clearest indication of what could, in fact, have been taken into account by the Minister is the set of "workflows".

26. It is helpful to view the record with regard to the pattern of communication reflected in the "workflows".

26.1 "Workflows" are identified by a reference number which applies also to the relevant supporting documentation. In most cases, the record has provided a coversheet marked "Workflow Details" which appears to be printed from the DFFE's document management system and which can be matched to a set of documents including a submission or memorandum setting out the context and purpose for the workflow as a whole.

26.2 The Workflow Details indicate the manner in which a particular action / step in the decision-making process has flowed through the various DFFE channels to reach the Minister and includes certain notes and exchanges of information between various branch officials involved in resolving an action.

26.3 Where a particular workflow requires Ministerial acknowledgment or approval, the supporting submission contains a final page seeking

specific acknowledgements or approvals which are then accepted, amended or rejected by the Minister under cover of her signature. It appears that the Minister is required to mark her approval / noting of recommendations, any amendments or queries on these approval pages and to sign off accordingly. In some cases, handwritten notes appear with questions or comments – and these are usually confirmed as being those of the Minister in the notes included in the Workflow Details.

27. Only certain of the workflows provide insight into the Minister's decision-making process – and none reflect clear, independent reasons for the impugned decision. However, the following workflows confirm the pattern of conduct described in the founding affidavit and are relevant to grounds of review.

27.1 The earliest workflow in the record covers the period 21 November 2019 to 4 January 2021 and addresses the 1 November 2019 letter from the conservation sector which I attached as "**AM18**" to the founding affidavit (**the Conservation Letter Workflow**). The letter in fact received a response on 18 December 2020, of which I attach a copy marked **"SFA2"**. This workflow confirms that the Minister was alive to the issues since at least 2019.

27.2 There are a set of Workflows dealing with the ETT and CAF processes which confirm the Minister's clear awareness of the lack of agreement between stakeholders (as well as within the DFFE) and her preference, nonetheless, for delaying conservation management interventions in favour of "consensus". These include a workflow addressing next steps

arising from the Synthesis Report of the ETT including the ETT's island closure recommendations (**the Synthesis Report Workflow**), as well as a series of workflows dealing with the outcomes of the CAF (**CAF Gazette Workflow**), the Minister's decision not to publish the CAF report, and the African Penguin Biodiversity Management Plan (**AP-BMP**) (which to date has not been finalised).

27.3 Additional workflows reflect the Minister's clear awareness of the purpose, objects and constitution of the Panel including workflows addressing its establishment (**the Panel Establishment Workflow**) and a progress report (**the Panel Progress Workflow**).

27.4 However, only the final workflow, covering the period 18 July 2023 to 26 July 2023, addresses the outcome of the Panel process and provides any indication of the Minister's consideration of the Panel's Report and recommendations (**the Panel Report Workflow**). Significantly, it contains no reasons for the Minister's decision. It does, however, include a statement regarding the financial implications of approvals at paragraph 3, indicating that "*[r]emuneration and reimbursement costs for the Panel, including local travel and associated costs to major airports and meals during travel are estimated at between R1 500 000 and R 1 800 000*". (No final accounting is included in the record).

27.4.1 I infer that this is the cost per panel member. I do so having regard to: the composition of the Panel (which is made of six accomplished academics from around the world); the extent

of their likely travel costs; the fact the Panel members are predominantly from the United States of America, the United Kingdom and Australia, the fact that (according to the Report) they each participated in at least eight days of meetings; the fact that (according to the Minister's media statement announcing the decision) the Panel considered over 200 documents; and the fact that all members, to my understanding, flew business class and were accommodated in hotels during their visits to South Africa in May and June 2023.

27.4.2 It is concerning that these sums were incurred in relation to a process which has resulted in the perpetuation of the same arbitrary and unscientific fishing closures as those which preceded the Panel's appointment – and certainly raises the spectre of whether such expenditure was warranted. I call upon the Minister, in her answering affidavit, to disclose the full cost incurred per Panel member, inclusive of both their professional fees and all disbursements.

28. In the remainder of this affidavit, I focus on the sole set of documents shedding any light on the manner in which the Minister came to take the impugned decision i.e. the Panel Report Workflow as well as those documents contained in workflows relating to correspondence from the conservation sector, the ETT and CAF process and AP-BMP insofar as they shed light on the lawfulness of the Minister's approach to the issues of preventing African Penguin declines,

conserving the species, implementing meaningful conservation interventions and acting on the Panel's recommendations.

THE KEY DOCUMENTS

29. The Panel Report Workflow includes:

29.1 the relevant Workflow Details, which I attach as "**SFA3**";

29.2 the unsigned Naidoo Memo, which I attach as "**SFA4**";

29.3 the annexures to the Naidoo Memo, namely:

29.3.1 the executive summary to the Panel's report, which I attach as "**SFA5**";

29.3.2 the Panel's report (already attached to the founding affidavit as "**AM14**");

29.3.3 a letter from the Minister of Finance to the Minister confirming the remuneration rates for the Panel members, which I attach as "**SFA6**";

29.3.4 a National Treasury document detailing 2022 remuneration levels and service benefit packages for office-bearers of certain statutory and other institutions, which I attach as "**SFA7**"; and

29.3.5 a map of the Interim Closures, which I attach as "**SFA8**"; and

29.4 the Naidoo Memo recommended by the Director-General on 21 July 2023 and approved by the Minister on 23 July 2023. I attach the approved version of the Naidoo Memo as "**SFA9**" and refer to this version of the Naidoo Memo in what is stated below.

The Workflow Details suggest limited consideration of the Panel recommendations

30. The Workflow Details describe the sequence of events which presumably followed the issuing of the Panel's first draft report on 6 July 2023 and Dr Naidoo's preparation of the Naidoo Memo. The following steps emerge from the DFFE Workflow Coversheet:

30.1 On 18 July 2023, Dr Naidoo forwarded the Naidoo Memo to the "DDG" (presumably the DDG: O&C, Dr Lisolomzi Fikizolo, although this is unclear).

30.2 On 20 July 2023, the Chief Directorate: Budget and FM, acknowledged the Panel report and confirmed that funds were available for any outstanding remuneration of Panel members subject to compliance with National Treasury approval and directives.

30.3 On 21 July 2023 at 8h20, the CFO supported the submission.

30.4 On 21 July 2023 at 8h43, the submission was forwarded to the DDG: O&C, Dr Fikizolo.

30.5 Eight minutes later, on 21 July 2023 at 08h51, Dr Fikizolo recommended the submission and forwarded it to the Director-General.

30.6 On 21 July 2023 at 09h12, Judith Venter, in the office of the Director-General, formally brought the submission to the Director-General's attention for her consideration and recommendation.

30.7 Less than four hours later, on 21 July 2023 at 13h06, the Director-General noted the submission as "*Recommended*".

30.8 On 21 July 2023 at 13h32 the Workflow Coversheet indicates "*Document(s) printed*" for the Director-General – and it is presumably after this, that the Director-General appended her signature and the Naidoo Memo, together with annexures, made its way to the Minister's desk.

30.9 Finally, as appears from a handwritten note on the approval page of the Naidoo Memo, the Minister appears to have had a discussion with Dr Naidoo on 22 July 2023 and to have approved the submission (with relatively minor comments) on 23 July 2023.

31. This process broadly corresponds with the explanation of the decision-making process articulated by Dr Naidoo in his e-mail of 22 September 2023 ("**AM57**"), albeit that it was somewhat less rigorous than Dr Naidoo made out. What emerges is the following:

31.1 Dr Naidoo prepared the initial submission to the Minister, as he had said he did.

31.2 The submission then went to the DDG:O&C, who recommended it within eight minutes of receiving it, from where it went to the Director-General, who recommended it less than four hours after receiving it.

31.3 The earliest the Minister could have received the submission, with supporting documents (including the Panel report), was relatively late in the day on 21 July 2023, and she rendered her approval just two days later, on 23 July 2023.

31.4 There is no record of any internal deliberations by either the Minister or the DFFE concerning the Panel's report and recommendations.

32. The inescapable conclusion is that the submission was given little to no consideration by the DDG: O&C or the Director-General, before they recommended its approval, while the Minister had less than two days within which to consider the Panel's 72-page report; to apply her mind to its recommendations; to consider the recommendations of DFFE: O&C communicated in the Naidoo Memo; and to take a decision incorporating all relevant considerations. This presents an extremely tight turnaround without sufficient time properly to understand and interrogate the Panel's report and recommendations.

33. This is particularly concerning given what later emerged regarding the DFFE's failure to complete its own analysis of the Panel's recommendations prior to submission of the Naidoo Memo to the Minister. This was confirmed by Dr Naidoo at the meeting the conservation sector held with him on 24 October 2023 (as set out in paragraph 148 of the founding affidavit) as well as in his e-mail

dated 15 November 2023 which stated that "*the Fisheries Sector Reps or ourselves at DFFE were not on the same work schedule as the Conservations Reps in assessing the use of the Panel Report – trade-off method*". I have addressed the context of this correspondence in paragraph 157 of the founding affidavit, and it is attached thereto as "**AM71**".

34. Therefore, when the Minister signed the approval form on 23 July 2023, neither she nor her department had conducted a sufficiently thorough or accurate analysis to enable her to take a rational and lawful decision.

35. This is illustrated by the contents of the Naidoo Memo which contains a number of key errors and omissions which in turn led to material errors made by the Minister. These patent errors and omissions inform the irrationality of those aspects of her decision which allow for the continuation of the Interim Closures subject to "agreement" to alternative closure delineations by stakeholders; omit the central recommendation of the trade-off mechanism; and fail to recognise the importance of the mIBA-ARS method for determining important African Penguin foraging areas.

36. Had the DDG:O&C, the Director-General and/or the Minister properly considered the documents submitted with the Naidoo Memo, they would have immediately identified the glaring incongruency between the Panel's recommendations and those in the Naidoo Memo. That they did not do so suggests that they did not consider the Panel report properly – if at all.

The Naidoo Memo omitted key Panel outputs and objectives

37. The Naidoo Memo sets out its objectives in paragraph 1. These are repeated, almost verbatim, as "recommendations" in paragraph 5 and in the paragraphs included on the sign-off page signed and annotated by the Minister. These are:

> "*1.1 Note the Report of the International Review Panel of Experts to advise on the proposed fishing-area closures adjacent to South Africa's African Penguin breeding colonies.*
>
> *1.2 Grant approval for the policy decisions following the Report from the Panel.*
>
> > *1.2.1. That the limitation of small pelagic fishing adjacent to penguin colonies will henceforth be used by the Department as an appropriate intervention in the conservation and management of the African Penguin.*
> >
> > *1.2.2. Furthermore, that fishing limitations around selected penguin colonies are established for the following penguin colonies: Dassen Island, Robben Island, Stoney* [sic] *Point, Dyer Island, St Croix Island and Bird Island. The fishing limitations are to be implemented for a minimum of ten (10) years with a review after six (6) years of implementation and data collection. The transition to implementing fishing limitations is described in Paragraph 2.10. However, in the absence of penguin colony specific agreements across the fishery and conservation stakeholders on limiting small pelagic fishing, consideration must be given on the current interim limitation or closures that must continue from 1 August 2023, as the interim limitations are due to end on the 31st of July 2023.*
>
> *1.3. Approve the implementation of the recommendations for future science from the International Review Panel. These will be implemented in a phased approach depending on funding and resources available, of which both the*

industry and the civil society organisations will be encouraged to contribute to the program.

1.4 Approve that Branches Fisheries Management and Oceans and Coasts develop a communications and stakeholder engagement plan to report at least annually to stakeholders on the implementation of these fishing limitations and other measures implemented as actions in the African Penguin Biodiversity Management Plan.

1.5 Approve that the Panel work is now concluded and that the Panel will be remunerated as per the National Treasury Approved rates at the B1 daily rate scale. Each Panel member will be remunerated for 12 weeks of time and the Chair for 14 weeks. Any actual expenses incurred will be reimbursed in addition to this.

1.6 Note that the Chair and Panel members are available on a date to be determined to present their Report to the Minister and local stakeholders via an online meeting.

1.7 Approve that the Report of the Expert Panel can be distributed to all stakeholders and be made publicly available." (emphasis added)

38. Only paragraph 1.2 and the corresponding approval sought in paragraph 5.2 relate to the purpose for which the Panel was convened. However, they do not cover the totality of the core issues with which the Panel were tasked, omitting the fundamental objectives. I have detailed these objectives at paragraphs 102 to 105 of the founding affidavit with reference to the gazetted Terms of Reference, attached thereto as "**AM13**".

39. Most pertinently, paragraphs 1.2 and 5.2 of the Naidoo Memo entirely ignore the fact that the Terms of Reference required the Panel to recommend:

39.1 a trade-off mechanism as a basis for setting fishing limitations and mapping (see Terms of Reference, paras 2(c) and 5(d));

39.2 delineation of fishery no-take areas around the breeding colonies (see Terms of Reference, paras 2(c)(a) and 5(d)); and

39.3 the appropriate basis for determining benefits to African Penguins and areas of important foraging habitat (see Terms of Reference, para 5(c)).

40. This overlooks half the purpose for which the Panel was appointed. The Terms of Reference essentially task the Panel with two broad functions.

40.1 The Panel's first function was to establish whether island closures are an appropriate conservation measure.

40.2 The Panel's second function, which was contingent on it concluding that island closures are an appropriate conservation measure, was to recommend an appropriate trade-off mechanism for identifying which of the various potential closure delineations around each breeding colony was most appropriate in terms of maximising biological benefits to African Penguins, ensuring that closures in fact reduced competition between African Penguins and Industry, ensuring that closures in fact benefited African Penguins by covering important foraging areas, and ensuring that this was done at least cost to Industry.

41. The first function was quite clearly a precursor to the second; once the Panel had determined that island closures were a valid conservation measure, the key

substantive issue for purposes of Ministerial decision-making related to how such closures should be determined.

42. In essence, whereas the first function was to establish the premise, the second was to reach a conclusion. The Panel duly fulfilled both functions. Having established the premise that island closures are an appropriate conservation measure, it concluded by recommending a trade-off mechanism.

43. In alarming contrast, the Naidoo Memo and, in consequence the Minister's decision, both accept the premise but omit the conclusion. This is inherently illogical. Having constituted the Panel with the express purpose of seeking its recommendation on a trade-off mechanism if it found island closures to be an appropriate closure mechanism, it is irrational and unreasonable to accept the Panel's finding on closures being appropriate but then completely ignore its recommendation on the trade-off mechanism to implement them.

44. Seen in this light, the Minister's decision not only fails to address a core element of the purpose and object of the Panel's appointment, but it bears no relation to it. It is the epitome of an irrational decision.

45. That the Minister was fully aware of the purpose of the Panel, is clear from the Naidoo Memo, which states in paragraph 2.3 that:

> "*The CAFMLR fishing limitation recommendations were not widely accepted by either sector, with both sectors requesting that the Minister appoint an International Panel that would review:*

a) *quantitative scientific analyses of the Island Closure Experiment (ICE) and subsequent publications to evaluate whether the scientific evidence from the ICE indicates that limiting small pelagic fishing around colonies provides a meaningful improve to penguin populations.*

b) *Assess the cost-benefit trade-off of 1) costs to fisheries, versus 2) the proportion of penguin foraging range protected during the breeding season, for different fisheries exclusion scenarios"*. (emphasis added)

46. Moreover, in summarising the Panel recommendations in paragraph 2.8, the Naidoo Memo states:

> "*2.8.5 Fishery costs of closure or fishing limitations as presently estimated are likely to be an overestimation. Current methods offered to calculate costs to the fishing industry can however be used to evaluate the relative impact of different closure options*."
>
> "*2.8.7 The Panel has provided a methodology to evaluate different fishing limitation options. These methods can be used to assess trade-offs of existing and new fishing limitation proposals*." (emphasis)

47. Despite acknowledging the dual functions for which the Panel was appointed and noting its recommendations relating to the trade-off mechanism (including the fact that current methods to calculate costs to Industry can be used in a relative sense, dispelling any notion that such costs could not yet be determined), the Naidoo Memo failed to provide for these in the recommendations for which the Minister's approval was sought. This is an inexplicable omission in that the Naidoo Memo expressly notes:

47.1 that the Panel provided a trade-off mechanism for determining which limitation delineations should be imposed (paragraph 2.8.7 of the Naidoo Memo); and

47.2 the Panel's view that available catch data can be used for purposes of applying the trade-off mechanism i.e. the costs using the "OBM" method could be used "*in a relative sense*" as part of the trade-off comparison as explained in "**AM5**" (paragraph 2.8.5 of the Naidoo Memo).

48. While the Naidoo Memo failed to include the issue of the trade-off mechanism and recommendation regarding how to deal with costs data in the short-term among the approvals sought, it failed to deal at all with the fact that the Panel had been mandated to determine areas of benefit to African Penguins and the endorsement of the "mIBA-ARS" method. I have already addressed this aspect of the Panel's Terms of Reference and its recommendations at paragraphs 105.2, 106.2 and 113.3 of the founding affidavit.

49. The omission of these considerations is material. This is because it indicates that the Minister's approval was sought (and provided) in relation to a set of recommendations entirely inconsistent with the purpose for which the Panel was appointed and entirely at odds with the Panel's recommendations. It is unfathomable that neither the DDG:O&C, the Director-General nor the Minister picked up on this material incongruency when considering and approving the recommendations in the Naidoo Memo. It would suggest that none of them properly applied themselves to the matter, given that the incongruency is clear from the Naidoo Memo itself, even if one has no regard to the Panel's report. Moreover, the failure to consider the trade-off mechanism and its use of relative cost data and the mIBA-ARS to assess areas of importance to African Penguins

signifies omission of considerations central to the entire enterprise undertaken by the Panel. In this regard alone, the Minister's decision is fatally flawed.

No consideration of the inappropriate nature of the Interim Closures

50. There is a further element of irrationality evidenced by the record and the Naidoo Memo, namely that there appears to have been no consideration of whether or not the Interim Closures were appropriate. This is material to the very purpose of the closures and the Minister's power to direct that fishing closures should be imposed around the breeding colonies for purposes of conserving African Penguins.

51. The Naidoo Memo contains three key paragraphs regarding the approach to island closures and their delineation. These paragraphs purport to flow from the Panel's recommendations and read as follows:

> "*2.9 Based on the above and in light of the dire state of the African penguin population, it is recommended that fishing limitations be employed as one of the interventions to support the conservation of this species. Fishing limitations are then proposed for Dassen Island, Robben Island, Stoney [sic] Point, Dyer Island, St Croix Island and Bird Island. There are currently interim fishing limitations at these islands that were implemented from September 2022.*
>
> *2.10 The interim fisheries limitations or closures are set to expire at the end of July 2023. These should continue until the end of the current fishing season unless there are other colony-specific agreements from the representatives from the Small Pelagic Fishing Industry and Civil Society Conservation Sectors. The remaining months until the end of the current small pelagic fishing season will be used to evaluate fishing limitation options using the trade-off methods suggested by the Panel to propose fishing limitations for colonies where there*

is no agreement across the Sectors. If no alternate fishing limitation proposals are concluded by the start of the 2024 Small Pelagic Fishing Season (January 15th, 2024) the current interim fishing limitations will continue until the end of the 2033 Fishing Season, with a review in 2030 after six years of implementation from the start of the 2024 fishing season. Fishing limitations can be additionally reviewed during years of higher-than-average abundance of small pelagic fish stocks. The definition and method to calculate this average including the number of years and valid data points are to be determined by the Fisheries Management Branch within the 2023/24 year. Similarly, the Operational Management Plan for the Sardine and Anchovy can be adapted to acknowledge models of the penguin population, including at low fish biomass levels and at suitable spatial scales. Any decision to alter fishing limitations must be a joint recommendation from the Branch Oceans & Coasts and the Branch Fisheries Management. The Interim Closures Maps are attached as Annexure 5.

2.11 Notably, during the June Panel meeting the Chair encouraged the representatives of the fishing and conservation sectors to find each other on fishing limitation and benefit discussions. There was some movement towards agreement during a dedicated negotiation time for possible fishing limitations at Robben Island, Bird Island and for the St Croix Island. If Sector representatives can confirm these, these agreed fishing limitations can be implemented immediately. Agreed fishing limitations will be formalised through the Deputy Directors General of the Branches Oceans and Coasts and the Fisheries Management. Fishing limitations will be implemented through permit conditions as is the case with current interim fishing limitations". (emphasis added).

52. Paragraph 2.9 of the Naidoo Memo correctly reflects the Panel's recommendations regarding the need for island closures and, flowing from these, recommends "*fishing limitations*" around the breeding colonies. It, moreover, correctly reflects the factual situation in respect of island closures at the time i.e. that Interim Closures had been implemented from September 2022.

53. However, paragraphs 2.10 and 2.11 contain a number of inexplicable inconsistencies with the Panel recommendations.

53.1 First, paragraph 2.10 contemplates using the Panel's trade-off mechanism to "*evaluate fishing limitation options*" during the remainder of the 2023 small-pelagic fishing season to propose fishing limitations for colonies where there is no agreement between Industry and the conservation sector. However, it then states that "*[i]f no alternate fishing limitations proposals are concluded by the start of the 2024 Small Pelagic Fishing Season (January 15th 2024) the current interim fishing limitations will continue until the end of the 2033 Fishing Season…*". This makes no sense.

53.1.1 The entire purpose of the trade-off mechanism is not to identify new proposals but to objectively evaluate existing proposals. Indeed, the trade-off mechanism serves to obviate the need for consensus, not perpetuate the need for it, as the recommendation at paragraph 2.10 does.

53.1.2 It therefore makes no sense to use the trade-off mechanism to facilitate further negotiations where no agreement can be reached, but to not use it to finally resolve the issue when agreement cannot be reached. This is the very opposite of what the trade-off mechanism was meant to achieve.

53.1.3 The Naidoo Memo's reliance on the trade-off mechanism recommended by the Panel is therefore entirely inconsistent with the fact that the Terms of Reference required the Panel

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to recommend a trade-off mechanism *"as a basis for setting fishing limitations and mapping"* in order for the Minister to delineate the fishing closures, and not as a basis for enabling further negotiations.

53.1.4 In any event, the corresponding recommendation to the Minister, at paragraph 5.2.2 of the Naidoo Memo and, hence, the Minister's decision did not rely on the trade-off mechanism at all.

53.2 Second, paragraph 2.10 contemplates reviewing fishing limitations "*during years of higher-than-average abundance of small pelagic fish stocks*". This seems to suggest that closures might be reviewed – or potentially removed – should fish biomass increase year-on-year. However, this is inconsistent with the notion of imposing island closures for a duration matching the life-history of African Penguins in order to monitor and refine the efficacy of closures, *inter alia*, through refining mechanisms for determining important foraging areas, determining impacts on African Penguins outside breeding seasons and gathering appropriate fisheries costs data.

53.3 Third, paragraph 2.10 proposes that the "Operational Management Plan for Sardine and Anchovy" can be adapted. This suggests that an Operational Management Procedure (not "Plan" as Naidoo states) for managing these fisheries is currently in place as a management tool for sardine and anchovy and is readily modified to account for African Penguin needs. However, the current Operational Management

Procedure or "OMP" has not been used as a management tool regulating the sardine and anchovy catch since at least 2021 (as pointed out in the comments appearing at page 23 of Item 9 of the Record (attached as "**SFA10**") and is consequently subject to review. It is entirely misleading, given the complexities around the OMP and stock management and the current status of this process, to give the impression that it is a readily adaptable management tool in the context of explanations regarding island closure delineations.

53.4 Fourth, while the notion of a joint recommendation between DFFE Branches dealing with Fisheries Management (i.e. DFFE: Fisheries) and Oceans & Coasts (i.e. DFFE: O&C) appears consonant with principles of co-operative governance and good practice, this ignores the ongoing disputes between DFFE branches which in part led to the need for the various rounds of analysis subsequent to the Joint Governance Forum (**JGF**). I refer, in this regard, to paragraph 2.4 of Item 6 of the record which reports to the Minister on the outcome of the JGF and is attached as "**SFA11**". Critically, the very need for international experts, external to the DFFE, followed the inability of DFFE officials to reconcile their own scientific input, as well as that of the conservation sector and Industry.

53.5 Fifth, paragraph 2.11 refers to "*some movement towards agreement during a dedicated negotiation time for possible fishing limitations at Robben Island, Bird Island and for the St Croix Island*". The inference of agreement being imminent or likely was clearly misleading.

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53.5.1 As explained in paragraph 110 of the founding affidavit, during the 6 June 2023 Panel session, Mr de Maine of ESCPA indicated that he would be prepared to discuss closures around St Croix and Bird Island i.e. the Eastern Cape closures. There was no "movement" around discussing Robben Island closures (which is not fished by rights holders represented by ESCPA). This is material, in that the inclusion of Robben Island here gives the impression that both ESCPA and SAPFIA were "moving" towards talk. There was no such indication from SAPFIA – the larger Industry representative body.

53.5.2 Moreover, by the date on which the Naidoo Memo was prepared (presumably prior to 18 July 2023 as reflected on "**SFA3**") there had been no further meeting or discussion around the details of the Eastern Cape closures. This had been confirmed to Dr Naidoo on 17 July 2023 in e-mail correspondence from myself which I attach as "**SFA12**".

53.6 Sixth, absent from these paragraphs is any reference to an assessment of the appropriateness of the Interim Closures, their origin, the reasons these were selected in September 2022 – or their ability to achieve the purpose of reducing competition between Industry and African Penguins for sardine and anchovy, thus improving prey availability for African Penguins – and ultimately serving as a conservation measure to prevent African Penguin population decline and extinction.

54. The last of these omissions is particularly egregious when considered against the Minister's annotations as well as the purported record as a whole.

54.1 First, the approval regarding fishing limitations which is sought in paragraph 5.2.2 states, *inter alia*, the following:

> "*The transition to implementing fishing limitations is described in Paragraph 2.10. However, in the absence of penguin colony specific agreements across the fishery and conservation stakeholders on limiting small pelagic fishing, consideration should be given on the current interim limitations or closures that must continue from 1 August 2023, as the interim limitations are due to end on the 31st of July 2023*".

54.1.1 Paragraph 5.2.2 does not in fact state which closures are to continue "*in the absence of … agreement*" and entirely omits reference to the "*trade off mechanism*". There is no indication as to why this important recommendation is omitted (or should not be followed).

54.1.2 It is evident that the Minister discussed the closure delineations with Dr Naidoo as appears from the handwritten note which states "*Technical extension of closures for August as discussed with Mr Naidoo on 22/7 pending release of report*". The record does not include any minutes or further records of the meeting between Dr Naidoo and the Minister. However, the note seems to suggest that the focus of such discussion was on closures in the period between 31 July 2023 and the date of the report release (being after 1 August 2023). There is no indication that there was any discussion

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regarding whether these closures were appropriate or could reasonably achieve their purpose. Similarly, there is no indication that the Minister applied her mind to the role of the trade-off mechanism in providing a basis for ending the impasse between stakeholders regarding which closures should be imposed.

54.2 Second, there is no indication in the record that the adequacy or otherwise of the Interim Closures was considered by the Minister before they were initially implemented as temporary measures in September 2022, let alone before they were provisionally extended for a 10-year period until the end of 2033.

54.2.1 The first reference in the record to the Interim Closures is in the submission to the Director-General enclosed as part of the Panel Establishment Workflow (**the Panel Establishment Submission**). The submission, presumably drafted on or around 27 October 2022 (the date submitted to the Director-General), is attached as "**SFA13**".

54.2.2 At paragraph 2.3 of the Panel Establishment Submission it sets out the background to the appointment of the Panel. This is followed by paragraph 2.4 which states, *inter alia*, that "*[w]hile preparations to set up the Panel are underway, the Minister announced the implementation of preliminary closures from 1 September 2022-14 January 2023 while the process to appoint the Review Panel is underway*".

54.2.3 The record does not provide any documentation reflecting how the Minister came to announce these closures – or approve them. This runs contrary to indications in Dr Fikizolo's e-mail correspondence addressed to the conservation sector on 18 August 2022 which, as discussed in paragraphs 96 of the founding affidavit, envisaged recommending temporary closures to the Minister and which acknowledged that they were not satisfactory for conservation purposes. The relevant e-mail is attached to the founding affidavit as "**AM42**".

54.2.4 This recognition of lack of consensus is later included in a draft press release dated 18 January 2023 submitted as part of the Panel Progress Workflow (but removed from a later version). I attach this Workflow Details, accompanying submission, two versions of the media statements and approved submission document as "**SFA14**", "**SFA15**", "**SFA16**", "**SFA17**" and "**SFA18**".

55. The upshot of this is that the Minister disregarded the recommendations of a panel of international experts regarding the appropriate approach to delineating fishing closures, despite the Panel having been constituted for that express purpose, and opted rather to take a decision which would foreseeably have the result of entrenching (for a decade) fishing closures which were determined purely as an interim stop-gap measure without any such scientific input and which the DDG:O&C himself acknowledged are not fit for conservation purposes.

What is more, the Minister did so without considering the adequacy of the Interim Closures in the light of the Panel's report and recommendations.

56. The absence of consideration of whether or not the Interim Closures were in fact appropriate and fit for purpose, is linked to a further critical flaw – already alluded to: the reliance on consensus despite clear evidence of none being likely.

57. Finally, paragraph 2.11 of the Naidoo Memo mentions the intention to implement the Interim Closures through permit conditions. Therefore, to the extent the Minister's decision is set aside and revised fishing closures are adopted, it will be necessary for the Minister to ensure that the conditions of any future fishing permit conditions are amended to reflect the revised closures. The applicants will file an amended notice of motion seeking consequential relief to this effect, on the basis that it constitutes just and equitable relief flowing from the invalidity of the Minister's decision and the adoption of revised closures.

Full awareness of the lack of agreement between Industry and the conservation sector

58. It is clear from the documentation provided in the record that the Minister was well aware of the impasse regarding closures between the conservation sector and Industry.

59. In the submission accompanying the Conservation Letter Workflow which was sent to the Minister on or around 22 November 2019 (and which is attached as "**SFA19**"), the following is stated at paragraph 2.9:

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> "*The Department of Environmental Affairs Scientists and policy division agree that fishing closures will be helpful in addressing the Penguin decline. The Department of Environmental Affairs Scientists and the Fisheries Scientists have met on the 20 of November at the Small Pelagic Fisheries Scientific Working Group, where closures were discussed. More interactions are required over December and January to reach agreement on the scale of closures. The Fishing Industry representatives at the meeting did not support closures, noting that the small pelagic fishing sector is in crisis due to the collapse of the sardine and anchovy stocks.*" (emphasis added)

60. The submission accompanying the Synthesis Report Workflow (dated on or around 30 June 2021) describes the "*tension*" between SANParks and Branch: O&C on the one hand, and Branch: Fisheries on the other in paragraph 2.4. This tension relates to the acceptance or otherwise of the need for island closures. This submission signed by the Minister is attached as "**SFA20**".

61. A workflow submission relating to correspondence from SAPFIA to the DFFE similarly makes the disagreement clear. At paragraph 2.3 of the relevant submission signed by the Minister on 4 April 2022 and attached hereto as "**SFA21**", the following appears:

> "*It is widely acknowledged by the conservation sector that the predominant driver of this species' [the African Penguin's] recent decline is the poor availability of their prey, mostly anchovy and sardine. These species are also targeted by the purse-seine fishing industry. This attribution of the decline to fishing activity is the basis of the correspondence to Minister. The fishing industry and the scientist representing the industry argues that this is not conclusive and more can be done to establish or test this link.*"

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62. Similarly, the submission enclosed with the CAF Gazette Workflow, attached as "**SFA22**", contains particularly telling comments regarding the discord between stakeholder groups in paragraph 2.4 which reads:

> *"While the recommendations made by the CAF have been considered by the Department in its review of the draft BMP for African penguin to gazette for public comments, there is however also a need to gazette the recommendations made by the CAF in the draft report on the special project on penguins and small pelagic fishery interactions, as this document is considered a decision-making tool for the Department in implementing the BMP for African penguins. It is expected that the CAF recommendations regarding island closures (restriction on commercial fishing around the islands), colony by colony over 4 years, may cause controversy and an uproar in a fisheries sector which is already faced with multiple challenges of food security, lack of access to financing, shrinking fishing boundaries and the perception that the fisheries sector, particularly the small-scale fisheries sector, is operating within disadvantageous policies. It is important to note that gazetting the draft report on special project on penguins and small pelagic fishery interactions may lead to the members of the public questioning the objectivity of the CAF as it relates to its mandate, as it has been established to oversee aspects relating to the fishing industry. Gazetting the draft report may further enhance existing fragmentation between the fisheries and conservation sectors. It is important for the Department to put in place mitigation measures that will ease the transition for implementing the proposed recommendations and actions in the fisheries sectors, which mainly come from fishing communities and who perceive themselves as having been largely discriminated against. It is further expected that gazetting the draft report for public comment will further delay the implementation of the BMP's action plans."* (emphasis added)

62.1 I pause to note that the small-pelagic purse-seine fishing industry – the Industry affected by closures – does not include "*small scale fisheries*", but only holders of commercial fishing rights.

62.2 Annexure 1D to the submission, which is the draft CAF report itself (attached as "**SFA23**"), is particularly clear in highlighting the disagreement between stakeholders. The opening paragraph of the Executive Summary makes the controversy between stakeholders clear and states the following in the second paragraph:

> "*More than 50 hours of virtual meetings were held between CAF members and observers with a substantial additional effort on one-on-one meetings to attempt to broker consensus, but to no avail. Results of the Island Closures Experiment (ICE) were fiercely debated and it became clear to CAF that consensus would not be reached under current circumstances and that a final decision on which result of ICE is the most accurate is unlikely in the foreseeable future*". (emphasis added)

62.3 Moreover, in the body of the report, at page 15, the need for an external international expert review "*as called for by the fishing industry*" is necessary to ensure that scientific disputes were resolved (although may also result in further disputes by either Industry scientists or the conservation sector).

62.3.1 As explained in the founding affidavit as well as paragraph 2.3 of the submission accompanying the Panel Establishment Workflow ("**SFA13**"), it was both the conservation sector and Industry which proposed an international review to the Minister.

63. The Panel Establishment Workflow submission, again indicates, at paragraph 2.4, that in parallel to the Panel process "*[i]t is... advised that consideration be given to engage stakeholders on the possibility of extending the*

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current interim closures. As agreement is unlikely based on the last 3 years of interactions, it may be necessary for the Branch Fisheries and Oceans and Coasts to develop an internal recommendation on extending the current closures in its present of modified form" (emphasis added).

Insistence on consensus despite awareness of lack thereof

64. Despite the clear indications that consensus has always been highly unlikely, it is evident from the record that the Minister has consistently favoured consensus over robust decision-making to protect African Penguins. I make this submission in paragraph 218.2 of the founding affidavit.

64.1 In the undated submission from Dr Fikizolo to the Minister, submitted as part of the CAF Gazette Workflow ("**SFA22**"), the Minister is requested to approve the gazetting of the *"draft report on the special project on Penguins and small pelagic fishery interactions by the [CAF]"* and approve the newspaper advert and gazette notice advertising the draft report for public comment.

64.2 Dr Fikizolo's submission notably records that "*[i]t is expected that the CAF recommendations regarding island closures (restriction on commercial fishing around the islands), colony by colony over 4 years, may cause controversy and an uproar in a fisheries sector which is already faced with multiple challenges of food security, lack of access to financing, shrinking fishing boundaries and the perception that the fisheries sector, particularly the small-scale fisheries sector, is operating within disadvantageous policies…Gazetting the draft report*

may further enhance existing fragmentation between the fisheries and conservation sectors. It is important for the Department to put in place mitigation measures that will ease the transition for implementing the proposed recommendations and actions in the fisheries sectors" (emphasis added).

64.3 No further details are provided regarding what these mitigation measures might be, but it is evident that appeasing Industry is a factor foremost in the DFFE's mind insofar as island closures are concerned.

65. The CAF Gazette Workflow in fact provides a particularly clear instance of the Minister privileging consensus over her constitutional mandate to protect the African Penguin.

65.1 In the relevant Workflow Details (attached as "**SFA24**") a note from Naidoo appears which seems to have been inserted on or around 7 June 2022. The note reads:

> "*Dear Milicent, thank you for preparing both the gazettes, please can you archive / stop this one as per comments we received on MCE217229. Thank you, Ashley N.*"

65.2 MCE217229 is a document management number associated with another workflow which concerns the "*Consultative Advisory Forum on Marine Living Resources (CAFMLR) Recommendations on the African Penguin Crisis*" and covers the period 30 May 2022 to 2 June 2022, as appears from the Workflow Details attached as "**SFA25**".

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65.3 The origin of this workflow appears, from the instruction to DFFE:O&C attached as "**SFA26**", to be the letter from the conservation sector dated 27 April 2022 attached to the founding affidavit as **AM31**. As clearly appears from the face of this letter, it reports that "*[a]s the Fisheries Sector and the Conservation Sector are unable to reach agreement on the way forward, we propose that an independent international review of the CAFMLR's recommendations (and the subsidiary reports that were provided to the CAFMLR proceedings be undertaken. The panel that undertakes the review can, after evaluating the relevant information, make a recommendation on the future of the island closures".*

65.4 The submission by Dr Fikizolo to the Minister which addresses this correspondence (attached as "**SFA27**") reflects engagements between the conservation sector group and Industry as well as emphasising the difficult work of the CAF and the coverage of next steps by the AP-BMP. It recommends that the Minister note the briefing regarding the conservation sector group's correspondence and signs a letter in response. (Three versions of a letter are included in the record although it is not clear which served before the Minister. I attach these documents as "**SFA28**", "**SFA29**" and "**SFA30**").

65.5 It appears that none of these letters was in fact signed. Instead, a handwritten note (which appears to be from the Minister) is enclosed with the Workflow Details and attached as "**SFA31**" which reads:

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> *"At this stage negotiations are taking place between the Fisheries, small pelagic sector and the conservation sector. I do not want to disturb the negotiations so its not opportune to publish CAF report. However you can submit the revised PBM Plan for my approval & for gazeting* [sic]. *Since this plan was received by CAF I have not seen it".*

65.6 It is inexplicable that the Minister could have taken an approach of not wishing to "*disturb negotiations*" which were "*taking place*" when the very contents of the letter of 27 April 2022 expressly indicated that the negotiations had reached an impasse and were no longer "*taking place*" save to agree that the intervention of an international panel of experts was required. However, it is consistent with her approach, as outlined in paragraphs 80 to 85 of the founding affidavit, to insist on compromise above all else.

The Minister's comments on the Naidoo Memo suggest limited consideration of the Panel recommendations

66. In the absence of the Minister having provided reasons for the impugned decision, her annotations on the Naidoo Memo stand as the sole indication of her decision-making. However, neither these annotations nor the remainder of the record evidence any substantive engagement with the Panel's recommendations. Similarly, they reflect no engagement with the Minister's legal obligations governing her decision-making process in respect of island closures or their objective as a conservation measure in respect of her constitutional duty to protect a threatened species. These considerations are entirely absent from the Naidoo Memo, its supporting documentation and the balance of the record.

67. The comments appearing on the approval page of the Naidoo Memo are as follows:

67.1 In respect of the noting of the Panel report at paragraph 5.1 there is no annotation at all (and the relevant text requiring confirmation that the report had been noted is not circled).

67.2 As indicated in paragraph 54.1 above, the key substantive recommendations regarding closures in paragraph 5.2 are accompanied by an annotation denoting the extension of the closure for August 2023 and the related discussion between the Minister and Dr Naidoo.

67.3 Recommendations pertaining to future scientific recommendations and a communication plan in paragraphs 5.3 and 5.4 are marked "approved" without comment.

67.4 The recommendation regarding approval of the Panel's work and remuneration in paragraph 5.5. is approved subject to a comment regarding the need for the accounting officer to approve financial matters where necessary. No consideration is given to whether, in fact, the Panel had completed its mandate. In this regard, I draw attention to the requirement in the Terms of Reference that the Panel determine delineations if finding that island closures were an appropriate conservation measure.

67.5 The recommendation in paragraph 5.6 regarding Panel members being available to present their report is noted with a comment that "*Minister*

will give this date early in August to meet with panel + stakeholders". There is nothing in the record that shows that the Minister met with the Panel and stakeholders as indicated.

67.6 Finally, the recommendation in paragraph 5.7 that the Report be made publicly available is approved with the note that "*[t]his will happen after Minister has released to the public"*.

68. The annotations in paragraphs 5.2, 5.5, 5.6 and 5.7 merely focus on the timing of the release of the Report in August and procedural matters pertaining to remuneration and the extension of interim closures. There is no indication, either in the Naidoo Memo or elsewhere in the record, of any interrogation of the substance of the Naidoo Memo, the Panel Report or Executive Summary, whether the Panel had adhered to its Terms of Reference and met the objective of the exercise.

69. It is pertinent that much of the Minister's decision, which is evidenced by the media release ("**AM15**"), emanates from Dr Naidoo's submission – and particularly the approval of paragraph 5.2. There is nothing to suggest that the Minister properly applied her mind to the Panel report, which was included as an annexure to Dr Naidoo's submission. Had she done so, it is inconceivable that she would have come to the decision that she did.

70. It is apparent from this that, in effect, the Minister simply "rubber-stamped" what had been prepared by Dr Naidoo and failed to properly apply her mind to the Panel's recommendations, particularly those regarding the trade-off mechanism.

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CONFIRMATION OF REVIEW GROUNDS

71. What emerges from the above is that the Minister appreciated and endorsed certain of the Panel's recommendations, specifically in relation to the necessity of implementing closures and that they be imposed for a period of ten years with review after six years – however inexplicably endorsed the continuation of Interim Closures until 2033, unless the conservation sector and Industry could reach "*colony specific agreements*". This approach is patently irrational. Having appointed the Panel for the very purpose of resolving the dispute regarding appropriate delineations, Dr Naidoo, and consequently the Minister, failed to implement the recommendation which would resolve the impasse.

72. This is still more inexplicable in the light of the clear reference in paragraph 2.8 of the Naidoo Memo to the Panel's trade-off mechanism while paragraph 2.10 invokes it only as a means of enabling further negotiations and not as a means of resolving the impasse between Industry and the conservation sector, which was the entire purpose for which the Panel had been requested to recommend a trade-off mechanism in the first place.

73. The inescapable conclusion is that significant public funds were spent on the appointment of a panel of international experts, only for the Minister to ignore a key recommendation in the Panel's report. This flies in the face of the purpose for which the Panel was appointed; evidences the Minister's failure to apply her mind to key considerations; and demonstrates clear lack of connection between the full pack of information before the Minister, the purpose for which she

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exercised her decision-making power and the ultimate decision; and suggests a clear and material error at the heart of this decision-making.

74. Accordingly, I confirm the grounds of review submitted in my founding affidavit, amplifying them as appropriate in what follows.

First ground of review: irrationality

75. In the founding affidavit, I submit that the Minister's decision is irrational in several respects. These allegations are only bolstered by the information contained in the record. I say this both in the light of my analysis above and for the following reasons which flow from it.

76. First, the Minister's decision bears no relationship to the purpose for which it was taken or the power to order fishing no-take zones.

76.1 The Minister appointed the Panel for the distinct purpose of assessing the available scientific evidence to establish whether island closures are an appropriate conservation measure and recommending an appropriate trade-off mechanism for identifying which of the various potential closure delineations around each breeding colony struck an optimal trade-off between protecting African Penguins and minimising impact to Industry.

76.2 The Panel duly found that island closures are an appropriate conservation measure and recommended a scientifically defensible trade-off mechanism that incorporates: (1) the mIBA-ARS method as

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the best available method for purposes of identifying African Penguins' preferred foraging areas; and (2) relative use of the OBM model to compare the impact of different delineations on Industry in light of existing and available "costs" data. However, the Minister's decision bears no relation to this recommendation.

76.3 It is abundantly clear from the record that neither Dr Naidoo, nor any other official in DFFE, nor the Minister, applied (or otherwise catered for the application of) the Panel-recommended trade-off mechanism in determining island closures. This is, despite the Naidoo Memo recognising the trade-off recommendation in its summation of the Panel outcomes recorded in paragraph 2.8.

76.4 Instead:

76.4.1 Dr Naidoo invoked it merely as an interim tool for proposing fishing limitations where there was no agreement and not as a tool for <u>finally</u> determining fishing limitations in circumstances where disagreement was inevitable; and

76.4.2 the Minister did not rely on it at all.

76.5 Therefore, having recognised the Panel's finding that island closures are an effective conservation measure, they ignored its recommended trade-off mechanism for delineating appropriate island closures. Put differently, they accepted the premise but ignored the conclusion,

76.6 Based on the Naidoo Memo's erroneous recommendations, the Minister decided that, in the absence of any agreement between

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Industry and the conservation sector being reached in the period between 4 August 2023 and 31 December 2023, the Interim Closures must be implemented for a period of 10 years.

76.7 For the reasons set out in paragraphs 165 of 183 of the founding affidavit, these closures are not informed by the best available science. Accordingly, they are incapable of achieving the objective of science-based conservation measures. Moreover, they fail to reduce competition between Industry and African Penguins and accordingly fail to serve as a mitigation measure to address the adequacy of African Penguins' access to prey – ultimately – to serve as a measure to mitigate and prevent further population decline.

76.8 The Panel Report Workflow indicates that there was no consideration given as to whether or not the Interim Closures were appropriate as long-term conservation measures – while confirming that their temporary nature was known to the Minister.

76.9 Consequently, the impugned decision is not rationally connected to the purpose for which it was taken, and bears no connection to the purpose sought to be achieved. It also bears no connection to the powers granted to the Minister to take necessary conservation measures to protect the survival chances and well-being of threatened species and the Minister's corresponding legal duty to do so.

77. Second, the impugned decision is not supported by the evidence and information specifically procured by the Minister for purposes of rendering her decision and

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appears to be based on material factual errors regarding the scope, content and import of the Panel's recommendations. It is clear that key considerations regarding the appropriateness of particular island closure delineations were not considered while there is evidence of information and recommendations regarding future determinations of fish biomass that reflect no clear origin in the Panel's report (or elsewhere).

77.1 The Terms of Reference made it clear that the issues central to its appointment were (1) whether island closures should be implemented at all; and (2) if so, the trade-off mechanism which should be used to determine the closures to be imposed. The Panel made clear recommendations indicating that closures should be implemented. The Panel further provided a clear trade-off mechanism for doing so. This was evident from the Panel's report and executive summary.

77.2 However, the centrality of the recommendation regarding the trade-off mechanism was not recognised in the Naidoo Memo which also served before the Minister when she took her decision. This was a material error and key omission in the Naidoo Memo – and there is no evidence that the Naidoo Memo provided any justification for considering and rejecting the trade-off mechanism. Similarly, the purported record includes no reference to the Minister having discussed or considered such omission – nor why the continuation of the Interim Closures and/or an agreement between stakeholders regarding closure delineations should be favoured over the Panel's express recommendation regarding closure delineation.

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77.3 This is unsurprising insofar as it appears that the Minister relied on the Naidoo Memo in taking her decision – and largely rubber-stamped its recommendations. There is no application of the trade-off mechanism in the Naidoo Memo. To the contrary, the Naidoo Memo misconstrues the trade-off mechanism as merely being a means to "propose" fishing limitations for consideration by Industry and the conservation sector, and not as a basis to impose fishing limitations in the event of them not being able to reach agreement. What is more, the Naidoo Memo completely omits any mention of the trade-off mechanism in the recommendation to the Minister, which ultimately informed her decision.

77.4 It is, moreover, clear that the DFFE had not considered the Panel's report in full at the time the Naidoo Memo was approved by the Minister, as appears from Dr Naidoo's representations and communications to the conservation sector. Consequently, the Minister could not have considered accurate and complete information regarding the closures to be imposed prior to taking the decision.

77.5 At the same time, the Naidoo Memo includes reference to future determinations of biomass and trade-offs which refer to use of the "Operational Management Plan" by DFFE: Fisheries. This aspect of the Naidoo Memo contains a material error in terms of how fish stocks are currently managed (the OMP not being used) and bears no relationship with the Panel's recommendations.

77.6 The imposition of island closures was central to the Minister's decision. She sought advice from the Panel to ensure that these were appropriate and achieve a trade-off between the interests of African Penguins and Industry. The trade-off mechanism was the Panel's response in this regard. The trade-off mechanism was not considered or applied by the relevant DFFE officials prior to the Minister's decision and there is no indication that the absence of such analysis or application formed any part of the Minister's considerations. This was a material omission – and error – which taints the Minister's decision with irrationality.

78. Third, the impugned decision is not capable of advancing the purpose for which it was taken. It is evident from the Terms of Reference that it was specifically contemplated by the Minister that the Panel's recommendations were sought to advise the Minister on how to resolve the impasse between penguin scientists and conservationists on the one hand, and fisheries scientists and Industry on the other. The Panel was to do so by presenting a consolidated set of clear recommendations to enable the Minister to make a final decision regarding the imposition of island closures which benefited African Penguins at the least cost to Industry.

78.1 The Panel produced such recommendations, including a recommendation regarding the trade-off mechanism to be applied.

78.2 Rather than applying the trade-off mechanism, the Naidoo Memo, and the Minister's decision, again left the determination of island closure delineations to "agreement" between Industry and the conservation

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sector. There is no clear justification for doing so in the Naidoo Memo – save the vague notion that there was "movement" towards agreement. As illustrated above, this representation was – at best – an overstatement of the position and included an error in indicating that Robben Island was part of such agreement.

78.3 As submitted in paragraph 207 of the founding affidavit, leaving the decision regarding island closures to agreement between the conservation sector and Industry is irrational. I say this because the debates regarding closure delineation have persisted throughout all government-led processes including the JGF, ETT, CAF and indeed the Panel process. The record bears clear testimony to these "*lengthy debates*" and "*dichotomous views*" as detailed in paragraphs 58 to 65 above. The Minister was well aware of the impasse between stakeholders.

78.4 Insofar as the Naidoo Memo gave the impression that there was potential for agreement, as I have described at paragraph 53.5 above, this was clearly an overstatement of the position in July 2023 and indicates a material error insofar as the Minister relied on it to justify further relegating her decision-making obligations to the conservation and Industry stakeholder groups.

78.5 The purported record demonstrates a significant gap in the reasoning of the Naidoo Memo. Given the apparent unquestioning acceptance of its contents, such irrationality taints the Minister's decision. Despite overwhelming evidence that agreement between the conservation

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sector and Industry would be impossible, and the Panel having made clear recommendations regarding a trade-off mechanism that would resolve such disagreement, the Minister's decision nevertheless left the ultimate fate of closure delineations to "agreement".

79. Fourth, the record contains no reasons for the Minister's decision.

79.1 I am advised that the Minister is obliged to give reasons as an instance of her obligation to exercise her powers (in this case to act to intervene in the protection and conservation of an endangered species) in a manner which is rational. The duty to give reasons flows from this obligation, as well as the requirement on all organs of state to adhere to the values of transparency and accountability expressed in section 195 of the Constitution.

79.2 The Minister has failed to provide any reasons for her decision despite having been called upon to do so. This, in itself, renders her decision irrational.

79.3 More specifically, there is no clear reason for the Minister having preferred "agreement" between stakeholders over application of the "trade off mechanism" – or any reason why such approach would be taken after the time, effort and expense of calling for an expert panel. The outcome of the process is thus entirely arbitrary.

79.4 Accordingly, the absence of reasons is a further indication of the irrationality of the Minister's decision.

80. For the reasons mentioned above, the impugned decision is both substantively and procedurally irrational. The Minister appointed the Panel after representations from both Industry and the conservation sector to appoint an international panel of experts to intervene in scientific debates regarding island closures so that these were finally resolved for the purposes of the Minister taking a decision. However, the decision taken upon receiving the Panel's report and recommendations ultimately bore no connection to the purpose for which the impugned decision was taken, or the procedure followed in appointing the Panel. This is because the Minister:

    80.1 disregarded the Panel's recommendations, the implementation of which would have finally resolved the matter, in favour of prolonging the negotiations which had necessitated the Panel's appointment in the first place; and

    80.2 in the absence of any agreement being reached between Industry and the conservation sector, defaulted to entrenching the unscientifically determined Interim Closures rather than adopting scientifically determined closures through the implementation of the trade-off mechanism.

81. For the multiple reasons I have set out above, it makes no sense to have appointed a panel of international experts, at significant cost to the fiscus, and with agreement of disputing stakeholders as to that Panel's soundness and ability to provide a definitive resolution to long-standing debates, only to take a decision which completely disregards its input and has as its ultimate purpose a resort to consensus-seeking and the perpetuation of existing fishing closures.

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82. This irrationality is highlighted by the appointment to the Panel of Prof James Sanchirico who, according to the Naidoo Memo, was "*added later in 2023 as the Panel required economic sciences expertise*", with the remainder of the Panel having been appointed in December 2022. Prof Sanchirico was recommended in the relevant submission to the Minister (attached marked "**SFA32**") as an addition to the Panel on the basis of his having *specific expertise in economic evaluation of marine ecosystems and the economics associated with marine fisheries"* and having experience in "*assessing benefits from ecosystem based fisheries management*". It is simply irrational to have appointed someone of this expertise, on the basis that "*the Panel requires economic sciences expertise*", only then to completely ignore the trade-off mechanism that his expertise would have enabled the Panel to put forward.

83. For these reasons, I persist in my submission that the decision falls to be reviewed and set aside in terms of:

83.1 section 6(2)(f)(ii)(aa) of PAJA as the decision was not rationally connected to the purpose for which it was taken;

83.2 section 6(2)(f)(ii)(cc) and 6(2)(e)(iii) of PAJA as the decision was not rationally connected to the information before the Minister, failed to take into account relevant aspects of the Panel's report and recommendations, and was based on a material error of fact regarding the contents and scope of the Panel's report;

83.3 section 6(2)(h) of PAJA as the decision was unreasonable; and

83.4 section 6(2)(c) of PAJA as the decision was not taken in a manner that was procedurally fair and rational.

84. Alternatively, the decision stands to be reviewed and set aside in terms of the principle of legality, in that it is both substantively and procedurally irrational.

Second ground of review: unlawfulness and unconstitutionality

85. In paragraphs 210 to 215 of the founding affidavit, I set out why the Minister's decision is unlawful and unconstitutional. I say this because, having regard to the obligations on the State under section 24 of the Constitution and section 3(1) of the NEM:BA (read with the Minister's powers and obligations under NEM:BA as well as the Marine Living Resources Act, 18 of 1998 (**MLRA**) and the relevant international conventions including the Bonn Convention, AEWA, CITES and UNCLOS), the Minister is obliged to implement urgent measures, including the imposition of fishing closures which limit purse-seine anchovy and sardine fishing activities, to prevent the impending extinction of the African Penguin. The Minister has simply failed to do so.

86. I note that the African Penguin is a key indicator of ecosystem health in the Benguela Upwelling system and the State's obligations under instruments such as AEWA which deal with that system cannot be divorced from the wider scheme of marine ecosystem protection. The obligations to act to protect the African Penguin under NEM:BA, the Bonn Convention and AEWA are thus supported by the objectives and principles of the MRLA as well as South Africa's obligations to preserve and protect the marine ecosystem in UNCLOS.

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87. There is no evidence in the purported record that the Minister had regard to or acted in accordance with these statutory, constitutional and international obligations when rendering the decision. The Naidoo Memo instead subordinates government's obligations to the notion of "agreement" between Industry and the conservation sector. This, despite the fact that the record demonstrates failure to agree between Industry and the conservation sector as far back as 2019 and, as indicated by the purported record and as described in the founding affidavit, Industry has consistently held the line that closures are not necessary.

88. It was incumbent on the Minister to implement timeous island closures that are biologically meaningful to African Penguins. Such an approach would be consistent with the precautionary principle: the Minister may not defer decision-making, or subvert such decision-making to agreement simply because scientific debate exists. This is articulated in advice provided by DFFE:O&C when considering the disagreement evidenced between stakeholders as alluded in paragraph 61 above. Despite being well aware of this important principle enshrined in both domestic and international law, the DFFE and the Minister failed to act in accordance with it. Indeed, decisions regarding appropriate island closures have again been left to consensus in the context of the Minister's decision, notwithstanding government's clear obligations in this regard.

89. The record only serves to confirm that the Minister subordinated the protection of an Endangered species to the preservation of healthy relationships with Industry. In so doing, the Minister has fundamentally misconstrued her function, powers and constitutional obligations to prevent environmental degradation, to promote conservation and to ensure ecologically sustainable use of natural

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resources for purposes of securing the environment for present and future generations. She has, moreover, entirely ignored the clear obligations and attendant powers, granted to her by statute, to promote and fulfil such rights through actively securing the protection and well-being of threatened species such as the African Penguin.

90. For these reasons, the Minister's decision was unlawful and unconstitutional and falls to be set aside in accordance with the provisions detailed in paragraphs 215 and 216 of the founding affidavit.

THE TIMING OF THIS AFFIDAVIT

91. As noted in the founding affidavit, this matter has been brought on an expedited basis. However, delays by the Minister in delivering the purported record and the supplementary record have compromised the timetable contemplated in the applicants' notice of motion. I set these delays out briefly below for the sake of explaining the timing of the filing of this affidavit.

92. As was made clear from both the notice of motion and founding affidavit, the Minister was required to provide the record of the impugned decision within ten days of receipt. Service occurred on 20 March 2024. Accordingly, the record was required to be dispatched on 8 April 2024.

93. On 5 April 2024, the State Attorney, acting on behalf of the Minister, requested that the applicants' attorneys grant an indulgence for the filing of the Record until 22 April 2024 (**the indulgence letter**). No such indulgence could be granted due

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to the urgency of the matter, however, a filing extension was granted until 15 April 2024, being the period which would have applied to the despatch of the Record in the ordinary course.

94. Despite this concession, the Minister failed to deliver the record on the 15 April 2024. Accordingly, on 17 April 2024, we served a notice in terms of Rule 30A calling on the Minister to remedy such default by producing the full record with reasons.

95. The purported record was ultimately provided on 25 April 2024 – outside the abridged time specified in the notice of motion, outside the ordinary time provided for in Rule 53 and also beyond the date of 22 April 2024 requested in the indulgence letter. Even so, the purported record was deficient.

96. The deficiency of the purported record was drawn to the attention of the Minister's legal representative through a phone call and e-mail on 6 May 2024, followed by more detailed enumeration of the purported record's deficiencies, addressed on 8 May 2024. This letter called upon the Minister to produce the necessary reasons and documents omitted from the record by no later than 15 May 2024.

97. No response to this letter was received. Accordingly, on 16 May 2024, the applicants were left with no other option but to serve a second Rule 30A notice calling upon the Minister to produce the full record (inclusive of omitted documents and reasons) within 10 court days, i.e. by no later than 30 May 2024.

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98. On 20 May 2024, the State Attorney again addressed correspondence to our attorneys seeking an extension of time for producing the outstanding documentation – on this occasion asking for an indulgence to 31 May 2024. In granting the one-day indulgence, our attorneys emphasised that the delays caused the first respondent were prejudicing the expeditious finalisation of the matter. Accordingly, such indulgence was made conditional on written confirmation of recognition of the need for the matter to be disposed of urgently. No such confirmation was received, and no documentation was delivered by 31 May 2024.

99. In the interim, we had addressed correspondence to the Deputy Judge President of this Honourable Court seeking to have the matter placed under case-management.

100. The Deputy Judge President granted this request on 28 May 2024 with the first case-management meeting ultimately occurring on 6 June 2024.

101. Pursuant to this meeting, and as confirmed by the Deputy Judge President's Directive dated 10 June 2024, the Minister was required to supplement the record by no later than 14 June 2024 with the date for the filing of this affidavit determined as 28 June 2024.

CONCLUSION

102. The record serves to bolster the grounds of review raised in the founding affidavit. It demonstrates unequivocally that the Minister's decision, influenced heavily by

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Dr Naidoo's submission, was both irrational and unlawful, bearing no relation to critical recommendations made by the Panel which the Minister herself appointed (at enormous expense) and failing to fulfil constitutional and statutory obligations to protect an Endangered species and prevent its extinction.

103. For these reasons, in supplementation of those contained in the founding affidavit, the applicants pray for relief set out in the amended notice of motion.

ALISTAIR MC INTYRE MC INNES

The deponent has acknowledged that he knows and understands the contents of this affidavit, which was signed and sworn to before me at Rondebosch on this the 27 day of **JUNE 2024**, the regulations contained in Government Notice No. R1258 of 21 July 1972, as amended, and Government Notice No. R1648 of 19 August 1977, as amended, having been complied with.

COMMISSIONER OF OATHS

Full Names:
Capacity: Sergeant Police Officer
Designation: Sergeant
Address: SAPS Rondebosch
Church Street
Rondebosch

SUID-AFRIKAANSE POLISIEDIENS
STASIEBEVELVOERDER
2024 -06- 27
STATION COMMANDER
RONDEBOSCH, K.P/C.P.
SOUTH AFRICAN POLICE SERVICES

949
"SFA1"

Red List Team (BirdLife International)
13 Apr, 2024

African Penguin (Spheniscus demersus)

Africa

Species	African Penguin (*Spheniscus demersus*)
Geographic Range	Endemic to southern Africa, where it breeds at 26 localities in **Namibia** and **South Africa** (Crawford *et al.* 2013, Kemper 2015, Makhado *et al.* in prep). It has been recorded as far north as Gabon and Mozambique (Crawford *et al.* 2013).
Current Category & Criteria	Endangered A2ace+3bce+4ace
Proposed Category & Criteria	Critically Endangered A3bce+4bce
Rationale for proposed change	An updated analysis of all nest count data from 1979 and 2023 has shown that the already very rapid rate of population reduction has accelerated extremely rapidly. Mean annual rates of reduction for recent periods of -5.4% for 1993-2023 and 7.9% for 2013-2023 implies that an extremely rapid reduction has taken place since 2018/2019, suggesting a very recent time frame for meeting thresholds for Critically Endangered between 2016 and 2020. Drivers of the established very rapid decline appear to be the impacts of competition with commercial fisheries and climate-mediated shifts in prey populations. The recent additional reduction may be due to these factors intensifying (plus several others such as disturbance through noise pollution, and the effects of direct oil contamination from spills), but the timing coincides with the initial detection of mortality from Avian Influenza in the species, suggesting this may be a significant driver. The trend shows no sign of reversing and immediate conservation action is required: at predicted rates fewer than 1,000 pairs will remain by 2050, when 57,000 pairs were estimated in 2004/5.
Type of proposed change	Genuine (recent)
Timing of genuine change	Rates of population reduction have exceeded thresholds for listing as Critically Endangered recently, between 2016 and 2020.
Drivers of genuine change	Population declines have been attributed to food shortages resulting from shifts in the distributions of prey species, competition with commercial purse-seine fisheries and environmental fluctuations (e.g. Crawford *et al.* 2011, 2019, 2022). A decrease in foraging effort at St Croix Island (Pichegru *et al.* 2010, 2012) and an increase in chick survival and chick condition at Robben Island (Sherley *et al.* 2015, 2018, Sydeman *et al.* 2021) following the establishment of 20 km no-take zones provides support for this theory. In the early 2000s, there was an eastward shift in sardine and anchovy stocks, with the mature biomass of these species, and their availability to seabirds, decreasing near the breeding islands north of Cape Town (Crawford *et al.* 2011, 2019). The abundance or availability of these prey species is known to influence foraging success (Campbell *et al.* 2019, McInnes *et al.* 2019), breeding success (Crawford *et al.* 2006, Sherley *et al.* 2013), chick growth (Sherley *et al.* 2013), adult survival (Sherley *et al.* 2014, Robinson *et al.* 2015), and juvenile survival (Weller *et al.* 2016; Sherley *et al.* 2017), all of which may often be too low off South Africa's west coast to maintain population equilibrium (Weller *et al.* 2014, 2016, Leith *et al.* 2022, Sherley *et al.* in press). West Coast populations declined by 69% between 2001-2009, driven at least in part by demographic responses to this climate-induced shift in fish stocks (Robinson *et al.* 2015, Sherley *et al.* 2017). African penguin fledglings travelled to areas of low sea surface temperatures and high chlorophyll-a which were historically reliable cues for fish availability. Climate change and industrial fishing have depleted forage fish in these areas, resulting in an ecological trap for the species and associated low juvenile survival (Sherley *et al.* 2017). In Namibia, where sardine and anchovy are virtually absent from the foraging ranges of breeding penguins, breeding birds feed principally on the energy-poor Bearded Goby (Ludynia *et al.* 2010). Limited penguin mortality in fishing nets may increase if gillnets are set near colonies (Ellis *et al.* 1998, Crawford *et al.* 2017). While a number of diseases have been documented in African penguins, few records of mass mortality through disease had been observed in the wild, up until 2018 and 2019, when a high pathogenic avian influenza (HPAI) strain

	killed approximately 100 penguins in South Africa and up to 800 in Namibia respectively (Khomenko *et al.* 2018, Molini *et al.* 2020). Since 2021, an additional *c.* 230 African penguins died due to a new strain of avian influenza in South Africa (Western Cape State Veterinary Services, unpublished data).
General request	The BirdLife Red List Team has updated the information held in SIS (IUCN Red List database) on the key parameters relevant to this species (Annex 1), and then applied the IUCN Red List Criteria and guidelines to reassess its status (Annex 2). If you have any information that may affect the value of the key parameters in Annex 1, and thus potentially affect the reassessment, please contribute them directly via the Forum or by email (redlistteam@birdlife.org) by 28 April 2024.
Specific questions	**Given the data and the recent occurrence of significant mortality from HPAI, is there some potential for the most recent reductions (on top of pre-existing very rapid reductions) to be a discrete mortality event with the potential for a return to a reduced (but still very high) rate of reduction after a few years?** **How many locations* are there?**

Annex 1: Species data (values of key parameters) *These terms have specific definitions as described by IUCN - please refer to the glossary and definitions page.				
Population size	**Estimate**	**Minimum**	**Maximum**	**Derivation**
Number of mature individuals	19,800	19,800	31,680	Estimated*
Justification	In 2023, the overall number of pairs was about 9,900, or 19,800 mature individuals (Sherley *et al.* in press). This roughly equates to about 31,680 individuals in adult plumage based on the conversion factor of 3.2 for pairs to individuals (Crawford and Boonstra 1994).			
Population trend	**Direction/Yes/No**	**Minimum %**	**Maximum %**	**Derivation**
Current population trend	Decreasing			Estimated*
Justification	Nest count data from 26 colonies, accounting for >99% of the population, estimate that current rates of reduction exceed 80% over three generations and this rate is accelerating.			
Generation length* (years)	10	Generation length estimated as the larger of two calculations based on the methods of Bird *et al.* (2020).		
3 generations/10 years (years)	30			
Past 3 generations/10 years	Reduction	72	85	Estimated*
Future 3 generations/10 years	Reduction	70	98	Projected*
Past + future 3 generations/10 years	Reduction	84	91	Estimated*
Justification	A Bayesian state-space model has been applied to nest count data made between 1979 and 2023 at 26 colonies (19 in South Africa and 7 in Namibia) to estimate the rate of decline in the population (Sherley *et al.* in press). Together, these 26 colonies account for >99% of the total population. Using 20 years (2 generations) of data to project ten years of counts for a three-generation moving window resulted in a maximum rate of reduction of 87.5% (95% CI = 83.7–90.9%) for the three generations between 2001 and 2031, with all projections ending between 2028 and 2033 exceeding a reduction of 80%. The rate of decline over the past three generations was 77.8% (71.8–84.6%) from a modelled population of 44,316 (38,044–50,978) pairs in 1993 to 9,910 (8,892–10,986) pairs in 2023. If rates of decline persist at the recent rates, the projected reduction over the next three generations will also exceed 80%. If the rate of population reduction since 1993 (5.4% annually) is used the projected reduction is 81% (53–93%), whereas the rate since 2013 (7.9% annually) results in a projected reduction of 92% (70–98%).			
Continuing decline in mature individuals	Yes			Estimated*
Justification	Direct counts covering nearly the whole population show extremely rapid and accelerating rates of decline, estimated at an annual			

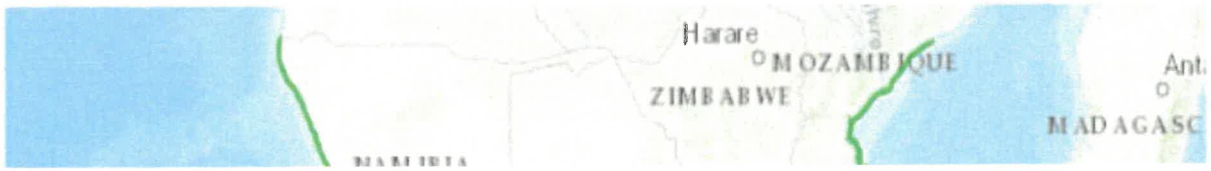
	reduction of 7.9% since 2013 (Sherley *et al.* in press). In the absence of any evidence of mitigation for the drivers of these declines they are projected to continue at an extremely rapid rate.			
Continuing decline over 3 years/1 gen	56%	42	56	Projected*
Continuing decline over 5 years/2 gens	81%	67	81	Projected*
Continuing decline over 10 years/3 gens	92%	70	98	Projected*
Justification	Based on the most recent annual rate of estimated population reduction from nest count surveys covering >99% of the population, at -7.9% since 2013, an exponential rate of reduction projected over the next one, two and three generations results in continuing declines of 56, 81 and 92%. A lower bound given uses the rate of -5.4% which is the rate since 1993.			
Subpopulation structure	**Number of subpopulations**	**No. mature individuals in largest subpopulation**		**% mature individuals in one subpopulation**
Values	1	Unset		100%
Justification	No internal population structure is known within the species.			
Trend	n/a		Derivation:	n/a
Justification	n/a			
Geographic range	**Value**	**Continuing decline?**		**Derivation**
Extent of Occurrence EOO* (km^2)	3,920,000	Unknown		n/a
Area of Occupancy AOO* (km^2)	Unknown	Yes		Inferred*
Justification	EOO calculated from a minimum convex polygon around known breeding colonies. AOO has not been calculated, but the observed loss of colonies and rate of reduction allows the inference of a continuing decline.			
Locations*	Unknown	Unknown		n/a
Justification	The number of locations has not been estimated. There are currently 26 colonies, but most are affected simultaneously by the most severe threats (loss of resource base due to overfishing and shifts in fish stocks due to climate change) but with the introduction of no-take zones around two colonies a small proportion of the population is not believed to be affected by these.			
Area/extent/quality of habitat		Yes		Estimated*
Justification	Ongoing impacts from chronic and persistent regular oil spills are causing continuing mortality in the species, and impacting breeding success (Vanstreels *et al.* 2023). In addition to oil spill risks, increased maritime traffic linked to the initiation of ship-to-ship bunkering in Algoa Bay doubled underwater noise pollution, making Algoa Bay one of the noisiest bays globally (Pichegru *et al.* 2022). The neighbouring African Penguin colony on St Croix Island concomitantly collapsed, with a 90% decrease since 2015 (Sherley *et al.* in press).			
Severe fragmentation and extreme fluctuations	**Yes/No**	**Parameter if yes**	**Justification**	
Severely fragmented*	No		n/a	
Extreme fluctuations*	No		n/a	
Restricted AOO/number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time	No		n/a	

Annex 2: Application of IUCN Red List Criteria. *These terms have specific definitions as described by IUCN - please refer to the glossary and definitions page.					
Categories and Criteria thresholds	**Critically Endangered**	**Endangered**	**Vulnerable**	**Met or approached by species?**	**Threshold level reached**

Criterion A: Rate of population decline over 3 generations/10 years (whichever is longer)					
A1	≥ 90%	≥ 70%	≥ 50%	No	
A2	≥ 80%	≥ 50%	≥ 30%	Met	CR
A3	≥ 80%	≥ 50%	≥ 30%	Met	CR
A4	≥ 80%	≥ 50%	≥ 30%	Met	CR
Criterion B: Geographic range					
B1: Extent of Occurrence EOO* (km^2)	< 100	< 5,000	< 20,000	No	
B2: Area of Occupancy AOO* (km^2)	< 10	< 500	< 2000	No	
And at least two of (a), (b) and (c):					
(a): Severely fragmented*/Number of locations*	=1	≤ 5	≤ 10	No	
(b): Continuing decline observed/estimated/inferred/projected in	(i) EOO, (ii) AOO, (iii) Habitat area/extent/quality, (iv) Locations/subpopulations, (v) mature individuals			Met	ii,iii,v
(c): Extreme fluctuations* in	(i) EOO, (ii) AOO, (iii) Locations/subpopulations, (iv) mature individuals			No	
Criterion C: Small population size and decline (population size must be ESTIMATED – it cannot be inferred or suspected [see IUCN Standards and Petitions Committee 2022])					
Number of mature individuals	< 250	< 2,500	< 10,000	No	
And at least one of C1 or C2:					
C1: An observed/estimated/projected continuing decline of at least:	25% in 3 years or 1 generation	20% in 5 years or 2 generations	10% in 10 years or 3 generations	Met	CR
C2: An observed, estimated projected or inferred continuing decline, plus at least 1 of 3:					
a(i): Mature individuals per subpopulation	≤ 50	≤ 250	≤ 1,000	No	
a(ii): % mature individuals in largest subpopulation	90-100%	95-100%	100%	Met	
b: Extreme fluctuations* in number of mature individuals				No	
Criterion D: Very small or restricted population (population size must be ESTIMATED - it cannot be inferred or suspected [see IUCN Standards and Petitions Committee 2022])					
Number of mature individuals	< 50	< 250	D1. < 1,000	No	
Restricted AOO/number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time	-	-	D2. Typically: AOO < 20 km^2 or ≤ 5 locations	No	
Criterion E: Quantitative Analysis					
Indicated probability of extinction in the wild (in 100 years max)	≥ 50% in longer of 10 years/3 generations	≥20% in longer of 20 years/5 generations	≥ 10% in 100 years	n/a	

Proposed Red List Category	African Penguin is proposed to be listed as Critically Endangered.

Species Range Map



Possibly extant | Introduced | Native resident | Assisted colonisation

Passage | Native breeding | Possibly extinct

Reintroduced | Native non breeding | Extinct

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23 thoughts on "African Penguin (*Spheniscus demersus*)"

AM

David Ainley says:
23/04/2024 at 9:43 pm

Fine, except also emphasized is the fact that penguins have an especially challenged energy budget, owing to their near total immersion in the cold ocean and a relatively poor (compared to aerial birds) capability of finding prey. Moreover, the eastern boundary current in which they exist, as with other EBCs, has very few islands, which the species needs for breeding. Therefore, it is the limit of nesting sites that is also contributing to the species' plight, exacerbated by the shift in prey schools and the reduced foraging range of the the penguin (compared to aerial birds).

Reply

Judy Mann-Lang says:
26/04/2024 at 4:41 am

I support this uplisting – sadly

Reply

Eleanor Weideman says:
26/04/2024 at 5:33 am

I support this proposal and agree that the species should be listed as Critically Endangered, given the dramatic population decreases over the past few decades.

Reply

Arne Purves says:
26/04/2024 at 6:05 am

The list of the African penguin as critically endandered is fully suported.

Reply

Tracy Shaw says:
26/04/2024 at 7:04 am

In definite agreement and support this proposal.

Reply

Trudi Malan says:
26/04/2024 at 7:05 am

We agree with the updated analyses and the proposal that the African penguin be listed as critically endangered.

Reply

Tegan Carpenter-Kling says:
26/04/2024 at 8:46 am

I support the listing of the African penguin as Critically Endangered.

Reply

Ted Knott says:

26/04/2024 at 11:17 am

I am in agreement and I support this proposal.

Reply

Deon Geldenhuys says:
26/04/2024 at 12:02 pm

I agree and support the proposal for the African penguin to be listed as critically endangered.

Reply

Francois Lampen says:
26/04/2024 at 12:34 pm

Long overdue. Desperately needed, yesterday already.

Reply

LORIEN PICHEGRU says:
26/04/2024 at 1:21 pm

Strongly supporting the urgent uplisting of the African Penguin to Critically Endangered

Reply

Christina Hagen says:
26/04/2024 at 4:36 pm

BirdLife South Africa supports this genuine change in status. We also support the acknowledgement of the significance of food availability to African Penguins and the role this has played in the decrease in numbers. We highlight the importance of increasing the availability of prey for penguins around their breeding colonies through closed areas as one of the ways to mitigate the threat of a lack of available prey. In the text, under the justification section for Locations in the Geographic range section, a correction should be made. No-take zones have been implemented around six of the largest remaining colonies in South Africa. However, the efficacy of those zones at reducing resource competition has been questioned by conservationists as they were not delineated using the best available methods, as suggested by an expert panel brought in to review the scientific basis for establishing the zones.

Three locations were used in the Green Status assessment and could be applied here as well. These locations are: southern Namibia, Western Cape and Eastern Cape.

In South Africa, HPAI did not cause mass mortality events as was seen in Namibia (and in other parts of the world for other seabird species more recently). Thus, it seems unlikely that HPAI caused the current rapid rate of decline.

Reply

Warren Goodwin says:
28/04/2024 at 5:57 am

Agree with the current proposal for a change in status based on the genuine rapid rate of population decline, with reduced food availability being a major driver. Indeed, it seems that this species is currently facing the 'perfect storm', brought about by a combination of various unfavourable conditions and stochastic events.

Reply

Monica Stassen says:

A01

28/04/2024 at 5:46 pm

I agree and support the proposal that the African Penguin be uplisted to Critically Endangered.

Reply

Lauren Waller says:

28/04/2024 at 5:55 pm

I agree with the updated assessment and the proposed category (and associated criteria) of Critically Endangered for the African penguin.

Reply

Red List Team (BirdLife International) says:

29/04/2024 at 9:46 am

Many thanks to everyone who has contributed to this discussion. We greatly appreciate the time and effort invested in commenting. **The window for consultation is now closed and we are unable to accept any more comments until 3 May 2024**. We will now analyse and interpret all information, and **we will post a preliminary decision on this species' Red List status on this page on 3 May 2024, when discussions will re-open.**

Reply

Red List Team (BirdLife International) says:

03/05/2024 at 8:53 am

Preliminary proposal

Thanks to all contributors for their comments to this discussion. Based on available information, our preliminary proposal for the 2024 Red List would be to adopt the proposed classifications outlined in the initial forum discussion.

There is now a period for further comments until the final deadline on 13 May 2024, after which the recommended categorisations will be put forward to IUCN.

The final 2024 Red List categories will be published on the BirdLife and IUCN websites in October 2024, following further checking of information relevant to the assessments by both BirdLife and IUCN.

Reply

Mandy Freeman says:

06/05/2024 at 10:03 am

Based on our own observations of the reduced number of African Penguins being admitted for rehabilitation and their state, as well as the ongoing research and monitoring that has been done, Tenikwa Wildlife Rehabilitation Centre would support the proposed recommended IUCN categorisation of the African Penguin to Critically Endangered

Reply

Lisa Nupen says:

06/05/2024 at 3:59 pm

I agree that the African Penguin should be reclassified as critically endangered.

Reply

Alison A. Kock says:

07/05/2024 at 10:02 am

Given the supporting evidence, I agree with the revised evaluation and the suggested classification of Critically Endangered for the African penguin.

Reply

Katta Ludynia says:
08/05/2024 at 9:41 am

I agree with the evaluation and the change to Critically Endangered. As mentioned above, HPAI has caused limited mortality in South Africa between 2018 and 2023 (in total about 500 penguins) which can not explain the overall decline of the species. The mass die-off in Namibia was limited to one island (Halifax Island) and does not explain the dramatic decline on all breeding colonies in Namibia. However, numbers of breeding pairs on Halifax have not recovered from the mortality event in 2019. Other Namibian colonies did not have large mortalities from HPAI and the decline is driven by other factors, including lack of prey, predation and climate change.

Reply

Red List Team (BirdLife International) says:
14/05/2024 at 8:53 am

Many thanks to everyone who has contributed to this discussion. We greatly appreciate the time and effort invested in commenting. **The window for consultation is now closed and we are unable to accept any more comments**. We will analyse and interpret available information, **posting a final decision on this species' Red List status on this page on 20 May 2024**.

Reply

Red List Team (BirdLife International) says:
20/05/2024 at 7:36 am

Recommended categorisation to be put forward to IUCN

The final categorisation for this species has not changed. African Penguin is recommended to be listed as **Critically Endangered** under **Criteria A3bce+4bce**.

Many thanks for everyone who contributed to the 2024.2 GTB Forum process. The final 2024 Red List categories will be published on the BirdLife and IUCN websites in October 2024, following further checking of information relevant to the assessments by both BirdLife and IUCN.

Reply

From: Lauren Waller <lauren@sanccob.co.za>
Sent: Sunday, December 20, 2020 9:50 PM
To: Mark Anderson <ceo@birdlife.org.za>; Du Plessis, Morne <mduplessis@wwf.org.za>; pryan31@gmail.com; Astrid Jarre <Astrid.Jarre@uct.ac.za>; Pierre Pistorius <Pierre.Pistorius@mandela.ac.za>; Pichegru, Lorien (Dr) (Summerstrand Campus South) <lorien.pichegru@mandela.ac.za>; lorien pichegru <lorienp@hotmail.com>; Christina Hagen <christina.hagen@birdlife.org.za>; katta@sanccob.co.za; Hanneline Smit-Robinson <hanneline.smit-robinson@birdlife.org.za>; Lynne Shannon <lynne.shannon@uct.ac.za>; Andrew de Blocq <andrew.deblocq@birdlife.org.za>; Sherley, Richard <R.Sherley@exeter.ac.uk>; Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Cc: Stephen van der Spuy <Stephen@sanccob.co.za>
Subject: Reply from Minister Creecy - Island Closures

Dear All

At the end of a distressing year, here is some positive news for us all.

You'll recall the letter we drafted to Minister Creecy in November 2019 regarding the urgent need for island closures around key African penguin breeding colonies. I've attached it again for ease of reference.

On Friday afternoon, I received the email below as well as letter attached from Minister Creecy and her office.

Minister Creecy has requested that Oceans and Coasts Chief Director Ashley Naidoo, organise a dedicated meeting with those of us from the organisations cited in our letter that engage with the department in the scientific working group meetings.

Thank you so, so much to all of you who worked on and supported this letter and who have led, participated in and supported the crucially important research that informs these conservation measures.

As soon as I hear from Mr Naidoo, I will be in touch again.

Wishing you all a peaceful and safe Christmas and new year ahead

With Warmest Regards
Lauren

SANCCOB
saves seabirds

Dr Lauren Waller (Pr. Nat. Sci.)
Leiden Conservation Fellow
Cell: +27 71 689 6910
PO Box 11116 Bloubergrant 7443 South Africa

From: Liesl Jacobs [mailto:lijacobs@environment.gov.za]
Sent: Friday, 18 December 2020 16:11
To: Lauren Waller
Cc: Stephen van der Spuy; Janine Buitendag; Judy Beaumont
Subject: MCE189652 Letter to Dr Waller

Dear Dr Waller

Please receive the attached letter from Minister Creecy for your attention.
Kindly acknowledge receipt thereof.

Regards

Liesl Jacobs
Assistant Appointment Secretary and Administration
Department of the Environment, Forestry and Fisheries
Ministry
012 399 8515
066 143 8859

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Tel: (012) 399 8743
Private Bag X9052, Cape Town, 8000, Tel: (021) 469 1500, Fax: (021) 465 3362

Ref: EDMS MCE189652

Dr Lauren Waller
The Southern African Foundation for the Conservation of Coastal Birds (SANCCOB)
PO Box 1116
Bloubergrant
CAPE TOWN
7443

Email: lauren@sanccob.co.za
cc: stephen@sanccob.co.za

Dear Dr Waller

PROPOSED FISHING EXCLUSION AROUND AFRICAN PENGUIN COLONIES

Your correspondence dated 1 November 2019 regarding fishing exclusions around African penguin colonies has reference.

Please accept my apologies for the delayed response.

I have noted your submission and the dire situation that the African penguin is currently experiencing is well documented and I note and appreciate the interventions that you are proposing to halt the decline. A number of factors have contributed to the decline of the African penguin including habitat loss, reduced food availability and oil spills. These are highlighted in the African Penguin Biodiversity Management Plan (AP-BMP), as well as in peer-reviewed scientific papers, as stated in your letter.

I am advised that members of the respective organizations cited in your letter have met with Departmental researchers in the scientific working group meetings. I have accordingly requested that the Department's Chief Directorate Oceans and Coasts Research invite the six organisations to a dedicated meeting on Island Closures and the role these can play in African Penguin Conservation. The contact official responsible for this intervention in the Department is Mr. Ashley Naidoo, Chief Director: Oceans and Coasts research.

As a Department we are keen to share information and engage with all views towards improving the management of South Africa's ocean ecosystems, biodiversity and the multiple users it supports.

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 17/12/2020

965

Minister Barbara Creecy
Department of Environment, Forestry and Fisheries
Private Bag X447
Pretoria
0001

01 November 2019

By email and per fshaik@environment.gov.za

Dear Minister Creecy

RE: Fishing exclusions around African Penguin colonies – request for urgent appraisal of mitigation measures to avert current rapid population decline

The African Penguin *Spheniscus demersus* has been listed as Endangered by the IUCN since 2010 with the following justification: *"it is undergoing a very rapid population decline, probably as a result of commercial fisheries and shifts in prey populations. This trend currently shows no sign of reversing, and immediate conservation action is required to prevent further declines"*[1]. Since 1900 we have lost 96% of our African Penguin population and, since the turn of this century the population has decreased by 77%. **If current population trajectories persist then this species will become functionally extinct in the near future**[2].

The African Penguin faces several threats, but the precipitous decline in its population is largely driven by a concomitant decline in its preferred prey, namely sardine and anchovy (Figure 1). Several conservation interventions are underway, as set out in the Biodiversity Management Plan for the species, including mitigating predation impact, improving breeding habitat on islands, the creation of new breeding colonies, plans to mitigate oil spills and disease monitoring. **Spatial protection of their foraging areas during the breeding season was identified as a critical intervention** which led to the initiation of an island closure experiment in 2008.

The experiment was launched by the then Marine and Coastal Management, Department of Environmental Affairs and Tourism to test if the exclusion of purse-seine fishing could benefit penguins. Two colonies each in the Western and Eastern Cape were paired with one being open and the other closed to fishing for 3-yearly cycles (Table 1). The current cycle is coming to an end this year, with a decision due to be made on the outcome of the experiment in December 2019.

Despite the inherent uncertainties in establishing cause and effect in marine ecosystems, **a large body of published scientific evidence demonstrates positive effects of fishing closures on both penguin adults and chicks** (see Addendum A). This is despite trade-offs in the experimental design leading to a suboptimal setup. Therefore, we believe that there is enough strong evidence for the South African government to responsibly close the areas around the six largest breeding colonies (Dassen Is., Robben Is., Stony Point, Dyer Is., St

Croix Is. and Bird Is.), i.e. 90% of the South African breeding population, to purse-seine fishing for an extended period (minimum of 10 years), if not permanently. African Penguin generational periods are ~10 years, meaning that favourable conditions are needed for extended periods for the positive effects to be evident at a population level.

We acknowledge that the fishing industry will be affected by island closures: estimates of total allowable purse-seine catches that will be lost due to closures around Robben and Dassen islands range from 2% to 7%[3], although no associated economic costs are predicted in Algoa Bay[4]. However, this shortfall needs to be weighed up against the high socio-economic value of penguin-based ecotourism[5] and the potential public outcry if no action is taken, particularly when benefits to penguins have been scientifically demonstrated. A recent study for example indicated that total expenditure associated with the Simon's Town colony is approximately R311 million per annum, with the majority coming from international tourists (i.e. 88%), and estimated to be R 6.87 billion over the next 30 years[6].

The existing MPA network including the newly declared Marine Protected Areas, though laudable for other facets of marine conservation, is largely ineffective at protecting penguin habitat during the breeding season (Figure 2). We cannot over-emphasise the dire situation the African Penguin currently finds itself in and without urgent interventions around threats such as food availability, oil spills, and protection of breeding sites, there is a high probability that we may lose Africa's only penguin species. While we do not wish to bypass the current processes around the island closure experiment for the remainder of the year, we urge you to keep in mind the grave situation in which the penguin population finds itself when making the final decision on the experiment. We sincerely hope you will consider declaring permanent closure of areas around the six largest breeding colonies, preferably with a 40 km radius to reflect true penguin foraging ranges, but at least a minimum of 20 km in line with the experimental closure design.

If it would be helpful to meet with you, together with DEFF seabird scientists (with whom we have a wonderful working relationship) to discuss this further, we'd be happy to do so.

Dr Stephen van der Spuy
CEO, SANCCOB

Mark D. Anderson
CEO, BirdLife South Africa

Dr Morné du Plessis
CEO, WWF South Africa

Prof. Peter Ryan
Director, FitzPatrick Institute of African Ornithology

Prof. Astrid Jarre
SA Research Chair in Marine Ecology and Fisheries, University of Cape Town

Prof. Pierre Pistorius
Institute for Coastal and Marine Research, Nelson Mandela University

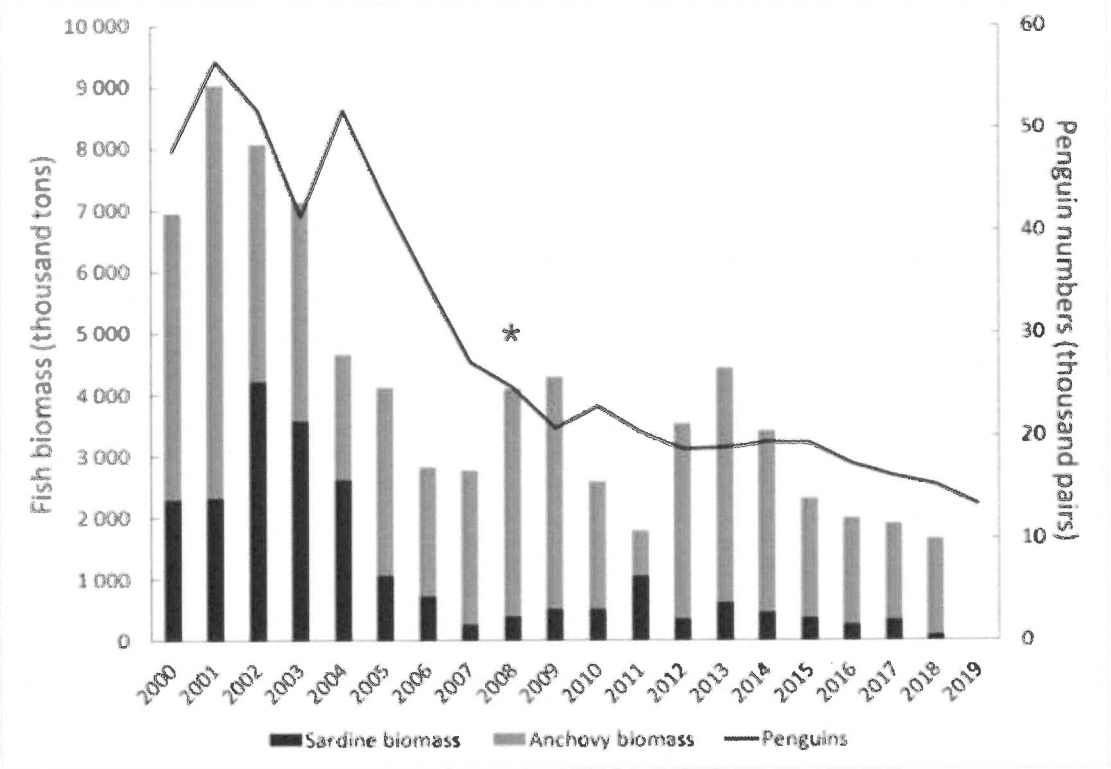

Figure 1. African Penguin breeding numbers plotted against stacked sardine and anchovy biomass in South Africa since 2000. The asterisk denotes the beginning of the closure experiment around the four major colonies.

Table 1. Island closure schedule until present year. Closure is denoted by "x". Key scientific publications shown in last row refer to numbered papers in the reference list.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Dassen Island	x	x					x	x	x			
Robben Island				x	x	x				x	x	x
St Croix Island		x	x	x				x	x	x		
Bird Island					x	x	x				x	x
Key papers			10		11		12	9			2	

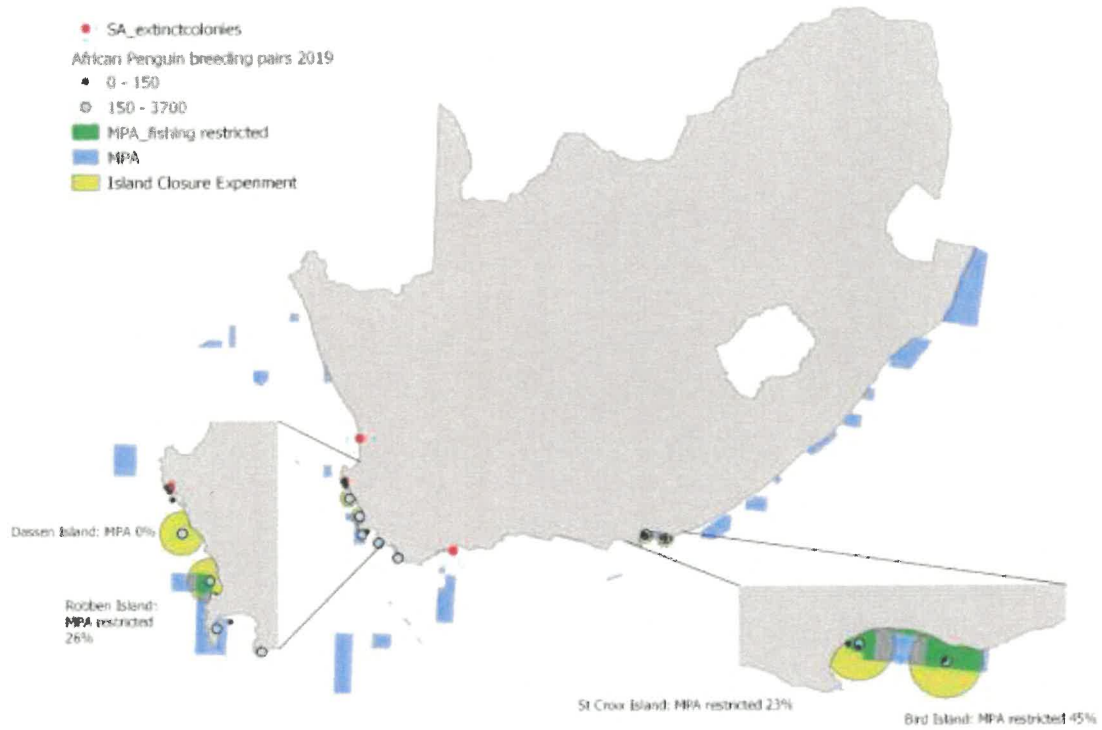

Figure 2. Location of Island Closure Experiment sites (yellow areas) in relation to areas restricted from fishing (green areas) in recently proclaimed Marine Protected Areas (blue areas). Proportion of experimental closures currently restricted from fishing activity within the new MPAs (green areas) are: Dassen Is. – 0 %; Robben Is. – 26 %; St Croix Is. – 23 %; and, Bird Is. – 45 %.

Addendum A

SCIENTIFIC EVIDENCE TO SUPPORT ISLAND CLOSURES

African Penguins are specialised foragers that predominantly feed on sardine and anchovy. The availability of this prey to African Penguins strongly influences the breeding population counts of these birds, the foraging performance of adult penguins, their breeding performance and their chicks' body condition[7-10].

In two regions in South Africa (Western and Eastern Cape), pairs of sites were selected in 2007 to investigate the impacts of purse-seine fishing near colonies on chick-rearing adults' foraging behaviour and their population dynamics[11,12]. While the experiment is still underway, closures to fishing have already resulted in decreased energy expended by breeding birds during foraging[12,13], increased breeding success[2,11] and increased chick condition[2]. These differences have been observed despite concerns with the experimental design including: i) lack of adequate controls - the islands being compared were not necessarily subject to the same environmental conditions[12–14], ii) lack of adequate temporal resolution - closures were short relative to the long lifespan and conservative life history characteristics of penguins, iii) the decline in penguin populations was related to changes in adult survival while the experiments targeted how potential fisheries competition affects breeding[2,11], iv) the spatial extent of the closures not adequately addressing impacts of fishing on the boundaries of the closures, so-called 'fishing the line'[13], and v) insufficient information on non-fishery related fish stock fluctuations. For example, observed positive correlations between catch and some penguin parameters was taken as evidence that fishing does not adversely affect penguins and alternatively may have a positive effect[15]. However, both predators and local fish catches are likely to respond positively to increased biomass of fish around colonies, leading to positive correlation between the two[16–18].

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Workflow Details

233426 Small Pelagic Fisheries-African Penguin Interactions Expert Review Panel Report

Date Initiated:	Initiator:	Current Performer:	Due Date:	Done Date	Workflow Status:
18 July 2023 02:03 PM	Ashley Naidoo	WF: Central Registry	26 July 2023 04:11 PM		Executing

Initiator Comments:
Dear DDG, this is the submission, and recommendations emanating from the Expert Review Panel for the Science associated with the Small Pelagic Fisheries and the African Penguin Conservation. Thank you, Ashley N.

Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
Step 02 - Chief Director	Ashley Naidoo	Forward to DDG	20 July 2023 02:03 PM	18 July 2023 02:05 PM	
Step 02D - CD: Budget & FM	veronica steyn	Funds available	20 July 2023 02:05 PM	20 July 2023 10:23 PM	The report of the panel acknowledged. Funds available for any outstanding remuneration of the panel members subject to compliance with National Treasury approval and directives. Veronica Steyn CD:B&FM
Step 02E - CFO	Andiswa Oyama Jass	Authorised to proceed	24 July 2023 10:23 PM	21 July 2023 08:20 AM	The submission is supported. A. Jass 21/07/2023
Step 03 - O&C Quality Control	Nosiseko Mhlahlo	QA Completed-forward to DDG	25 July 2023 08:20 AM	21 July 2023 08:43 AM	Dear DDG Please see the attached for your assistance. Thanks Nosiseko
Step 04 - Deputy Director-General	Lisolomzi Fikizolo	Recommended	25 July 2023 08:43 AM	21 July 2023 08:51 AM	Dear DG, this is the final report of the International Expert Review Panel - Penguins , with recommendations.
Step 07 - Language Practitioner	Judith Venter	Forward to DG	26 July 2023 08:51 AM	21 July 2023 09:12 AM	DG find attached for your consideration and recommendation. ODG JV
Step 08 - Director-General	Nomfundo Tshabalala	Recommended	25 July 2023 09:12 AM	21 July 2023 01:06 PM	Recommended. Nomfundo Tshabalala. 21/07/2023
Step 08D - Print Documents for DG	Msizi Zondi	Document(s) printed	25 July 2023 01:06 PM	21 July 2023 01:32 PM	
Step 08E - Scan & Attach Signed	Msizi Zondi	Scanned docs attached	25 July 2023 01:32 PM	24 July 2023 04:11 PM	Ministerial Approval with comment of 23

Submission					July 2023 has been uploaded. Please note Minister's comment. ODG - MSIZI
Step 09A - Workflow Complete	Ashley Naidoo	Send to Archive	26 July 2023 04:11 PM	10 August 2023 12:25 PM	
Step 09B - Central Registry	WF: Central Registry		26 July 2023 04:11 PM		

forestry, fisheries
& the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS 233426
Enquiries: Dr Ashley Naidoo
Telephone: 021 493 7300
Mobile: 082 784 7131

MINISTER

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

1. PURPOSE

To request that Minister–

1.1 Note the Report by the International Review Panel of Experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies.

1.2 Grant approval for the policy decisions following the Report from the Panel.

1.2.1 That the limitation of small pelagic fishing adjacent to penguin colonies will henceforth be used by the Department as an appropriate intervention in the conservation and management of the African Penguin. Whilst it is acknowledged that small pelagic fishery limitations do have a benefit to penguins, but it should be noted that these benefits are small relative to the observed decreases in the penguin populations over recent decades.

1.2.2 Furthermore, that fishing limitations around selected penguin colonies are established for the following penguin colonies: Dassen Island, Robben Island, Stoney Point, Dyer Island, St. Croix Island and Bird Island. The fishing limitations are to be implemented for a minimum of ten (10) years with a review after six (6) years of implementation and data collection. The transition to implementing fishing limitations is described in Paragraph 2.10. However, in the absence of penguin colony specific agreements across the fishery and conservation stakeholders on limiting small pelagic fishing,

consideration should be given on the current interim limitations or closures that must continue from 1 August 2023, as the interim limitations are due to end on the 31st of July 2023.

1.3 Approve the implementation of the recommendations for future science from the International Review Panel. These will be implemented in a phased approach depending on funding and resources available with industry and civil society organisations encouraged to contribute to the program.

1.4 Approve that Branches Fisheries Management and Oceans and Coasts develop a communications and stakeholder engagement plan to report at least annually to stakeholders on the implementation of these fishing limitations and other measures implemented as actions in the African Penguin Biodiversity Management Plan.

1.5 Approve that the Panel work is now concluded and that the Panel will be remunerated as per the National Treasury Approved rates at the B1 daily rate scale. Each Panel member will be remunerated for 12 weeks of time and the Chair for 14 weeks. Any actual expenses incurred will be reimbursed in addition to this.

1.6 Note that the Chair and Panel Members are available on a date to be determined to present their Report to Minister and local stakeholders via an online meeting.

1.7 Approve that the Report of the Expert Panel can be distributed to all stakeholders and be made publicly available.

2 BACKGROUND AND DISCUSSION

2.1 South Africa's substantial decrease in the number of adult African Penguins since the mid-2000s is considered to be caused by a number of different drivers including food competition between penguins and the small pelagic purse seine fishery. This fishery overlaps with foraging areas around penguin breeding colonies such as Dassen, Robben, Stony Point, Dyer, St Croix and Bird Islands, which vie for the same sardine and anchovy resources. To further understand this, a study was initiated from 2008 until 2021 to assess the effects of closure or limiting of purse-seine fishing around penguin breeding colonies. The results have been controversial, with different opinions on how to interpret them.

2.2 This prompted the establishment of the Governance Forum in January 2021 to provide a synthesis of the current scientific information relating to fishing closures and African penguin population declines. The Governance Forum (GF) was primarily made up of DFFE scientists from the Branches Oceans & Coasts, Fisheries Management and the South African National Parks (SANParks). The Governance Forum was further supported by the Extended Task Team which incorporated into the GF three representatives each from the small pelagic fishing sector and the civil society conservation sectors. The objective of the Extended Task Team was to propose actions to slow the decline of the African penguin through; (i) exploring overlaps in penguin forage areas and small pelagic fishing; and (ii) developing a science plan to investigate the cause, possible interventions and impact of interventions. No agreement was reached within the Extended Task Team on the possible interventions and their impact. This task was then referred to the Consultative Advisory Forum for Marine Living Resources (CAFMLR) in January 2022.

2.3 The Consultative Advisory Forum for Marine Living Resources was tasked to develop recommendations on limiting small pelagic fishing activities adjacent to penguin colonies. A range of documents and presentations were provided to the CAFMLR and joint recommendations were sought on potential fishing closures. The CAFMLR recommended a compromise between two positions provided by conservation and the fishing industry, through a 50:50 approach using Marxan, a commercially available decision support tool. The other CAFMLR recommendations included, amongst others, the appointment of an international panel of experts to scientifically evaluate the science, that models of intermediate complexity for ecosystems assessments (MICE) be applied to quantify the impacts from other drivers of penguin decline and that there needs to be stronger action and focus on implementation of the African Penguin Biodiversity Management Plan in order to address the most important drivers of penguin decline. The CAFMLR fishing limitation recommendations were not widely accepted by either sector, with both sectors requesting that the Minister appoint an International Panel that would review:

a) quantitative scientific analyses of the Island Closure Experiment (ICE) and subsequent publications to evaluate whether the scientific evidence from the ICE indicates that limiting small pelagic fishing around colonies provides a meaningful improvement to penguin populations.

b) Assess the cost-benefit trade-off of 1) costs to fisheries, versus 2) the proportion of penguin foraging range protected during the breeding season, for different fisheries exclusion scenarios.

2.4 While the processes of the International Panel were underway, the Department implemented precautionary preliminary closures from 1 September 2022 to 31 July 2023.

2.5 A notice was published in the Government Gazette in October 2022 to establish a panel of experts in terms of Section 3A of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The Terms of Reference and the expected scope of work were set out in the schedule to the notice. The Terms of Reference were negotiated across the Small Pelagic Fishing Industry and Conservation Sector representatives. Members of the public were invited to nominate qualified individual persons with relevant expertise and experience, to be considered for appointment as members of the Panel. The following Panel was appointed in December 2022:

- Prof. André Punt (Chair)
- Dr. Ana Parma
- Dr. Éva Plagányi-Lloyd
- Prof. Robert Furness
- Prof Philip Trathan
- Prof. James Sanchirico (added later in 2023 as the Panel required economic sciences expertise).

2.6 The Panel requested information from both the fisheries and conservation sectors before, during and after engagements in March and June 2023. These requests were made based on a substantial amount of pre-reading and preparation before each engagement. In total the Panel reviewed about 200 documents. Additionally, the Panel, especially the Chair, engaged with analysts from the Department, fisheries and conservation sectors to clarify analyses that were needed - often with rapid turn-around times. A further meeting of the local stakeholders and scientists to present and clarify their assertions and assumptions was convened by the DFFE in May. Panel members were observers at this meeting. Oral presentations at the meetings were made by:

- The Consultative Advisory Forum (CAF) for Marine Living Resources
- DFFE's: Fisheries Management; Oceans and Coasts and SANParks
- South African Pelagic Fishing Industry Association (SAPFIA)
- Conservation Sector (SANCCOB – The South Africa foundation for the Conservation of Coastal Birds, BirdLife-SA, EWT – Endangered Wildlife Trust and WWF-SA - World Wildlife Fund for Nature, South Africa)
- Marine Resource Assessment and Management Group of the University of Cape Town
- University of Exeter
- Nelson Mandela University.

The Panel subsequently requested additional information from stakeholders, most of which were provided by means of written responses. During the June meeting, the first two days were open to the stakeholders for further oral presentations, whilst the last three days were closed for panel deliberations. The Panel did call analysts back during the week to clarify aspects or undertake additional analyses.

2.7 The Panel produced its first draft report on the 6th of July 2023. This draft was then edited by the Editor-in-Chief of the African Journal of Marine Science (housed in the Fisheries Management Branch) and the Report was laid out for publication by DFFE Communications. A proof version was sent to the Panel on the 18th of July with final comments expected by the 21st of July. It is expected that the Report will be ready for distribution by the 28th of July.

2.8 The Executive Summary is attached as **Annexure 1** and the draft Full Report is attached as **Annexure 2**. The Panel settled several scientific discussions during their deliberations. While these are summarized in **Annexure 1** – the Executive Summary, a few are highlighted here to motivate the policy recommendations in this submission. Also note that Section 7 of the Full Report summarizes conclusions of the Panel. (Note **Annexure 2** is still in draft low resolution lay out format while awaiting final comment from Panel.)

2.8.1 The Island Closure Experiment (ICE), although with some limitations in scope and observations, showed that limiting small pelagic fishing adjacent to penguin colonies does have benefits to penguins, albeit small relative to the observed decrease in the penguin population (benefits to population annual growth rates range from 0.71% - 1.51% compared to decreases

of 10 to 13% from 2005 to 2022 for West Coast Islands). (This conclusion does not fully include the Algoa Bay Colonies of St. Croix and Bird Islands owing to the limited observations that were possible.)

2.8.2 There may be additional benefits of fishing limitations to penguins that could not have been observed in the design of the ICE, e.g. benefits to juvenile and adult survival.

2.8.3 Fishing limitations in years of above-average small pelagic fish abundance are likely to offer a smaller benefit to penguin reproductive success.

2.8.4 Closures should be implemented for periods of up to 10 years. This will allow for a fuller assessment of benefits to the adult population.

2.8.5 Fishery costs of closure or fishing limitations as presently estimated are likely to be an overestimation. Current methods offered to calculate costs to the fishing industry can however be used to evaluate the relative impact of different closure options.

2.8.6 Additional scientific investigations and observations are needed. The Panel's recommendations in this regard will be implemented in a phased manner, including the development of Models of Intermediate Complexity for Ecosystem assessments (MICE), improving penguin monitoring and the assessment of other contributing factors to the decline in penguin populations.

2.8.7 The Panel has provided a methodology to evaluate different fishing limitation options. These methods can be used to assess trade-offs of existing and new fishing limitation proposals.

2.9 Based on the above and in light of the dire state of the African penguin population it is recommended that fishing limitations be employed as one of the interventions to support the conservation of this species. Fishing limitations are then proposed for Dassen Island, Robben Island, Stoney Point, Dyer Island, St. Croix Island and Bird Island. There are currently interim fishing limitations at these islands that were implemented from September 2022.

2.10 The interim fisheries limitations or closures are set to expire at the end of July 2023. These should continue until the end of the current fishing season unless there are other colony-specific agreements from the representatives from the Small Pelagic Fishing Industry and Civil Society Conservation Sectors. The remaining months until the end of the current small pelagic fishing season will be used to evaluate fishing limitation options using the trade-off methods suggested by the Panel to propose fishing limitations for colonies where there is no agreement across the Sectors. If no alternate fishing limitation proposals are concluded by the start of the

2024 Small Pelagic Fishing Season (January 15th, 2024) the current interim fishing limitations will continue until the end of the 2033 Fishing Season, with a review in 2030 after six years of implementation from the start of the 2024 fishing season. Fishing limitations can be additionally reviewed during years of higher-than-average abundance of small pelagic fish stocks. The definition and method to calculate this average including the number of years and valid data points are to be determined by the Fisheries Management Branch within the 2023/24 year. Similarly, the Operational Management Plan for the Sardine and Anchovy can be adapted to acknowledge models of the penguin population, including at low fish biomass levels and at suitable spatial scales. Any decision to alter fishing limitations must be a joint recommendation from the Branch Oceans & Coasts and the Branch Fisheries Management. The Interim Closures Maps are attached as **Annexure 5**.

2.11 Notably, during the June Panel meeting the Chair encouraged the representatives of the fishing and conservation sectors to find each other on fishing limitation and benefit discussions. There was some movement towards agreement during a dedicated negotiation time for possible fishing limitations at Robben Island, Bird Island and for the St. Croix Island. If Sector representatives can confirm these, these agreed fishing limitations can be implemented immediately. Agreed fishing limitations will be formalised through the Deputy Directors General of the Branches Oceans and Coasts and the Fisheries Management. Fishing limitations will be implemented through permit conditions as is the case with current interim fishing limitations.

3 IMPLICATIONS

Personnel:	None.
Financial:	Remuneration and reimbursement costs for the Panel, including local travel and associated costs to major airports and meals during travel are estimated at between R 1 500 000 and R 1 800 000. Approval from National Treasury to use the B1 rate is attached as **Annexure 3** and the 2022/23 rates are attached as **Annexure 4**.
Communication:	The Expert Panel report will be made available via the DFFE Website.
Legal:	None.

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

4 OTHER BRANCHES/ CHIEF DIRECTORATES CONSULTED

4.1 The Branch: Oceans & Coasts, Branch: Fisheries Management, SANBI and SANParks.

5. RECOMMENDATIONS

It is recommended that Minister —

5.1 Note the Report by the International Review Panel of Experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies.

5.2 Request approval for policy decisions following the Report from the Panel.

5.1.1 That the limitation of small pelagic fishing adjacent to penguin colonies will henceforth be used by the Department as an appropriate intervention in the conservation and management of the African Penguin. Whilst it is acknowledged that small pelagic fishery limitations do have a benefit to penguins, but it should be noted that these benefits are small relative to the observed decreases in the penguin populations over recent decades.

5.1.2 Furthermore, that fishing limitations around selected penguin colonies are established for the following penguin colonies: Dassen Island, Robben Island, Stoney Point, Dyer Island, St. Croix Island and Bird Island. The fishing limitations are to be implemented for a minimum of ten (10) years with a review after six (6) years of implementation and data collection. The transition to implementing fishing limitations is described in Paragraph 2.10. However, in the absence of penguin colony specific agreements across the fishery and conservation stakeholders on limiting small pelagic fishing, consideration should be given on the current interim limitations or closures that must continue from 1 August 2023, as the interim limitations are due to end on the 31st of July 2023.

5.2 Approve the implementation of the recommendations for future science from the International Review Panel. These will be implemented in a phased approach depending on funding and resources available, of which both the industry and the civil society organisations will be encouraged to contribute to the program.

5.3 Approve that Branches Fisheries Management and Oceans and Coasts develop a communications and stakeholder engagement plan to report at least annually to stakeholders

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on the implementation of these fishing limitations and other measures implemented as actions in the African Penguin Biodiversity Management Plan.

5.4 Approve that the Panel work is now concluded and that the Panel will be remunerated as per the National Treasury Approved rates at the B1 daily rate scale. Each Panel member will be remunerated for 12 weeks of time and the Chair for 14 weeks. Any actual expenses incurred will be reimbursed in addition to this.

5.5 Note that the Chair and Panel Members are available on a date to be determined to present their Report to Minister and local stakeholders via an online meeting.

5.6 Approve that the Report of the Expert Panel can be distributed to all stakeholders and be made publicly available.

CHIEF DIRECTOR: OCEANS & COASTS RESEARCH
DATE:

RECOMMENDED/RECOMMENDED AS AMENDED/NOT RECOMMENDED

DEPUTY DIRECTOR-GENERAL: OCEANS AND COASTS
DATE:

RECOMMENDED/~~RECOMMENDED AS AMENDED/NOT RECOMMENDED~~

DIRECTOR-GENERAL
DATE: 21/07/2023

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

6. RECOMMENDATIONS

It is recommended that Minister —

5.1 Note the Report by the International Review Panel of Experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies.

NOTED/NOTED WITH COMMENT

5.2 Request approval for policy decisions following the Report from the Panel.

5.2.1 That the limitation of small pelagic fishing adjacent to penguin colonies will henceforth be used by the Department as an appropriate intervention in the conservation and management of the African Penguin. Whilst it is acknowledged that small pelagic fishery limitations do have a benefit to penguins, but it should be noted that these benefits are small relative to the observed decreases in the penguin populations over recent decades.

5.2.2 Furthermore, that fishing limitations around selected penguin colonies are established for the following penguin colonies: Dassen Island, Robben Island, Stoney Point, Dyer Island, St. Croix Island and Bird Island. The fishing limitations are to be implemented for a minimum of ten (10) years with a review after six (6) years of implementation and data collection. The transition to implementing fishing limitations is described in Paragraph 2.10. However, in the absence of penguin colony specific agreements across the fishery and conservation stakeholders on limiting small pelagic fishing, consideration should be given on the current interim limitations or closures that must continue from 1 August 2023, as the interim limitations are due to end on the 31st of July 2023.

APPROVED/APPROVED AS AMENDED/NOT APPROVED

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

5.3 Approve the implementation of the recommendations for future science from the International Review Panel. These will be implemented in a phased approach depending on funding and resources available, of which both the industry and the civil society organisations will be encouraged to contribute to the program.

APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.4 Approve that Branches Fisheries Management and Oceans and Coasts develop a communications and stakeholder engagement plan to report at least annually to stakeholders on the implementation of these fishing limitations and other measures implemented as actions in the African Penguin Biodiversity Management Plan.

APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.5 Approve that the Panel work is now concluded and that the Panel will be remunerated as per the National Treasury Approved rates at the B1 daily rate scale. Each Panel member will be remunerated for 12 weeks of time and the Chair for 14 weeks. Any actual expenses incurred will be reimbursed in addition to this.

APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.6 Note that the Chair and Panel Members are available on a date to be determined to present their Report to Minister and local stakeholders via an online meeting.

NOTED/NOTED WITH COMMENT

5.7 Approve that the Report of the Expert Panel can be distributed to all stakeholders and be made publicly available.

APPROVED/APPROVED AS AMENDED/NOT APPROVED

MS B D CREECY
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT
DATE:

REPORT OF THE INTERNATIONAL REVIEW PANEL REGARDING FISHING CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES AND DECLINES IN THE PENGUIN POPULATION

EXECUTIVE SUMMARY

- The population of African penguins breeding in South Africa has been declining rapidly (approximately 8% per annum since 2005) and is consequently at a high risk of extinction in the wild in the coming decades. It is essential to understand and mitigate the primary factors leading to this decline.
- Considerable effort has been made by the fishing and conservation sectors in collaboration with government to understand the causes of the decline and how they might be mitigated. The Panel commends South Africa on its world-leading efforts to underpin challenging utilisation-conservation policy decisions with sound science.
- Implementation of closures managed within the Island Closure Experiment (ICE) aimed to understand whether reducing fishing around islands with penguin breeding colonies would help to reduce the current rate of decline. This internationally-recognised experiment involved implementing an alternating pattern of closures around four island breeding colonies on the South African west and south coasts. It is now complete and, notwithstanding the difficulties implementing the experiment, has been successful in demonstrating for the west colonies of Dassen and Robben islands (those more intensively studied within the ICE), that excluding fishing around island breeding colonies is likely to reduce the rate of decline in the population to a small extent, mediated through improvements in reproductive success. Excluding purse-seine fishing around island breeding colonies is also likely to have other positive benefits for penguin conservation, such as facilitating higher adult survival, but the ICE was not designed to estimate such effects.
- The Panel recognises that closure of purse-seine fisheries around penguin colonies will provide only a part of the measures required to slow/reverse the population decline of African penguins.
- There is a trade-off amongst maximising benefits to penguins, minimising the costs to the fishing industry, and having a reliable basis to quantify the effects of closures (including no closures) on the penguin recovery rate. The trade-off among closure options is a policy decision related to conservation, economic and social goals and objectives for South Africa. This report outlines some aspects that could form part of a decision-making framework to identify the closure options that will provide the best outcomes for penguins given some level of cost to the fishing industry.
- The effects of alternative fishery closure designs differ amongst the island breeding colonies, in terms of reducing the rate of decline, costs to the fishing industry, and social impacts. Hence, advice related to the effects of possible closure options is presented by island breeding colony, and not simply at the regional or national level; decisions on closures should also be made by colony, taking account of the unique aspects of the fishery and threats at each colony.
- The impacts to the fishing industry can be evaluated using an "opportunity-based model" (OBM) that predicts the proportion of the catch of pelagic fish in closure areas that cannot be "replaced" by fishing outside these areas, together with a Social Accounting Matrix

(SAM) model that converts "lost catch" into economic impacts (loss of GDP and jobs) on the fishery, suppliers of goods and services to the fishing industry, and the broader economy. The OBM and SAM model can be used to rank closure options in terms of economic effects but the OBM likely overestimates the potential lost opportunities outside the closed area on a given day. The Panel remains concerned about: (i) the lack of information on how the closures impact fishing costs and fishing behaviour; (ii) the ability of the SAM model to adequately attribute impacts at the scale of fishing communities; and (iii) that there are social impacts that are not estimated using the SAM, but are important to consider in any trade-off analysis.

- Evidence suggests that catches from within closure areas will be more difficult to replace around Dyer Island and St Croix Island than around the other remaining five colonies with important breeding populations. Evidence also suggests that levels of lost catch can be reduced, if closures around penguin preferred habitats are well designed.
- The Panel identified (in this report) recommendations related to future monitoring of penguin colonies and research to understand the effects of closures on the change in penguin numbers and costs to the fishing industry and local communities.
- Further attempts were made to identify consensus closure options among the fishing and conservation sectors during the Panel meeting and ongoing efforts to identify such options are encouraged, particularly as closures may need to be adjusted given the results of future monitoring.
- The Panel strongly encouraged continued communication, and collaboration, with transparency of research data and analyses, as means to build trust and strengthen these discussions. Working collaboratively will further enhance the effectiveness and social acceptability of management measures and decisions aimed at mitigating the decline of the African penguin.

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MINISTRY: FINANCE
REPUBLIC OF SOUTH AFRICA

Private Bag X115, Pretoria, 0001 Tel: +27 12 323 8911 Fax: +27 12 323 3262
P O Box 29, Cape Town 8000 Tel +27 21 464 6100 Fax +27 21 461 2934
Website : www.treasury.gov.za , email : minreg@treasury.gov.za

Ref: M3/15/40(1308/2022)

Hon. Ms Barbara Creecy, MP
Minister of Forestry, Fisheries and the Environment
Private Bag X447
PRETORIA
0001

Dear Minister Creecy,

REMUNERATION RATES FOR THE APPOINTED OF MEMBERS TO MINISTERIAL TASK TEAMS AND PANELS OF EXPERTS THAT ARE ESTABLISHED IN TERMS OF SECTION 3A OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998)

In my letter dated 27 July 2022 in which I stated that an appropriate basis for the recommendation of a remuneration category for any other forum or committee be established in terms of Section 3A of the National Environmental Management Act, 1998 (NEMA) must be established through a Central Evaluation Committee process to give me a basis to consider requests for approval of remuneration categories.

It has come to my attention that you intend establishing several ministerial task teams and panels of experts to execute functions as intended in Section 3A of the NEMA. To avoid additional administrative tasks in our own heavy schedules, I was advised that my concurrence to a single remuneration category for all these task teams and panels would be more productive.

I hereby give my consent to the determination of a single remuneration category, namely category B1, for members of the ministerial task teams and panels of experts to be appointed in terms of Section 3A(c) of the National Environmental Management Act, 1998, (Act No. 107 of 1998). Any deviation from this consent would have to be specifically and individually follow the CEC process which would give me also a basis to consider requests for approval of alternative remuneration categories.

The B1-category rates would be as follows:

Category Classification	**B1** (Part-time members)		
Remuneration		**2019 rates**	
Position	**Full-time rate** *(for comparison purposes only)*	**Meeting rate**	
	Per annum	Per day	Per hour
Chairperson 1)	R1 087 879	R4 317	R540
Members	R660 087	R2 619	R327

Expenditure incurred in respect of this concurrence is to be accommodated within the budget allocation of the Department of Forestry, Fisheries and the Environment.

I trust that you will find the above in order.

Yours sincerely,

ENOCH GODONGWANA
MINISTER OF FINANCE
DATE: 11/01/2023

national treasury
Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

Private Bag X115, Pretoria, 0001 • 40 Church Square, PRETORIA, 0002 • Tel: +27 12 315 5111, Fax: +27 12 406 9055 • www.treasury.gov.za

FROM: Mr JC Krüger **Ref:** FP20-8/6/2/2/4/1/001 **Tel:** 012 315 5219 **e-mail:** Chris.Kruger@treasury.gov.za

TO ALL –
ACCOUNTING OFFICERS OF CONSTITUTIONAL INSTITUTIONS, AND NATIONAL AND PROVINCIAL DEPARTMENTS, HEADS OF PROVINCIAL TREASURIES AND ACCOUNTING AUTHORITIES OF PUBLIC ENTITIES

2022 REMUNERATION LEVELS: SERVICE BENEFIT PACKAGES FOR OFFICE-BEARERS OF CERTAIN STATUTORY AND OTHER INSTITUTIONS

1. The Minister of Finance has approved a cost-of-living adjustment of 3,0 per cent as indicated in Annexure A with effect from **1 April 2022.**
2. The relevant category levels provide for all-inclusive flexible remuneration packages (inclusive of service benefits). Full-time members' remuneration packages must be structured in accordance with the principles of the *Senior Management Service* (SMS)[1]*. In structuring the packages, office-bearers should make due provision for pension and medical aid and must also ensure that taxation rules governing the structuring of salary packages are complied with. The indicated rates are sitting fees and exclusive of payments in respect of preparation, research and travelling (to and from meeting venues) time. The rate per day is the maximum allowable remuneration in any 24-hour day irrespective of the number of boards/councils and/or committees non-official members serve on.
3. The relevant executive authorities also need to approve an increase in the remuneration of office-bearers. These authorities therefore need to ensure that the increased remuneration is affordable, before granting such approval. The extent to which the authorities wish to apply the adjusted remuneration should be based on the evaluation of work done by the office-bearers of the relevant institution.
4. Current VAT law requires non-executive directors (NEDs) of companies to register for and charge VAT in respect of any director's fees earned for services rendered as a non-executive director. **Kindly note that the above rates are VAT inclusive.**

   The value of the fees must, however, exceed the compulsory VAT registration threshold of R1 million in any 12-month consecutive period but NEDs can voluntarily register for VAT as well[2].

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[1] The SMS handbook is compiled by and available from the Department of Public Service and Administration.
[2] Further details on the remuneration of Non-executive Directors is available on http://www.sars.gov.za/Media/MediaReleases/Pages/14-February-2017---Non-Executive-Directors-of-Companies-must-register-for-VAT.aspx.

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2022 REMUNERATION OF NON-OFFICIAL MEMBERS: COMMISSIONS & COMMITTEES OF INQUIRY, AND AUDIT COMMITTEES

5. Funds for inflation-related increases in expenditure and salary adjustments for 2022/23 have been made available in the MTEF and were allocated to departments, public entities and institutions. Any additional expenditure that could arise by implementing this approval must be defrayed from existing budget allocations of departments/public entities/institutions.
6. *Employees of organs of State serving as office-bearers on public entities/institutions are not entitled to additional remuneration.*

GH MANACK

GOOLAM MANACK
(CHIEF DIRECTOR: PUBLIC ENTITIES GOVERNANCE UNIT)
for DIRECTOR-GENERAL: NATIONAL TREASURY
DATE 12/01/2023

national treasury
Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

Private Bag X115, Pretoria, 0001 • 40 Church Square, PRETORIA, 0002 • Tel: +27 12 315 5111, Fax: +27 12 406 9055 • www.treasury.gov.za

ANNEXURE A (3,0%)

CONVERSION KEY: WITH EFFECT FROM 1 APRIL 2022

Category, sub-category and official designation	2018/19 remuneration					2022/23 remuneration				
	Comparative full-time p.a.	Part-time				Comparative full-time p.a.	Part-time			
		Meeting fee per:		Board fee per annum			Meeting fee per:		Board fee per annum	
		day	hour	5%	8%		day	hour	5%	8%
CATEGORY S										
Chairperson	**1 398 373**	5 549	694	**69 919**	**111 870**	**1 440 324**	5 716	714	72 016	115 226
Vice-chairperson	**1 186 777**	4 709	589	59 339	94 942	**1 222 380**	4 851	606	61 119	97 790
Member	**1 087 879**	4 317	540	54 394	87 030	**1 120 515**	4 446	556	56 026	89 641
CATEGORY A										
Sub-category A1										
Chairperson	**1 317 874**	5 230	654	65 894	105 430	**1 357 410**	5 387	673	67 871	108 593
Vice-chairperson	**1 120 078**	4 445	556	56 004	89 606	**1 153 680**	4 578	572	57 684	92 294
Member	**979 781**	3 888	486	48 989	78 382	**1 009 173**	4 005	501	50 459	80 734
Sub-category A2										
Chairperson	**1 170 677**	4 646	581	58 534	93 654	**1 205 796**	4 785	598	60 290	96 464
Vice-chairperson	**993 580**	3 943	493	49 679	79 679	**1 023 387**	4 061	508	51 169	81 871
Member	**924 582**	3 669	459	46 229	73 967	**952 320**	3 779	472	47 616	76 186
CATEGORY B										
Sub-category B1										
Chairperson	**1 087 879**	4 317	540	54 394	87 030	**1 120 515**	4 446	556	56 026	89 641
Vice-chairperson	**952 181**	3 778	472	47 609	76 175	**980 745**	3 892	486	49 037	78 460
Member	**660 087**	2 619	327	33 004	52 807	**679 890**	2 698	337	33 995	54 391
Sub-category B2										
Chairperson	**979 781**	3 888	486	48 989	78 382	**1 009 173**	4 005	501	50 459	80 734
Vice-chairperson	**689 986**	2 738	342	34 499	55 199	**710 685**	2 820	353	35 534	56 855
Member	**600 288**	2 382	298	30 014	48 023	**618 297**	2 454	307	30 915	49 464

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2022 REMUNERATION OF NON-OFFICIAL MEMBERS: COMMISSIONS & COMMITTEES OF INQUIRY, AND AUDIT COMMITTEES

ANNEXURE A (3,0%)

CONVERSION KEY: WITH EFFECT FROM 1 APRIL 2022

Category, sub-category and official designation	2018/19 remuneration					2022/23 remuneration				
	Comparative full-time p.a.	Part-time				Comparative full-time p.a.	Part-time			
		Meeting fee per:		Board fee per annum			Meeting fee per:		Board fee per annum	
		day	hour	5%	8%		day	hour	5%	8%
CATEGORY C										
Sub-category C1										
Chairperson	**928 964**	3 686	461	46 448	74 317	**956 832**	3 797	475	47 842	76 547
Vice-chairperson	**628 553**	2 494	312	31 428	50 284	**647 409**	2 569	321	32 370	51 793
Member	**531 497**	2 109	264	26 575	42 520	**547 443**	2 172	272	27 372	43 795
Sub-category C2										
Chairperson	**663 215**	2 632	329	33 161	53 057	**683 112**	2 711	339	34 156	54 649
Vice-chairperson	**566 160**	2 247	281	28 308	45 293	**583 146**	2 314	289	29 157	46 652
Member	**501 456**	1 990	249	25 073	40 116	**516 501**	2 050	256	25 825	41 320
CATEGORY D										
Sub-category D1										
Chairperson	**531 497**	2 109	264	26 575	42 520	**547 443**	2 172	272	27 372	43 795
Vice-chairperson	**482 969**	1 917	240	24 148	38 637	**497 457**	1 974	247	24 873	39 797
Member	**439 062**	1 742	218	21 953	35 125	**452 235**	1 795	224	22 612	36 179
Sub-category D2										
Chairperson	**501 456**	1 990	249	25 073	40 116	**516 501**	2 050	256	25 825	41 320
Vice-chairperson	**450 617**	1 788	224	22 531	36 049	**464 136**	1 842	230	23 207	37 131
Member	**420 576**	1 669	209	21 029	33 646	**433 194**	1 719	215	21 660	34 656
CATEGORY E										
Sub-category E1										
Chairperson	**432 130**	1 715	214	21 606	34 570	**445 095**	1 766	221	22 255	35 608
Vice-chairperson	**395 156**	1 568	196	19 758	31 612	**407 010**	1 615	202	20 351	32 561
Member	**360 493**	1 431	179	18 025	28 839	**371 307**	1 473	184	18 565	29 705
Sub-category E2										
Chairperson	**409 021**	1 623	203	20 451	32 722	**421 293**	1 672	209	21 065	33 703
Vice-chairperson	**369 737**	1 467	183	18 487	29 579	**380 829**	1 511	189	19 041	30 466
Member	**328 141**	1 302	163	16 407	26 251	**337 986**	1 341	168	16 899	27 039

Annexure 5

Interim Fishing Limitations or Closures Implemented from 1 September 2022

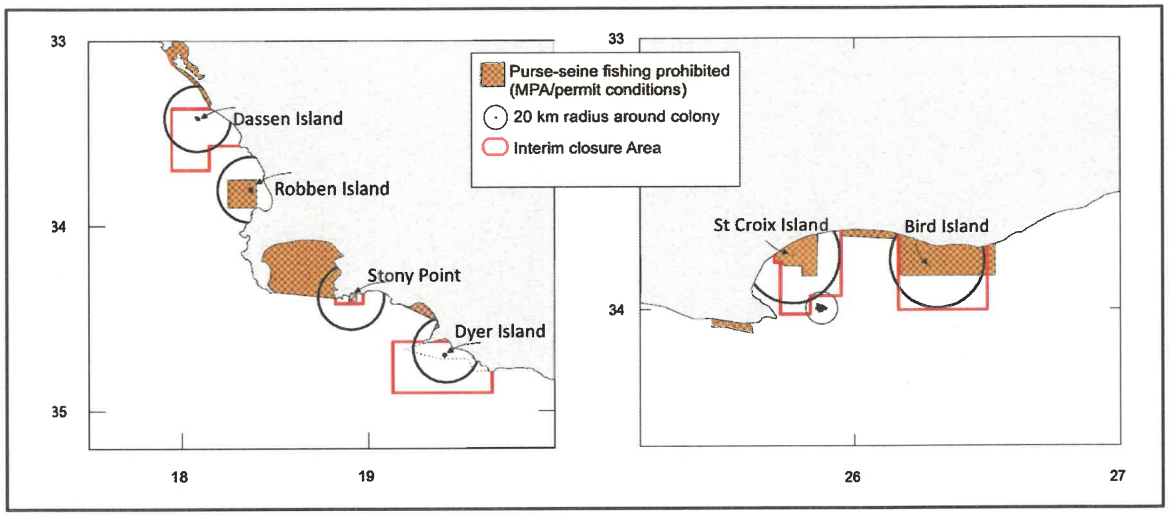

Figure 1.7. from the Expert Panel report showing Interim closures to fishing (red polygons) as currently implemented. These closures have been implemented since September 2022. Vessels <26m in length are allowed to fish in the offshore area (outside the red dotted line) of Dyer Island.

forestry, fisheries
& the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS 233426
Enquiries: Dr Ashley Naidoo
Telephone: 021 493 7300
Mobile: 082 784 7131

MINISTER

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

1. **PURPOSE**

To request that Minister-

1.1 Note the Report by the International Review Panel of Experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies.

1.2 Grant approval for the policy decisions following the Report from the Panel.

1.2.1 That the limitation of small pelagic fishing adjacent to penguin colonies will henceforth be used by the Department as an appropriate intervention in the conservation and management of the African Penguin. Whilst it is acknowledged that small pelagic fishery limitations do have a benefit to penguins, but it should be noted that these benefits are small relative to the observed decreases in the penguin populations over recent decades.

1.2.2 Furthermore, that fishing limitations around selected penguin colonies are established for the following penguin colonies: Dassen Island, Robben Island, Stoney Point, Dyer Island, St. Croix Island and Bird Island. The fishing limitations are to be implemented for a minimum of ten (10) years with a review after six (6) years of implementation and data collection. The transition to implementing fishing limitations is described in Paragraph 2.10. However, in the absence of penguin colony specific agreements across the fishery and conservation stakeholders on limiting small pelagic fishing,

consideration should be given on the current interim limitations or closures that must continue from 1 August 2023, as the interim limitations are due to end on the 31st of July 2023.

1.3 Approve the implementation of the recommendations for future science from the International Review Panel. These will be implemented in a phased approach depending on funding and resources available with industry and civil society organisations encouraged to contribute to the program.

1.4 Approve that Branches Fisheries Management and Oceans and Coasts develop a communications and stakeholder engagement plan to report at least annually to stakeholders on the implementation of these fishing limitations and other measures implemented as actions in the African Penguin Biodiversity Management Plan.

1.5 Approve that the Panel work is now concluded and that the Panel will be remunerated as per the National Treasury Approved rates at the B1 daily rate scale. Each Panel member will be remunerated for 12 weeks of time and the Chair for 14 weeks. Any actual expenses incurred will be reimbursed in addition to this.

1.6 Note that the Chair and Panel Members are available on a date to be determined to present their Report to Minister and local stakeholders via an online meeting.

1.7 Approve that the Report of the Expert Panel can be distributed to all stakeholders and be made publicly available.

2 BACKGROUND AND DISCUSSION

2.1 South Africa's substantial decrease in the number of adult African Penguins since the mid-2000s is considered to be caused by a number of different drivers including food competition between penguins and the small pelagic purse seine fishery. This fishery overlaps with foraging areas around penguin breeding colonies such as Dassen, Robben, Stony Point, Dyer, St Croix and Bird Islands, which vie for the same sardine and anchovy resources. To further understand this, a study was initiated from 2008 until 2021 to assess the effects of closure or limiting of purse-seine fishing around penguin breeding colonies. The results have been controversial, with different opinions on how to interpret them.

2.2 This prompted the establishment of the Governance Forum in January 2021 to provide a synthesis of the current scientific information relating to fishing closures and African penguin population declines. The Governance Forum (GF) was primarily made up of DFFE scientists from the Branches Oceans & Coasts, Fisheries Management and the South African National Parks (SANParks). The Governance Forum was further supported by the Extended Task Team which incorporated into the GF three representatives each from the small pelagic fishing sector and the civil society conservation sectors. The objective of the Extended Task Team was to propose actions to slow the decline of the African penguin through; (i) exploring overlaps in penguin forage areas and small pelagic fishing; and (ii) developing a science plan to investigate the cause, possible interventions and impact of interventions. No agreement was reached within the Extended Task Team on the possible interventions and their impact. This task was then referred to the Consultative Advisory Forum for Marine Living Resources (CAFMLR) in January 2022.

2.3 The Consultative Advisory Forum for Marine Living Resources was tasked to develop recommendations on limiting small pelagic fishing activities adjacent to penguin colonies. A range of documents and presentations were provided to the CAFMLR and joint recommendations were sought on potential fishing closures. The CAFMLR recommended a compromise between two positions provided by conservation and the fishing industry, through a 50:50 approach using Marxan, a commercially available decision support tool. The other CAFMLR recommendations included, amongst others, the appointment of an international panel of experts to scientifically evaluate the science, that models of intermediate complexity for ecosystems assessments (MICE) be applied to quantify the impacts from other drivers of penguin decline and that there needs to be stronger action and focus on implementation of the African Penguin Biodiversity Management Plan in order to address the most important drivers of penguin decline. The CAFMLR fishing limitation recommendations were not widely accepted by either sector, with both sectors requesting that the Minister appoint an International Panel that would review:

a) quantitative scientific analyses of the Island Closure Experiment (ICE) and subsequent publications to evaluate whether the scientific evidence from the ICE indicates that limiting small pelagic fishing around colonies provides a meaningful improvement to penguin populations.

b) Assess the cost-benefit trade-off of 1) costs to fisheries, versus 2) the proportion of penguin foraging range protected during the breeding season, for different fisheries exclusion scenarios.

2.4 While the processes of the International Panel were underway, the Department implemented precautionary preliminary closures from 1 September 2022 to 31 July 2023.

2.5 A notice was published in the Government Gazette in October 2022 to establish a panel of experts in terms of Section 3A of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The Terms of Reference and the expected scope of work were set out in the schedule to the notice. The Terms of Reference were negotiated across the Small Pelagic Fishing Industry and Conservation Sector representatives. Members of the public were invited to nominate qualified individual persons with relevant expertise and experience, to be considered for appointment as members of the Panel. The following Panel was appointed in December 2022:

- Prof. André Punt (Chair)
- Dr. Ana Parma
- Dr. Éva Plagányi-Lloyd
- Prof. Robert Furness
- Prof Philip Trathan
- Prof. James Sanchirico (added later in 2023 as the Panel required economic sciences expertise).

2.6 The Panel requested information from both the fisheries and conservation sectors before, during and after engagements in March and June 2023. These requests were made based on a substantial amount of pre-reading and preparation before each engagement. In total the Panel reviewed about 200 documents. Additionally, the Panel, especially the Chair, engaged with analysts from the Department, fisheries and conservation sectors to clarify analyses that were needed - often with rapid turn-around times. A further meeting of the local stakeholders and scientists to present and clarify their assertions and assumptions was convened by the DFFE in May. Panel members were observers at this meeting. Oral presentations at the meetings were made by:

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

- The Consultative Advisory Forum (CAF) for Marine Living Resources
- DFFE's: Fisheries Management; Oceans and Coasts and SANParks
- South African Pelagic Fishing Industry Association (SAPFIA)
- Conservation Sector (SANCCOB – The South Africa foundation for the Conservation of Coastal Birds, BirdLife-SA, EWT – Endangered Wildlife Trust and WWF-SA - World Wildlife Fund for Nature, South Africa)
- Marine Resource Assessment and Management Group of the University of Cape Town
- University of Exeter
- Nelson Mandela University.

The Panel subsequently requested additional information from stakeholders, most of which were provided by means of written responses. During the June meeting, the first two days were open to the stakeholders for further oral presentations, whilst the last three days were closed for panel deliberations. The Panel did call analysts back during the week to clarify aspects or undertake additional analyses.

2.7 The Panel produced its first draft report on the 6th of July 2023. This draft was then edited by the Editor-in-Chief of the African Journal of Marine Science (housed in the Fisheries Management Branch) and the Report was laid out for publication by DFFE Communications. A proof version was sent to the Panel on the 18th of July with final comments expected by the 21st of July. It is expected that the Report will be ready for distribution by the 28th of July.

2.8 The Executive Summary is attached as **Annexure 1** and the draft Full Report is attached as **Annexure 2**. The Panel settled several scientific discussions during their deliberations. While these are summarized in **Annexure 1** – the Executive Summary, a few are highlighted here to motivate the policy recommendations in this submission. Also note that Section 7 of the Full Report summarizes conclusions of the Panel. (Note **Annexure 2** is still in draft low resolution lay out format while awaiting final comment from Panel.)

2.8.1 The Island Closure Experiment (ICE), although with some limitations in scope and observations, showed that limiting small pelagic fishing adjacent to penguin colonies does have benefits to penguins, albeit small relative to the observed decrease in the penguin population (benefits to population annual growth rates range from 0.71% - 1.51% compared to decreases

of 10 to 13% from 2005 to 2022 for West Coast Islands). (This conclusion does not fully include the Algoa Bay Colonies of St. Croix and Bird Islands owing to the limited observations that were possible.)

2.8.2 There may be additional benefits of fishing limitations to penguins that could not have been observed in the design of the ICE, e.g. benefits to juvenile and adult survival.

2.8.3 Fishing limitations in years of above-average small pelagic fish abundance are likely to offer a smaller benefit to penguin reproductive success.

2.8.4 Closures should be implemented for periods of up to 10 years. This will allow for a fuller assessment of benefits to the adult population.

2.8.5 Fishery costs of closure or fishing limitations as presently estimated are likely to be an overestimation. Current methods offered to calculate costs to the fishing industry can however be used to evaluate the relative impact of different closure options.

2.8.6 Additional scientific investigations and observations are needed. The Panel's recommendations in this regard will be implemented in a phased manner, including the development of Models of Intermediate Complexity for Ecosystem assessments (MICE), improving penguin monitoring and the assessment of other contributing factors to the decline in penguin populations.

2.8.7 The Panel has provided a methodology to evaluate different fishing limitation options. These methods can be used to assess trade-offs of existing and new fishing limitation proposals.

2.9 Based on the above and in light of the dire state of the African penguin population it is recommended that fishing limitations be employed as one of the interventions to support the conservation of this species. Fishing limitations are then proposed for Dassen Island, Robben Island, Stoney Point, Dyer Island, St. Croix Island and Bird Island. There are currently interim fishing limitations at these islands that were implemented from September 2022.

2.10 The interim fisheries limitations or closures are set to expire at the end of July 2023. These should continue until the end of the current fishing season unless there are other colony-specific agreements from the representatives from the Small Pelagic Fishing Industry and Civil Society Conservation Sectors. The remaining months until the end of the current small pelagic fishing season will be used to evaluate fishing limitation options using the trade-off methods suggested by the Panel to propose fishing limitations for colonies where there is no agreement across the Sectors. If no alternate fishing limitation proposals are concluded by the start of the

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

2024 Small Pelagic Fishing Season (January 15th, 2024) the current interim fishing limitations will continue until the end of the 2033 Fishing Season, with a review in 2030 after six years of implementation from the start of the 2024 fishing season. Fishing limitations can be additionally reviewed during years of higher-than-average abundance of small pelagic fish stocks. The definition and method to calculate this average including the number of years and valid data points are to be determined by the Fisheries Management Branch within the 2023/24 year. Similarly, the Operational Management Plan for the Sardine and Anchovy can be adapted to acknowledge models of the penguin population, including at low fish biomass levels and at suitable spatial scales. Any decision to alter fishing limitations must be a joint recommendation from the Branch Oceans & Coasts and the Branch Fisheries Management. The Interim Closures Maps are attached as **Annexure 5**.

2.11 Notably, during the June Panel meeting the Chair encouraged the representatives of the fishing and conservation sectors to find each other on fishing limitation and benefit discussions. There was some movement towards agreement during a dedicated negotiation time for possible fishing limitations at Robben Island, Bird Island and for the St. Croix Island. If Sector representatives can confirm these, these agreed fishing limitations can be implemented immediately. Agreed fishing limitations will be formalised through the Deputy Directors General of the Branches Oceans and Coasts and the Fisheries Management. Fishing limitations will be implemented through permit conditions as is the case with current interim fishing limitations.

3 IMPLICATIONS

Personnel:	None.
Financial:	Remuneration and reimbursement costs for the Panel, including local travel and associated costs to major airports and meals during travel are estimated at between R 1 500 000 and R 1 800 000. Approval from National Treasury to use the B1 rate is attached as **Annexure 3** and the 2022/23 rates are attached as **Annexure 4**.
Communication:	The Expert Panel report will be made available via the DFFE Website.
Legal:	None.

Aol

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

4 OTHER BRANCHES/ CHIEF DIRECTORATES CONSULTED

4.1 The Branch: Oceans & Coasts, Branch: Fisheries Management, SANBI and SANParks.

5. RECOMMENDATIONS

It is recommended that Minister —

5.1 Note the Report by the International Review Panel of Experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies.

5.2 Request approval for policy decisions following the Report from the Panel.

5.1.1 That the limitation of small pelagic fishing adjacent to penguin colonies will henceforth be used by the Department as an appropriate intervention in the conservation and management of the African Penguin. Whilst it is acknowledged that small pelagic fishery limitations do have a benefit to penguins, but it should be noted that these benefits are small relative to the observed decreases in the penguin populations over recent decades.

5.1.2 Furthermore, that fishing limitations around selected penguin colonies are established for the following penguin colonies: Dassen Island, Robben Island, Stoney Point, Dyer Island, St. Croix Island and Bird Island. The fishing limitations are to be implemented for a minimum of ten (10) years with a review after six (6) years of implementation and data collection. The transition to implementing fishing limitations is described in Paragraph 2.10. However, in the absence of penguin colony specific agreements across the fishery and conservation stakeholders on limiting small pelagic fishing, consideration should be given on the current interim limitations or closures that must continue from 1 August 2023, as the interim limitations are due to end on the 31st of July 2023.

5.2 Approve the implementation of the recommendations for future science from the International Review Panel. These will be implemented in a phased approach depending on funding and resources available, of which both the industry and the civil society organisations will be encouraged to contribute to the program.

5.3 Approve that Branches Fisheries Management and Oceans and Coasts develop a communications and stakeholder engagement plan to report at least annually to stakeholders

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

on the implementation of these fishing limitations and other measures implemented as actions in the African Penguin Biodiversity Management Plan.

5.4 Approve that the Panel work is now concluded and that the Panel will be remunerated as per the National Treasury Approved rates at the B1 daily rate scale. Each Panel member will be remunerated for 12 weeks of time and the Chair for 14 weeks. Any actual expenses incurred will be reimbursed in addition to this.

5.5 Note that the Chair and Panel Members are available on a date to be determined to present their Report to Minister and local stakeholders via an online meeting.

5.6 Approve that the Report of the Expert Panel can be distributed to all stakeholders and be made publicly available.

CHIEF DIRECTOR: OCEANS & COASTS RESEARCH

DATE:

RECOMMENDED/RECOMMENDED AS AMENDED/NOT RECOMMENDED

DEPUTY DIRECTOR-GENERAL: OCEANS AND COASTS

DATE:

RECOMMENDED/~~RECOMMENDED AS AMENDED/NOT RECOMMENDED~~

DIRECTOR-GENERAL

DATE: 21/07/2023

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

6. RECOMMENDATIONS

It is recommended that Minister —

5.1 Note the Report by the International Review Panel of Experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies.

NOTED/NOTED WITH COMMENT

5.2 Request approval for policy decisions following the Report from the Panel.

5.2.1 That the limitation of small pelagic fishing adjacent to penguin colonies will henceforth be used by the Department as an appropriate intervention in the conservation and management of the African Penguin. Whilst it is acknowledged that small pelagic fishery limitations do have a benefit to penguins, but it should be noted that these benefits are small relative to the observed decreases in the penguin populations over recent decades.

5.2.2 Furthermore, that fishing limitations around selected penguin colonies are established for the following penguin colonies: Dassen Island, Robben Island, Stoney Point, Dyer Island, St. Croix Island and Bird Island. The fishing limitations are to be implemented for a minimum of ten (10) years with a review after six (6) years of implementation and data collection. The transition to implementing fishing limitations is described in Paragraph 2.10. However, in the absence of penguin colony specific agreements across the fishery and conservation stakeholders on limiting small pelagic fishing, consideration should be given on the current interim limitations or closures that must continue from 1 August 2023, as the interim limitations are due to end on the 31st of July 2023. Technical extension of closures per August as discussed with Mr Naidoo on 22/7 pending release of report

APPROVED/APPROVED AS AMENDED/NOT APPROVED

AOL

RECOMMENDATIONS FROM THE REVIEW PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA LIMITATIONS OR CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES

5.3 Approve the implementation of the recommendations for future science from the International Review Panel. These will be implemented in a phased approach depending on funding and resources available, of which both the industry and the civil society organisations will be encouraged to contribute to the program.

APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.4 Approve that Branches Fisheries Management and Oceans and Coasts develop a communications and stakeholder engagement plan to report at least annually to stakeholders on the implementation of these fishing limitations and other measures implemented as actions in the African Penguin Biodiversity Management Plan.

APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.5 Approve that the Panel work is now concluded and that the Panel will be remunerated as per the National Treasury Approved rates at the B1 daily rate scale. Each Panel member will be remunerated for 12 weeks of time and the Chair for 14 weeks. Any actual expenses incurred will be reimbursed in addition to this. Where necessary accounting officer approves financial matters

APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.6 Note that the Chair and Panel Members are available on a date to be determined to present their Report to Minister and local stakeholders via an online meeting. Minister will give this date early in August to meet with panel + stakeholders

NOTED/NOTED WITH COMMENT

5.7 Approve that the Report of the Expert Panel can be distributed to all stakeholders and be made publicly available. This will happen after Minister has released to the public

APPROVED/APPROVED AS AMENDED/NOT APPROVED

RMC

MS B D CREECY

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 23/7/2023

AM

forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

COMMENTS BY THE SMALL PELAGIC SCIENTIFIC WORKING GROUP (BRANCH: FISHERIES MANAGEMENT) ON DRAFT REPORT TO THE MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT ON:

A Synthesis of Current Scientific Information Relating to the Decline in the African Penguin Population, the Small Pelagic Fishery and Island Closures

15 June 2021

Comments received from members and observers of the Small Pelagic Scientific Working Group on the draft synthesis report are highlighted by theme in the precis below, and listed verbatim as provided by their authors.

Precis

1. Incomplete and unbalanced; insufficient and potentially misleading as a basis for decision making
    - Lots of information on fisheries-penguin interactions, little information on other factors that may be relevant to the African penguin decline; emphasis on fishing and closures in relation to other potential drivers of the decline not consistent with available information
    - Lack of critical and quantitative detail on effects of other management actions undertaken via AP-BMP (e.g. how have African penguins responded to habitat restoration; is establishing new colonies feasible?)

2. Missing the main point
    - Need to identify the main causes of the African penguin population decrease (5% p.a. and higher) and develop steps to ameliorate (where possible)
    - Pelagic fishing in the vicinity of breeding colonies is not the main cause of this decrease, and permanent (complete) closure at best would reduce the decrease by 0.5% / not substantially reduce the rate of decline
    - Predominant focus on possible benefits to African penguins from closure misses the main point of concern, namely identifying the main cause of the decline
    - Recent meta-analysis indicates that predator populations are indifferent to increases in prey abundance
    - Other potential drivers of the decline include competition with seals for breeding habitat and food; loss of optimal breeding habitat; impacts from other natural predators; egg and guano harvests; disease; prey biomass and fishing levels; etc

3. Errors in reports / premature reporting of effects of the Island Closure Experiment (ICE)
    - Results from some ICE analyses have been incorrectly reported
    - Benefits of closure inconsistent within and between islands
    - Final Report should await analyses (using both approaches) presently underway of ICE data as recommended by the 2020 IRP[1]

4. Precautionary approach
    - Already being applied via conservative harvesting rates of small pelagic fish, and closure to purse-seine fishing around four African penguin breeding colonies for 50% of the past decade during the ICE
    - Susceptible to an extreme (and unintended) interpretation that any uncertainty in outcomes can be used as justification for stopping an action that may have an impact

5. Socio-economic considerations
    - Studies of the socio-economic impacts of closure around St Croix island and the eco-tourism value of the Simonstown African penguin colony should be subject to detailed review as was done for the study of the socio-economic impacts of closure around Dassen and Robben islands

6. What is needed
    - Alternative possible reasons (factors) for the African penguin decline (some listed above) require investigation
    - Management advice must be based on a defensible statistical basis for assessing the relative plausibilities of various hypothesised factors
    - Models of Intermediate Complexity for Ecosystem Assessment (MICE) provide an appropriate platform for such and these analyses should be accorded the highest priority and conducted accordingly

7. Improving the report
    - Address major gaps including a systematic review of the African Penguin Biodiversity Management Plan's actions, and a quantitative assessment of the relative importance of factors that may contribute to the African penguin decline
    - Provide a matrix that summarizes the potential factors impacting African penguins and the estimated (with associated uncertainty) costs and benefits of mitigation measures for each
    - Provide key and clear recommendations

[1] These analyses have subsequently been completed and reported to the SWG-PEL in early June 2021 but have yet to be discussed

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Comments by Individuals

A. Comments by Kevern Cochrane

I have three comments on the draft synthesis. Of these, the first, General, is the most important and the weaknesses summarised there seriously limit the value of the document as a basis to enable to Minister to make responsible decisions relating to the decline of the African penguin and closures to fishing around their breeding colonies.

1. General

The authors of this document are to be congratulated for putting together within a limited time frame this extensive review of the current knowledge of the African Penguin and its decline, and actions being taken or considered to address the decline. However, as it stands it is incomplete and unbalanced in its coverage of the issues and therefore insufficient and potentially misleading as a basis for making any far-reaching decisions aimed at halting or reversing the decline.

A primary cause of the imbalance is the difference in the amount of information presented on fisheries-penguin interactions compared to the much more limited attention given to other relevant factors. This is particularly striking in the Executive summary where the African Penguin Biodiversity Management Plan is addressed in one paragraph concluding with the positive statement that "However, the BMP-AP achieved a number of its subsidiary goals and implemented several management actions including: i) improved cooperative management; ii) population reinforcement; iii) improved breeding habitat management; and iv) improved management of the captive population". Little further information is presented on the extent and effectiveness of these actions. As with the draft 2nd APBMP, the Executive summary and the document as a whole put an emphasis on fishing and island closures in relation to other drivers that is not consistent with the available information (partially summarised in Table 2).

The report acknowledges some aspects of its incompleteness in the Note at the end of the main text on p54, where a lengthy list is given of relevant and potentially important information that is still to be provided. The second and arguably more important gap in information concerns critical, quantitative detail on some of the management actions that have been undertaken to date through the APBMP and the success of those actions. The absence of this information was noted in the review of the draft 2nd APBMP (as described on p14 of the draft synthesis) and will not be repeated in detail here but two examples that stand out are:

i) In Table 1, under the objective 'To improve breeding habitat for African penguins and reduce human disturbance in and adjacent to breeding colonies' the progress in implementation to date is described as 'Artificial nests designed and implemented' and 'Habitat restoration'. Point III below the table does not add meaningfully to this summary. Habitat loss is widely recognised as a factor likely to be contributing to the decline and hard information should be being presented on the nature and extent of habitat restoration (as a proportion of estimated total needs), the responses of the penguin population to habitat restoration, and the plans or proposals for future restoration. All of which is all essential information for a balanced and holistic approach to conservation of penguins.
ii) Related to the previous point, and under the same objective, reference is made to the appointment of a Working Group to *inter alia* 'c) advise on the suitability of bolstering existing colonies and the establishment of new colonies with orphaned and possible captive-bred penguins'. Additional information on the actions undertaken provided in point II Population

> reinforcement, includes 'investigating and taking steps to initiate a colony for African Penguins at De Hoop Nature Reserve, which is close to present distributions of its primary forage resources and where penguins nested in the early 2000s'. There is consensus that a key factor in the decline of penguins is the mismatch between the locations of prey and breeding sites resulting from distributional shifts in prey species. Actions such as that at De Hoop therefore seem one of the more promising types of intervention to have a serious impact on halting the decline and, as with the previous point, rigorous information on the feasibility, potential scope and likely impact of programmes such as this is essential for balanced, effective decision-making.

These two examples reinforce some of the criticisms of the draft 2nd APBMP and the call for "i) the need for a systematic review of the results from actions implemented as part of the first BMP-AP; (ii) insufficient evidence that prey scarcity is by far the largest driver of the recent decline in penguin numbers and the need for a quantitative assessment of the proportional contribution of all drivers of the African Penguin population decline in order to understand their relative importance and develop appropriate plans to mitigate against them" (p14). In this reviewer's opinion, it would be irresponsible of the Minister to impose any further restrictions on the small pelagic fishery that put those most dependent on it for their livelihoods under additional stress without also having this additional information available and taking it into account in making decisions.

2. Governance and Policy Imperatives

The recommendations from the Benguela Current Forage Fish Workshop, while relevant to this report as a whole, do not belong in this section in either the Executive Summary or the body of the text. They are merely workshop recommendations and have not been adopted, or considered for adoption, by government. The fact that the workshop was convened by the African Eurasian Migratory Waterbird Agreement and the Benguela Current Convention (BCC) does not have any bearing on this.

3. The precautionary approach

The document makes several references to the precautionary approach. The precautionary approach is simple in concept and an important reminder of the need for caution in making decisions in the face of uncertainty but open to widely different interpretations and thus of limited value in this context. A danger with invocation of the precautionary approach is that it is susceptible to an extreme interpretation that calls for any uncertainty in outcomes to be used as a justification for stopping an action that may have an impact. Such extreme interpretations are not what is intended as is clear from, for example (underlining added):

> "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" Principle 15 of the Rio Declaration (quoted in IUCN, 2007[2]);
>
> "The precautionary approach involves the application of prudent foresight" (FAO, 1996[3])
>
> "[T]he Parties shall, by virtue of the precautionary approach ... adopt measures that are proportionate to the anticipated risks to the species" (CITES Conf 9.24 (Rev CoP13), quoted in IUCN, 2007).

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[2] IUCN 2007. Principle 15. United Nations Conference on Environment and Development. (1992). Agenda 21, Rio Declaration, Forest Principles. [New York], United Nations.

[3] FAO. 1996. Precautionary approach to capture fisheries and species introductions. FAO Technical Guidelines for Responsible Fisheries. No. 2. Rome, FAO. 54p.

IUCN (2007) presents guidelines for the application of the precautionary approach to biodiversity conservation and natural resource management. In the context of this draft report and application of the precautionary approach to conservation of the African penguin, the IUCN guidance on use of the best information available (Guideline 5) is particularly relevant. It states that:

> "Decision-making situations where the Precautionary Principle is relevant can entail varying degrees of uncertainty, ranging from situations of complete ignorance to those where probabilities can be estimated. The Precautionary Principle nevertheless requires that in any situation, all available relevant information be taken into account, including that relating to human drivers of threats to biodiversity, as well as biological and ecological information. The best available scientific information should be used. In addition, traditional and indigenous knowledge and practices may also be relevant and should therefore be taken into account in decision-making. Efforts should be made to ensure evidence and information is independent, free of bias, and gathered in a transparent fashion. This can be facilitated by ensuring that it is gathered by independent and publicly accountable institutions without conflict of interest. In addition, taking into account multiple sources of information can help minimize bias.

This draft report to the Minister goes some way towards achieving this guideline of using the best information available but for the reasons touched upon in the first section of these comments, still has a long way to go before it can be claimed to present all available relevant information.

4. Recommendation

The primary recommendation from this review is that major gaps in the information included in the draft synthesis need to be addressed in order to enable the Minister to make responsible decisions on the African penguin in accordance with national law and policies. The gaps and the need for them to be addressed should be brought to the attention of the Minister in the Executive summary. In particular, the previously called for systematic review of the results from actions implemented as part of the first APBMP and the quantitative assessment of the relative importance of those factors considered likely to be contributing to the decline need to be completed and their results included in the synthesis. Urgency is required on both. Noting the history of conflict between interest groups from different perspectives of this problem, it will be important that the assessment of the role of different factors is overseen and reviewed by an independent and impartial group of experts covering both biodiversity conservation and fisheries assessment.

B. Comments by Doug S Butterworth

1) **Missing the main point**

The present low abundance and continued decrease of the African penguin is clearly a concern which needs to be addressed. The first step in such a process is obviously the identification of the main causes of that decrease, and the development of steps to ameliorate it (as may be possible). This is so that there can be reasonable confidence that any management action taken is likely to achieve meaningful benefits.

Clearly also, pelagic fishing in the neighbourhood of penguin colonies is NOT the main cause of this decrease (see Butterworth 2021a). This decrease is typically some 5% pa (and larger for some major west coast colonies). Yet results from the island closure experiment currently indicate that even if fishing in the vicinity of these islands does indeed negatively affect penguin population growth, completely closing the islands concerned to fishing would see at best only about a 0.5% pa reduction in this decrease rate. (The draft report is in error in

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suggesting that this figure is about 1% - see, for example, pgs 6 and 51. This is because it failed to take into account that the main islands have already been closed to such fishing for 50% of the years of the last decade.)

Yet the draft report focuses predominantly on the issue of possible benefits to penguins from such closures around islands. As such, it is obviously completely missing the main point of concern.

The draft report also quotes values for extinction probabilities. The methods used to provide these are either inappropriate or flawed. Inferences from Namibia are not reliable as the underlying situation there (more than an order of magnitude change in sardine abundance in the late 1960s to 1970s, and an associated regime shift) bears little resemblance to that in South Africa. Furthermore, these probability calculations also use the methodology of Crawford et al. (2001), which is in turn based on Shannon and Crawford (1999). The last is clearly inappropriate for this purpose, as it uses a population model without any density dependent response, rendering extinction inevitable even in ideal circumstances. In other words, if it applied, penguins would already have become extinct many years ago.

Hence these extinction probability values need to be struck from the final version of the report. Simpler computations would in any case make clear that extinction is inevitable in the medium term, unless current trends can be meaningfully modified.

2) **<u>What is needed to address the main point</u>**

There is little specific in the draft report text about hypotheses other than fishing near penguin colonies to account for the penguin decrease. Only suggestions of food shortage (implied to be a result of pelagic fish catches having been too high) receive much coverage, but without justification other than generally by way of qualitative comments. Little is said about alternative possible reasons such as loss of optimal nesting habitat (burrows on guano islands), or competition for food with a seal population that has increased substantially over recent decades. This has possibly been to larger numbers than were present before earlier sealing operations, with mainland sited breeding colonies now having become viable and allowing the seal population size to exceed its natural carrying capacity given only island breeding sites.

As pointed out in a recent general review of appropriate EBFM (ecosystem based fishery management) approaches to address such situations (Carruthers and Hilborn 2021), such commentaries do not constitute a sufficient and defensible scientific approach to provide advice to managers in these circumstances. This advice has to be based on fitting models for the various alternative explanations to available data to provide a defensible statistical basis for assessing the relative plausibilities of the associated hypotheses. This is possible using "MICE" (Models of Intermediate Complexity for Ecosystem Assessment). Instead of giving these models only a passing mention, the final version of the report needs to accord them highest priority for the future analyses needed urgently to address this issue.

3) **<u>Lack of clear conclusions</u>**

The draft report lacks a much-needed clear summary of what are key clear and obvious conclusions. Its very lengthy nature often serves to obscure these within voluminous text,

much of which lacks core relevance. The two sections above and the one following are clear examples of this aspect, which clearly needs correction when finalising this report.

4) **Errors in some reported effects of island closure**

A final version of the section on island closures should await the results of the analyses requested by the 2020 IRP, which should become available shortly. But even in the meantime, a long account of every stage of this process (as in the draft report) seems unnecessary, and blurs reflecting the aspects that matter: what core results are already apparent or virtually so.

In particular, the most recent results point to the two different analysis "approaches", when appropriately implemented, yielding near identical results. This is as the 2020 IRP thought likely and as is to be expected theoretically. In particular, results for individual data-based approaches shown in Figure 10 were confirmed by the IRP not to have been calculated in accordance with their description. Furthermore, subsequent analyses (Ross-Gillespie and Butterworth 2021) indicate many of the results reported there to have been questionable. The only substantive reason cited in the draft report against use of the alternative "aggregated" approach – a limited number of degrees of freedom – applies equally to the individual data-based models which have effectively exactly the same number. This has been pointed out on numerous occasions over recent years (for example Butterworth 2016, 2020) and was confirmed by the 2020 IRP. The draft report also contains criticisms of the design of the closure experiment based on the assertion (pg 29) that it "was not well matched to the biology of the birds". Yet the associated supporting "explanation" (bottom of pg 30) is, inter alia, of no relevance to the effects which the experiment is seeking to detect and quantify.

All such misleading text (especially that based on mathematically incorrect assertions) needs to be struck from the final version of the report.

5) **The Precautionary approach**

Much South African legislation requires that the precautionary approach be followed in addressing an issue such as this. But there is perfectly justifiable claim that that is already the case. Harvest rates for local forage species are set conservatively and below those for most other major pelagic fisheries internationally; and fishing has been closed around the major penguin breeding colonies for 50% of the time over more than the past decade.

Consequently, the **broad** requirements of such legislation (all that such legislation itself sets out in any case) cannot be argued as other than already being met. Any arguments that precautionary approach requirements are not being met would (in principle) be possible only if the legislation concerned had been embellished through the addition of operational definitions. This is not the case locally.

Hence further deliberation based on the precautionary approach does not advance this matter any further. It rather needs to be addressed via a standard approach applied internationally in such circumstances: "Risk analysis" (see Butterworth 2021b). This aims to ensure that scientists present evidence to decision makers on an objective basis which allows them to make policy decisions based on sound scientific inputs. The final version of the report needs to make this clear.

6) **Surplus of arguments based on speculation and qualitative rather than quantitative results**

The draft report aims to provide a basis for the Minister to make final decisions on possible management actions on this issue. As such it needs to be rooted in soundly established scientific results (i.e. "credible science" as is stated by the Minister to be needed – see pg 8). Hence it needs to be in line with international norms, as for example pointed out in a recent review of the international situation in this regard (Carruthers and Hilborn 2021).

This recent review (see also section 2 above) points to the need to base scientific advice on fitting models for various alternative hypotheses to available data. In contrast, many of the arguments advanced in the draft report are based on speculation or (in most cases) only qualitative rather than quantified analyses (see, for example, pg 10).

Rationales advanced in the main text of such a report need to be near exclusively limited to firmly established and quantified scientific results. Other assertions and qualitative results, if included at all, should be placed in an Appendix in the final version of this report.

7) **In relation to the Free et al. article**

The summary of the recent Free et al. article and its implications are misleadingly summarised (pg 23). The main insight provided by this article is to contradict the assertions of three major studies based on ecosystem models (which were only broadly aligned with data) published in the first half of the last decade that forage fisheries would have important impacts on natural predators of those fish. Free et al. shows these assertions are scarcely supported when checked against detailed empirical evidence. This in turn indicates a need for downward revision of the MSC target reference point for such forage fisheries (see reference on pg 19). In broad terms then, the indications from this article are that South Africa's forage fisheries are not being harvested unduly intensively, including with respect to the needs of their predator populations.

The draft report places undue emphasis on minor commentary in Free et al. about their results perhaps being less applicable to seabirds, and regarding restrictive measures near to breeding colonies being more effective. Regarding the former, at least one of the cases cited by Free et al. is in error (the analysis is question having been rebutted). As regards the latter, results for the South African case (as summarised above) offer little quantitative support. Naturally the Free et al. results reflect a range whose central value should not be assumed to apply in every case; thus, while this paper provides valuable general indications, each case remains in need of specific evaluation prior to reaching decisions.

8) **Suggestions for future work**

Given the need for urgency and focus of further research related to the main concern at issue here, the list of suggested future research topics provided on pgs 51-52 is hardly appropriate. Even if some of these exercises were to be completed (and this could be achieved quickly, which is probably unlikely in many cases), it is unclear whether/how most of the results could be used to improve insight into the cause of the penguin decline and how best to try to reverse this. Furthermore, statistical feasibility and power analyses for many of these suggestions would need to be conducted to assess practicality, before committing the considerable financial and person resources that they would need.

This list needs to be revised on the basis indicated and taking account of comments above, e.g. in section 2), in the final version of this report.

9) **Lack of comparison with other forage fish fisheries**

As indicated above (e.g. sections 2, 6 and 7), the draft report is lacking as regards comparisons with international norms and values. This is both in terms of the basis for decisions on questions concerning the effect of trophic interactions on marine population trends (such as argued "food shortages"), and as regards the intensity of the harvesting allowed on South African forage fisheries.

Commentary on survey trends for anchovy could also be improved in the final version of the report. For example, in regard to west coast penguin breeding colonies, it is more the strength of annual anchovy recruitment passing these colonies in autumn than overall abundance west of Cape Agulhas in late spring (as shown in Figure 7) that is pertinent.

10) **"Availability" and the FAI (forage fish availability index)**

The draft report uses the word "availability" too loosely and fails to provide a clear definition – whether this refers to local density or catchability (the ratio of catch rate to local density). It is also unclear whether the word is intended to have a consistent meaning throughout the draft report – a matter which needs to be clarified in the final version.

Claims are made (see pgs 25-26) that a FAI (forage fish availability index) supposedly suggests lesser food availability for seabirds from 2000 onwards. But the analysis concerned is fundamentally flawed in attempting a linear linkage of diet proportions to abundance, when such relationships are necessarily non-linear in all except limiting situations (which do not apply in this case). Furthermore, the conclusions of the associated paper are based on no more than an assumption without accompanying justification. This is that the second principal component determined in the Principle Components Analysis "appeared to reflect the combined availability of sardine and anchovy in the diet", i.e. the paper concerned effectively "assumes what it seeks to prove". Reference to the results from this consequently unreliable analysis (which has also not been accorded the requisite thorough discussion in the PWG) need to be struck from the final version of the report.

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C. Comments by South African Pelagic Fishing Industry Association

Introduction

This document summarises SAPFIA's comments on the draft penguin report, referred to here as the PR. To focus the reader's attention, comments are divided into two sections, 'Main Points', and 'Additional Detailed Comments'.

Main Points

1.1 Potential benefits for penguins by reducing fishing pressure on anchovy and sardine fish stocks

1. The distributional shift of anchovy and sardine from the West Coast to the South Coast is highlighted in the PR as having a negative impact on penguins. The PR suggests that this shift has been partly due to fishing pressure. However, no evidence is provided to substantiate this suggestion. The only available evidence on this, which is Figure 1 below, suggests that fishing has played no part in the sardine distributional shift.
2. Fishing levels on anchovy and sardine populations are being managed at comparatively conservative levels. This is indicated by (i) the catch being a low % (~7% for anchovy and < 20% for sardine) of total predation levels on these populations, (ii) that the biomass of these stocks is only some 20-30% less than would have been the case in the absence of fishing, and (iii) by comparing South African exploitation rates with fisheries for anchovy and sardine stocks elsewhere in the world (Bergh, 2020a,c). (i) and (ii) are noted in the PR, but the PR fails to mention (iii), and this point should be included in the final version of this report.
3. A recent paper by Free et al (in press), for 45 predator stock feeding on small pelagic stocks around the world, showed that the majority of predator populations have been indifferent to increases in their prey populations, while only 13% of these stocks responded positively to positive perturbations in their prey populations. The paper suggests that this may be because the prey biomass in the examples they studied, which include South Africa, is well managed.
4. Considering 1-3 above, reducing fishing pressure on anchovy and sardine fish stocks is unlikely to provide a benefit for, viz. reduce the rate of decline in, the penguin population in South Africa.

1.2 Trends in penguin numbers by region

5. Figure 1 of Page 9 of the PR suggests that the decline in penguin population size on the West Coast has halted over the last five years, and that there has been no decline in the South-West over the last 20 years. This observation needs to be addressed in the PR and referred to in the Executive Summary.

1.3 Results from the island closure experiment and potential benefits for penguins from island closures

6. The report presents a graph of the impact of island closures from the work of Sherley (2020) as Figure 10 on page 39. The IRP report of the 2020 IFSAW (Haddon et al, 2020. FISHERIES/2020/DEC/SWG-PEL/REVIEW/07) concludes that this work did not use the methods claimed in the methodological descriptions in that paper. These estimates do not therefore reliably reflect the results from the island closure experiment.
7. Preliminary results from the island closure experiment (see Figure 11 of the PR) do not consistently point to a benefit to penguins from island closures. For example, at Dassen Island, while there is a benefit indicated for chick survival, the result for fledgling success is in the opposite direction.
8. The experimental results are said to suggest that island closure may, because of a benefit for chick survival, result in a ~1% improvement in population growth at Dassen Island and between ½% and 1% at Robben Island. Since at least one of these islands has been closed each year since 2008 (as a result of the island closure experiment), 50% of this benefit, at most ½% per annum, has already been realized, so that closure of both these islands to purse seining could realize at most a further ½% per annum for penguins breeding at those islands. The rate of decline in the penguin population is 5-10% per annum. Therefore, closure of Robben and Dassen Island to purse-seining will not substantially reduce the rate of decline in the penguin population.

1.4 Impacts other than fishing

9. Table 2 of the PR does not provide adequate guidance for management because it mixes past mitigations, potential future mitigations and impacts on penguin population rate change. Better guidance would be provided by an additional or reworked table which contains (a) a comprehensive list of all potential impacts on penguins, and (b) a list of potential mitigations together with costs and benefits and associated uncertainties. (b) should include further research as a possible mitigation. An initial comprehensive list of possible impacts should include but not be limited to the following: egg harvests, guano harvests, disease, natural predators, parasites and disease, oiling, seal predation/competition, invasive alien predators (cats, rats, mice, dogs, caracal etc.), food availability, prey biomass levels and local competition with fishing.
10. Seals have been protected in South Africa since 1973 and have increased substantially in numbers since that time, notably between 1973 and 1995 (Butterworth et al, 1995 and Figure 2 here). In addition to direct predation by some seals on penguins, seals may compete with penguins for food, as well as for breeding habitat. This consideration was not listed in the PR. The likely scale of the impact of competition with seals on penguins can be estimated using mathematical models. This work should be carried out.
11. The PR contains many qualitative points which are not quantified and do not provide clear guidance for management actions; they therefore cannot form part of management deliberations. Many of these (which are referenced in the more detailed comments section of this document) have not been discussed amongst all the scientists who are party to penguin deliberations, and a forum for these discussions needs to be created.

1.5 Socio-economic considerations

12. **Economic impact of island closures on the pelagic fishing industry:** The PR cites three studies into the economic impact of closing areas to commercial fishing, viz. Bergh et al (2016), Turpie et al (2012) and Ginsburg (2019). Bergh et al (2016) estimates that there is a direct average impact of closing one of the West Coast islands of R 25 million per annum. The PR considers Turpie et al (2012) and suggests that there might be no

economic impact on small pelagic fishing due to the Addo Elephant National Park MPA. Ginsburg (2019) estimates that the economic impact of closure of St Croix or Bird Island Algoa Bay to small pelagic fishing is zero. It is relevant that only the Bergh et al (2016) study used an opportunity-based model, consistent with the dynamics of the small pelagic fishery, and that Bergh et al (2016) was subjected to critique by the SPWG and the international panel (IRP of the IFSAW) on multiple occasions and over a period of almost a year. During these critiques the authors were required to produce extensive additional outputs and variants of their models, as requested by members and observers at SPWG meetings, or by independent international reviewers involved in annual stock assessment reviews. A similar international review and engagement with the SPWG would be appropriate for the work reported in Ginsburg (2019) (see an initial critique of this work in Bergh (2020b)) and Turpie et al (2012).

13. **The tourism value of penguin colonies:** The PR cites one study into the tourism value of the Simons Town Boulders penguin colony (van Zyl and Kinghorn, 2018). The estimate provided there appears to be more than an order of magnitude greater than estimates given in another study not cited in the PR, Lewis et al (2012). For this and other reasons, it would seem appropriate that the study by van Zyl and Kinghorn (2018) be subject to a similar level of international and local scrutiny as was the Bergh et al (2016) study.

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Ross-Gillespie A. and D.S. Butterworth. 2019. Results for GLMM analyses of the South Coast penguin colony chick condition data. FISHERIES/2019/NOV/SWG-PEL/33.

Sherley RB. 2020. Revisiting the key results in MARAM/IWS/2019/PENG/P4 in light of the 2019 Panel recommendations. FISHERIES/2020/JUL/SWG-PEL/53REV.

Turpie J.K., Hutchings K., Clark B.M., Clarke F. 2012. Potential impacts of the proposed Addo Elephant National Park Marine Protected Area on commercial fisheries and their value. Unpublished report to South African National Parks. Anchor Environmental Report no. 1490-01. 80. 80pp.

Van Zyl and Kinghorn. 2018. THE ECONOMIC VALUE AND CONTRIBUTION OF THE SIMON'S TOWN PENGUIN COLONY. Prepared for: City of Cape Town Prepared by Independent Economi Researchers, Dr Hugo van Zyl and James Kinghorn 24pp.

Additional detailed comments on the Penguin Report (PR)

General Comments: By trying to re-debate in this draft report many of the scientific debates held over the last 10 years or so, the PR has become very cumbersome and could be shortened substantially. It needs additional informative tables, graphs and matrices. There are also many arguments being introduced by seabird biologists which have never been raised at the SPWG. Table 2 is a confusing combination of potential mitigations and possible impacts. A clear list of potential impacts is needed, followed by an associated list of possible mitigation measures, the costs and benefits of these mitigations, including a statement summarising uncertainties. This matrix should tell virtually the whole story at a glance and make clear where the major uncertainties lie, and where the major opportunities for mitigation lie. Also, many unquantified statements are being presented alongside quantitative work conducted by scientists involved in the SPWG with considerable rigor, giving the impression that all this other work was done with the same rigor. There needs to be a local scientific discussion about all such statements before consolidated views are forwarded to the Minister. An appropriate forum needs to be created to allow for these discussions.

Page 2, para 1 under "Status of the African penguin": If this paragraph had described intermediate milestones in the penguin population decline it would have shown that historical and substantial declines in the first half of the 20th century could not possibly have been due to pelagic fishing, since they predated the initiation of the commercial pelagic fishery. The early declines were most likely heavily influenced by egg harvests for human consumption and guano harvests. The fact that guano harvests ceased many years back does not mean that the removal of cumulated guano deposits over millennia, and hence the absence of optimal breeding habitat, does not play an important role in contemporary penguin population dynamics.

Page 2, para 1 under "Status of the African penguin": Reference to a colony-by-colony table of penguin population size estimates with years and sub-totals/ totals would be helpful, going back as far as possible.

Page 2, para 2 under "Status of the African penguin": Extinction probabilities and their calculation methods have not been discussed with all scientists involved in deliberations about penguin management, particularly fishery scientists. The forum alluded to under the above "General Comments" could create the appropriate setting for such deliberations.

Page 3, para 1: It does not seem helpful to highlight as achievements steps which are of administrative value, but which have not reduced the rate of decline in penguin population size.

Page 3, para 4: The distributional shift WC to SC of anchovy and sardine is likely to be a primary driver of penguin decline and it therefore needs more attention and analysis. Figure 1 here demonstrates that the sardine distributional shift has not been caused by fishing. No comparable work is available at this time for anchovy.

Page 3, para 4: "A "pelagic boom" occurred in the early 2000s, with both anchovy and sardine biomasses being very high but subsequently sardine biomass decreased rapidly with anchovy biomass declining gradually": The notion of an ongoing decline in the anchovy biomass is not correct. The most recent biomass estimate in November 2020 is more than three times larger than the November 2019 value and at least 20% larger than the 36 year average survey biomass level.

Page 3, para 4: "These distribution changes have resulted in a mismatch in the location of penguins and small pelagic fish particularly off the west coast": If mismatch is the cause in the west, where is the corresponding causative mismatch in the south?

Page 3, para 5: Free et al (in press) suggests that above a certain threshold prey population levels are not a major driver of predator population dynamics. The discussion in this paragraph is imbalanced as it does not juxtapose potential fishing related impacts with impacts from egg harvests, guano harvests, disease, predators, parasites, oiling, seal predation/competition, invasive alien predators (cats, rats, mice, dogs, caracal etc).

Page 3, para 5 (last): The results of the island closure experiment, while not finalised, suggest that there is in fact only a very small effect of island closure on only a few of the population parameters investigated.

Page 4, para 2: The important point is that the very large reduction in sardine biomass in the last decade has not, according to the models that are being used to manage the sardine resource, been due to overexploitation by fishing, nor are fluctuations referenced in this part of the PR. The sardine biomass is estimated to be only 20-30% less than it would have been in the absence of fishing. Environmentally mediated declines in sardine recruitment are far more important drivers of change in sardine biomass.

Page 4, para 3: There are comments made here to the effect that the experimental design was inadequate. These are not helpful at this point in time. Many side-issues raised in this para are of limited relevance, and are not quantified.

Page 4, para 4: The overall impression from Figure 11 of the PR is that there is not a clear negative impact due to fishing. In general, confidence intervals are very broad and span both 0 and the suggested biologically meaning threshold level (of -0.1). Point estimates on either side of zero and/or the biologically meaning threshold are obtained. At Dassen Island the results suggest that fishing has a positive impact on fledging success but a negative impact on chick survival. At Robben Island the effect of fishing is estimated to be negative for both fledgling success and chick survival, although only the fledgling success result meets the 'biologically meaningful threshold'. There are

no estimates for chick survival and fledgling success at St Croix Island or Bird Island Algoa Bay, and hence no conclusions can be drawn that are directly relevant to penguin demographics for these response variables. With respect to other response variables, the only result for which the existence of a biologically meaningful result has been demonstrated is for chick condition at Robben Island. The point estimate indicates a negative impact on chick condition at Robben Island. At St Croix and Bird Islands the available results are for Chick condition, Foraging length, Foraging duration, and Maximum foraging length. At Bird island, there is no evidence to suggest a significant (at the 5% level) impact of the fishery on the penguin foraging behaviour. For St Croix, the impact is estimated to be significant for maximum foraging length but not for foraging length or foraging duration. For chick condition at St Croix and Bird "none of the fishing effect impacts are estimated to be significantly different from zero, or from -0.1, and the standard errors for these estimates are large, indicating that any inferences drawn from this analysis would not have great reliability" (Ross-Gillespie and Butterworth, 2019).

Page 4, para 4: Quantification of declines in penguin numbers, together with possible benefits as estimated from the Island closure experiment would be useful.

Page 5, para 1: There is a great need for a summary table that can provide guidance for decision making, and which contains a list of all impacts on penguins and the likely scale of the impact, all potential associated mitigations and their costs, benefits and uncertainties.

Page 5, latter part of para 3: The statements made here are not quantified and so cannot inform decision making. In any case, even if such a transfer of nutrients is important, in this context the question is what is the proportional contribution of penguins to that transfer?

Page 6, para 1, last sentence: Given that the island closure experiment has been running for 13 years this statement does not seem to be correct. One could argue that this experimental work represents a test of the potential benefits of long-term closure.

Page 6, para 2: It seems that a balanced document would include and list upfront, perhaps in the Executive Summary, all potential negative impacts for the penguin population.

Page 6, para 2: 4th and 3rd last line, "Such models need to account for appropriate temporal scales that accord to penguin life history stages.": What are these scales and why would they necessarily be important?

Page 6, para 4: Undue prominence is given here to this meeting, to which seabird participants in the SPWG were invited, but other participants in the SPWG, including representatives of the small pelagic fishing industry were not invited and could not therefore attend.

Pages 1-6: In considering the weight of evidence and the arguments presented in the Executive Summary, only aspects that have been tested, scientifically interrogated and quantified should be considered. Speculative statements that are unquantified should be discounted.

Page 9, Figure 1: For readability, the final version of this document should show these regions on a map.

Page 9, Penultimate Paragraph: The methodologies for calculating these methods is not explained in the PR and have not been reviewed by the SPWG. They should be.

Page 10, para 2: All of these effects are possibilities. However, unless they can be quantified, they cannot assist or be used for management decision making.

Page 10, para 3, second sentence: This sentence ignores the socio-economic costs that mitigations imply, and should be reworded in the final version of this report to reflect an appreciation of such costs.

Page 10, para 3: It would be useful to highlight the ease/cost of mitigation by means of starting new colonies. How easy is it to start new colonies?

Page 10, para 3: If island closures have only a 10% effect, then the other 90% of the decline should be investigated more thoroughly. For example, regional fish population shifts resulting in lower availability around key islands may well have an additional impact. The impact of this and other impacts needs to be quantified in order to provide a balanced basis for decision making regarding mitigation of declines in the penguin population, and in order to set appropriate expectations.

Page 11, Table 1: The difference between Red and Orange is not clear in this table.

Page 11, commenting on the following in the table "Attempt to ensure adequate prey for penguins: a) In areas close to their breeding localities and b) During non-breeding periods of their life cycle. Investigate and monitor the possible impact of fishing near penguin colonies on the biology of African Penguins": Why is this in red - does the island closure experiment not indicate that it should at least be orange? Or have the colours been misinterpreted here?

Page 11, commenting on the following in the table "Investigate the possibility of implementing spatial fishery management strategies that address spatial mismatches between fish location and catches to the benefit of the African Penguin": It's not only about fisheries management. If there are mismatches between prey and predator populations to start with, no amount of fisheries management will arrest the decline, not even complete closure. With respect to this same point, see Figure 1 below, which demonstrates that the West Coast to South Coast distributional shift for sardine was not due to fishing.

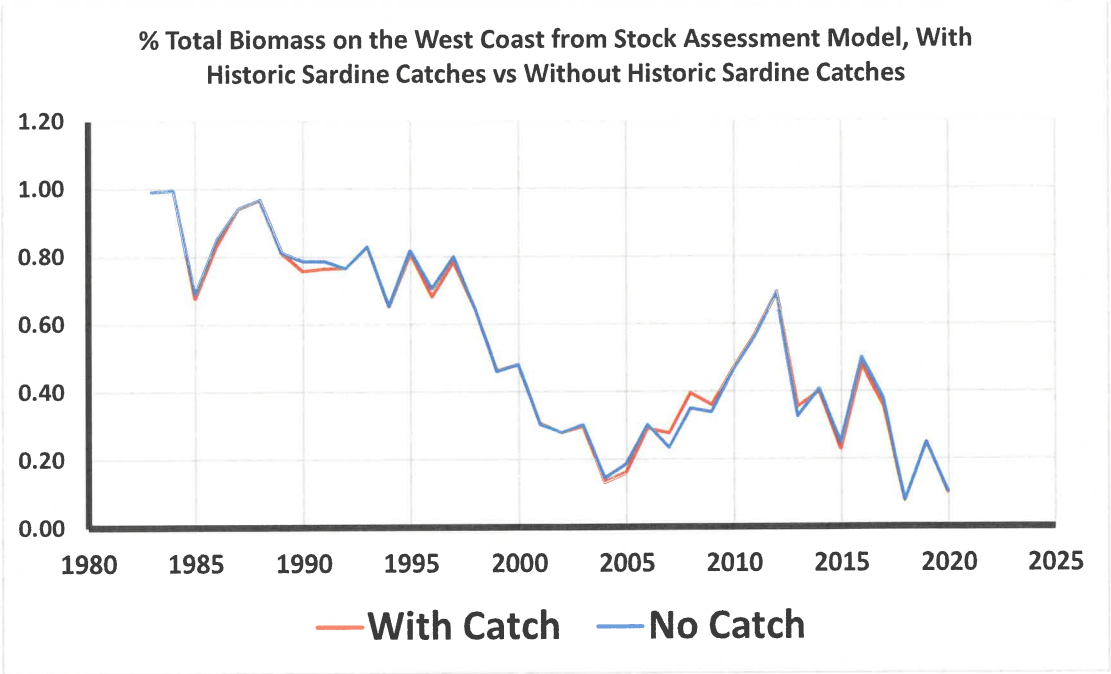

Figure 1. In Red, the West Coast total biomass as a percentage of the West + South Coast total biomass based on stock assessment model fits. In Blue, the same quantity, but recalculated using a retrospective run of the stock assessment model in which all sardine catches are omitted. The Blue shows virtually the same time trend as the Red, suggesting that the shift from West Coast to South Coast is not driven by fishing. The stock assessment model used for producing these results is an independent implementation by OLSPS of model (v) described in de Moor (2021). The with and without catch trajectory methods are referred to in OLSPS Marine (2020a), and methods are described in Bergh (2020c).

Page 13, commenting on the following in the table "Artificial nests in most colonies to protect from predation": Have these nests been shown to be effective? Have efforts to duplicate the preferred type of burrow been made?

Pages 11-13, General comment on Table 1: Competition with seals for prey is not considered in this table. Seal populations have increased to multiples of what they were in the mid-20th century when penguins were still thriving. Surely this must have had an appreciable impact on penguin food availability, apart from predation by seals on penguins. This seems to be a major omission from the table (see graphical excerpt below from Butterworth et al, 1995 showing trends in seal population numbers).

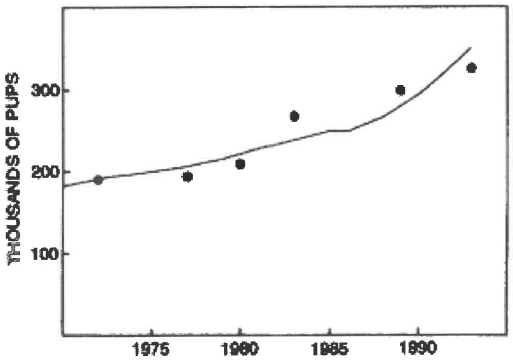

Fig. 2: Observed (dots) and model-predicted (line) numbers of seal pups at the time of the aerial survey. The model predictions are derived from the fit of the base-case model

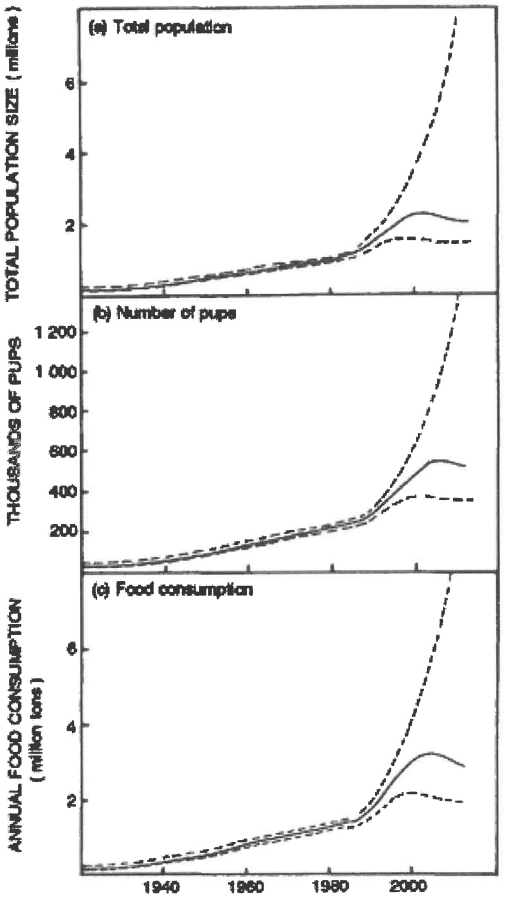

Fig. 3: Time-series of (a) total seal population size, (b) number of pups at the time of the aerial survey and (c) annual food consumption for the base-case model, 1920–2013. The line indicates the median and the dashed lines the 90th percentiles of the 1 000 bootstrap replicates. The projections from 1993 assume no future harvesting or culling

Figure 2. Figure showing aspects of seal population trends including forecasts, extracted from Butterworth et al (1995).

Page 13, commenting on the following in point (III) last para "Monitor and curtail the spread of pathogenic viruses": Have there been any links between penguin mortalities and avian flu outbreaks in SA?

Page 14, para 2: These concerns are key and should be properly reflected in the Executive Summary of the final version of this report.

Page 14, para 4 (last): Even if sardines are not available close to the breeding colonies when food is needed, why would anchovies, redeye, horse mackerel, squid and/or other prey species not provide enough nourishment?

Page 15, para 3: Where there are summary statements like this, they should be highlighted in some way, and appear in the Executive Summary of the final version of this report, with appropriate qualifications.

Page 15, para 3: It is important to link here to the work of Free et al (in press), which suggests that for well-managed small pelagic stocks, predator stock dynamics is most commonly not related to prey population dynamics.

Page 16, para 1: The main dynamical trends in these populations are predominantly driven by environmentally mediated changes in recruitment.

Page 16, para 2: In this paragraph better balance would be achieved (perhaps in the final version of this report) by pointing out that the SC spawning biomass contributes to WC spawning biomass by, inter alia, entrainment of eggs from the SC onto the WC.

Page 16, para 3: What are the actual biomasses and decision thresholds used in these other sardine fisheries? It would be helpful to highlight these in this paragraph in the final version of this report.

Page 16, para 4, last sentence: Add: although the dynamic B0 plots indicate that environmental drivers dominate fishing to a considerable degree.

Page 17, Figure 2. 'Section on environmental drivers': What reliability can be claimed for these conclusions, given the failure of most claimed environmental-recruitment relationships worldwide?

Page 18, para 1. A number of time dependent estimates of natural mortality are presented in this paragraph. However, the reliability of these estimates was not considered sufficient for them to be used for actual fisheries management decisions for anchovy and/or sardine.

Page 18, para 2 commenting on the statement "Results are consistent with earlier work (Shannon et al., 2004 a, b; Travers-Trolet et al., 2014) which found that environmental effects affecting recruitment, and predation, rather than fishing, were the primary drivers of changes in anchovy and sardine biomass.": This statement should be interposed into other paragraphs in the PR which discuss the primary driver of prey biomass dynamics.

Page 19, para 1. The MSC recommendation is more nuanced than is described here, as outlined in Bergh et al (2020c): "*MSC defines the default precautionary reference points for management of key LTL species as **either** a biomass that is 75% of the unexploited level in the system, **or** a target exploitation rate of 0.5 x FMSY **or** 0.5 x M (natural mortality of the species). In fisheries where there is sufficient understanding of the system, these default reference points can be adjusted to specific levels appropriate to the fishery, which are shown not to have adverse ecosystem effects through the use of credible ecosystem models (as defined in SA2.2.13).*"

Page 20, Figure 4. It is appropriate in response to Figure 4 to emphasise how small these graphs indicate the impact of fishing to be.

Page 22, para 2, "The changed sardine relative distribution may also have been driven by fishing pressure": This possibility is dispelled by Figure 1, which shows that fishing did not play a role in the West Coast to South Coast distributional shift for sardine.

Page 23, para 1: While there may be an effect, the question is how large is this effect? From the island closure experiment so far, the effect seems to be small.

Page 23, para 2: The effects proposed in this paragraph have not been quantified and cannot therefore be used for any decision making with regard to mitigation of declines in penguin population size.

Page 23, para 2: It would be useful to describe the scale of impact of oil spills on recent trends in penguin numbers at St Croix, since there is hearsay that oil spills very recently caused a sharp 30% decline in penguin numbers at St Croix.

Page 23, para 2, last sentence: This statement would benefit from some more information about the nature of the disagreement and the reasons therefor. In general, this paragraph points to the need for a more objective MICE-based analysis to determine various effect scales more quantitatively and reliably.

Page 23, para 3: This paragraph contains quite a complex description of time trends in penguin numbers and anchovy and sardine biomass in Figure 7, without drawing clear conclusions. An important feature seems to be that while prey biomass has fluctuated with no overall trend, penguin numbers have declined steadily, aside from a positive bump when prey biomass was particularly high in the late 1990's and early 2000's.

Page 24, para 2, Table 2: How credible are these %s?

Page 24, para 2, Table 2: Readers' comprehension of this table is hampered by the absence of a clear definition. For example, does the % refer to annual rate of decline of a penguin population, or to a proportion (%) of that rate of decline?

Page 24, para 2, Table 2: i) Column 2 does not add up to 100% so there are apparently some major factors missing. Is that the correct interpretation? ii) What about introduced unnatural predators on islands and mainland colonies like cats, rats, mice, dogs, caracal etc. iii) With reference to the %s in column 2, what are these? Annual averages? Since when? iv) This needs better explanation, as it isnot clear what is meant here. v) What is the proposed mitigation? vi) Include population trends in seal population. vii) To what aspect of seal predation does this refer, and what is the mitigation being proposed – this is not clear. viii) But what is the total impact of unnaturally low levels of guano on breeding islands coupled with the inability of penguins to burrow in such guano and hence breed naturally?

Page 25, para 1, last sentence: But surely it is likely that there would be some correlation between overall abundance and local abundance near colonies?

Page 25, last para, and para 1 & 2 of pp 26: Insofar as shifts in the distribution of prey impacts negatively on penguins, these have not been shown to be due to fishing, and in some cases (see Figure 1) the effects are clearly not due to fishing.

Page 26, para 2, last sentence: This is a very important concluding remark. For the final version of this report it should be moved to the Executive Summary.

Page 26, para 3, second last sentence "despite the high prey availability between the mid-1980s and 2000 indicated by Crawford et al. (2019) the African penguin population continued to decline over that period": This is a key point to make, and it should if possible be included in the Executive Summary of the final version of this report.

Page 27, para 2: The methods, assumptions and conclusions described here should be reviewed by all relevant scientists involved in deliberations about penguin management, including fisheries scientists from the SPWG.

Page 27, para 2: If sardine is not available, do penguins shift to other prey? Where and when do they feed during pre-moult.

Page 27, para 2: What about competition with seals for local forage fish?

Page 27, para 3. Have these findings been interrogated and accepted by all scientists involved in penguin deliberations. Have all these arguments been presented to fisheries scientists? What are these thresholds and on what basis have they been determined?

Page 27, para 3. But these fluctuations are predominantly driven by natural environmental fluctuations as noted in other parts of the PR.

Page 27, para 4 "...it not be used for tactical management advice for small pelagic fish": A key point, which is applicable to all results based on Weller et al (2014). This point should be highlighted.

Page 27, para 4: Are the results mentioned from Robinson et al (2015) relevant to the PR. If so then the implications for potential decisions about penguin mitigation need to be more clearly spelt out, perhaps in the final version of this draft report.

Page 28, para 1: This statement about the role of seals is apparently important, but one needs to bear in mind the caveat noted above (from the IRP) that Weller et al should not be used for tactical management advice?

Page 28, para 2. No reference is made here to the published rebuttal of the Pichegru papers.

Page 28, para 2, fourth sentence: This might help explain the impacts, but it is hardly possible to do anything about food availability changes due to changes in prey population distribution by manipulating fishing levels. (See also Figure 1 in this regard, which shows that a shift in the distribution of sardine from West to South Coasts has not been caused by fishing.)

Page 29, para 4, "This body of evidence": This can't be called a "body of evidence" until it is confirmed to be so after a fulsome review process, a process which is presently ongoing. Note as well that none of the participants in the SPWG other than some biologists and DFFE scientists were invited to the BCFF workshop, and therefore none of these others (including industry participants) were able to attend.

Page 31, para 2: 'within and between analyses': To add in the final version of this report: "...and between different response variables".

Page 38, para 1. Not statistically significant for a number of models.

Page 39, Figure 10: These results assume that the closure impact on survival at Robben Island and Dassen Island are the same. When different closure effects are estimated, the estimate for Robben is much smaller than at Dassen. The PR presents graphs of the impact of island closures from the work of Sherley (2020) as Figure 10 on page 39. The IRP report of the 2020 IFSAW (Haddon et al, 2020. FISHERIES/2020/DEC/SWG-PEL/REVIEW/07) concludes that this work did not use the methods claimed in the methodological descriptions in that paper. These estimates do not therefore reliably reflect the results from the island closure experiment.

Page 41, Para underneath bullets: Many of the processes and claims made here have never been discussed in any meaningful way by the SPWG. A forum needs to be created to provide an opportunity for such discussions to take place amongst all relevant scientists and stakeholders.

Page 41, Para underneath bullets: statement: "These together with the existing body of literature showing the dependency of the African penguins on small pelagic fish necessitate that substantive measures are taken...": But elsewhere in the PR results are quoted saying that fishing is not a major driver.

Page 43, second main para: This is a substantial number of jobs.

Page 45: See last para: This paragraph presents a description of prevailing assumptions about sardine stock structure as used in formulating management recommendations for sardine as being definitive. This is far from the case: there are a number of recent scientific papers which raise questions about the particular structural assumptions made in current management models, and the SPWG is shortly to embark on a revision of the OMP for pelagics which will open a debate about the prevailing structure that it presently assumed.

Page 48, para 4: The exchange rate quoted is no longer appropriate as since early May 2021 the rand/dollar exchange rate has been comparable to the exchange rate used in Bergh et al (2016).

Page 49, para 3: Such adjustments as seem reasonable are already built into the OMP and into management approaches to date. Regarding the comment about making better commercial use of forage fish, this is completely out of place in a report concerned with mitigating declines in penguin population size. How would this benefit penguins?

Page 51, para 1: It is not a safe assumption that the benefit of closure asserted for Robben Island can be applied to all breeding islands.

Page 51, para 1: Does the island closure experiment not represent an effort in this regard?

Page 51, para 1, "The potential benefits of long term closures around breeding colonies in South Africa remains untested". The results so far from the island closure experiment suggest that this benefit is probably small.

Page 51, para 1, bullet point 11 "Expand investigations into penguin foraging ecology i.e. other colonies, and assess potential overlap with competing predators." The potential ecological impacts of culling seals should be modelled/investigated, especially with regard to how it would affect key fisheries species, including anchovy and sardine, and also particularly around specific islands. Seals are a particular concern, given that their population has increased enormously in the past 7-8 decades.

Page 51, para 2: "Such models need to account for appropriate temporal scales that accord to penguin life history stages.": what are these scales and why would they necessarily be important?

Page 51 and 52, General Comment: This is not a comprehensive list. Such a list should start with a comprehensive list of impacts and possible mitigations (together with costs and benefits and levels of uncertainty), which is then rationalised and prioritised into a smaller number of most effective actions, since it is unlikely that DFFE would have the resources or manpower to tackle them all.

Page 53, last para to the end: It is necessary to reiterate that the BCFF was a closed event, that none of the participants in the SPWG other than some biologists and DFFE scientists were invited to the BCFF workshop, and therefore none of these others (including industry participants) were able to attend.

D. Comments by Carryn de Moor

Pg3. Para2. Reword as "In response...developed a penguin population model to provide performance statistics during the development of the small pelagic fish OMP..." The Robinson model isn't "used in conjunction with" the OMP

Pg3. Para5. Last 2 sentences. Also Pg15. Para3. I understood there was agreement that food availability is a primary driver, but disagreement on the impact of fishing on that food availability (with some suggesting it is great and others not)?

Pg5. Para2. Lines 4-7. While we have previously used OMPs to set the sardine and anchovy quotas, we are not doing so now, and have not for 3 years for sardine & 1.5 years for anchovy. So please be fair and accurate and note that TAC/Bs have been set using ad hoc methods in the recent past (with the hope to return to newly tuned OMPs in the near future).

Pg5. Para2. Line 9. Also Pg16. Para2. Line3. Also Pg45. Para3 Lines1,2,3,4,5,7. Also Pg48. Para3, Line4. "multiple sardine stocks" Perhaps rather: "multiple sardine components". I recall we chose this term to distinguish between completely independent stocks.

Pg5. Para2. Lines 9-11. This current wording is misleading in that (a) the OMP is no longer used, (b) explicit spatial management was only implemented if west survey biomass < 100 000t thus not necessarily controlling high exploitation RATES at biomasses above 100 000t and (c) the OMP doesn't 'consider stock structure', but is rather developed using OMs that 'consider stock structure'. Perhaps rather "and the previously used OMP was developed taking this stock structure into account, and allowed for the implementation of spatial management to limit exploitation on the more productive western sardine component when surveys indicated this component was low".

Pg5. Para2. Line 11. "sardine component previously subject to higher exploitation" -> "sardine component subject to higher exploitation". It remains subject to higher exploitation; only 1 year where south had higher exploitation. See FISHERIES/2021/APR/SWG-PEL/23 for the latest update.

Pg5. Para2. Line 12. "annual harvest rates...are low" -> "are relatively low".

Pg6. Para1. Line4. "on the XXX of January..."

Pg6. Para1. Line 5. "her with A synthesis..."

Pg16. End of Para2. "than the southern component, yet is currently at a depleted level" or "yet is currently at a much lower level" or something to highlight that there is concern that sardine recruitment depends primarily on the west component. Otherwise this reads as 'that's interesting, I'm glad the west component is producing lots of recruits...!"☺

Pg17. Para2. Line 1. "Predation mortality is often THE LARGEST CONTRIBUTOR to ...M". Carl, you told me that it's the only contributor because even if fish get sick/old they get eaten... so natural mortality = predation mortality. This is important and needs to be clarified, because the analyses referred to in the subsequent paragraphs all make this assumption – either fish die due to predation or fishing and for no other reason.

Pg18. Para1. Line 6-7. "For both species, ASSUMING ALL NATURAL MORTALITY IS DUE TO PREDATION, estimates of the amounts consumed by predators..."

Pg18. Para1. Lines 11-12. "total sardine catch to estimated consumption by predators ASSUMING ALL NATURAL MORTALITY IS DUE TO PREDATION has generally..."

End of Pg18. I was left thinking 'so what...?!' But perhaps you don't need to explain everything?

Pg19. Fig3. Add reference to 2016/JUL/SWG-PEL/22REV2

Pg19. Line 2. "...has a relatively small impact in relation to predation (THE ONLY ASSUMED CAUSE OF NATURAL MORTALITY as described above), and..."

Pg19. There your one sentence logic doesn't follow. "There is strong evidence...(Punt et al)" does not link directly to our anchovy fishery of recruits. If you want to make both of those statements they need to be separate, not linked. Eg "(Punt et al 2015). The bulk (>70%) of the SA anchovy fishery catch consists of recruit fish of <1 year old."

PG19. Why did you only referred to total biomass with Dynamic B0 instead of (eff)SSB as well? Particularly since I know one of you regularly says that's what you care about☺. Note in FISHERIES/2020/APR/SWG-PEL/30 the sardine biomass is reduced to 70-80% but the sardine effective spawner biomass is ~60%. This is important. Please include it. I'm not sure what paper you were planning to cite with "de Moor (2020)" here, but you should refer to 2020b and add the anchovy assessment doc for reference.

Pg20. Please tell me where you got those plots from?

Pg 22. Line 2. "...over the period 1984-2005 WAS FOUND"

Pg27. Para2. Line 5-6. 'below a quarter of the maximum observed' This is a relative comment that could change when another boom occurs, as the maximum historical observed biomass is not absolute or time-invariant. Rather give the result in absolute terms e.g. 'below approximately 330 000t'

Pg27. Para3. Line 1. I think you're missing a word at the end of the line, e.g. "...demographic PARAMETERS, condition..."?

Pg29. End of Para2. Add a comment that "While some International Review Panel (IRP) members have remained constant and been part of every review related to the feasibility study and closure experiment, other panel members differ annually". This is important to note upfront as there is some discontinuity in (a) who does the reviewing and (b) what they review, with panels typically being restricted in their review to a sub-set of the analyses.

Pg29. Para3. 3rd last line. Also Pg31 Para2, 5th line, Pg31 last line, Pg32 Para2 2nd line, Pg32 Para3 4th last line, Pg33 Para1 Line6, Pg33 Para2 Line1, Pg33 Para2 Line4, Pg33 Para2 Line6, Pg33 Para3 3rd last line, Pg34 Para3 Line4, Pg34 Para3 Line10, Pg34 Para4 Line1, Pg34 Para4 Line2, Pg35 Line2: "IRP" and "The Panel" are used interchangeable. Probably best to stick to IRP throughout.

Pg29. Para4. Line 6. '...been disputed by SOME PARTICIPANTS OF the SWG-PEL...'

Pg31. Para1, Line 2. Delete 2nd)) after MARAM.

Pg33. Para3. Line 3. "The second SET OF analyses..."

Pg33. Para3. Line7. "by SOME members of the SWG-PEL" or more accurately "SOME PARTICIPANTS"?

Pg33. Para3. Line11. "THE 2019 IRP confirmed..."

Pg33. Para3. Line14-16. You should note before this point, or else here, that Sherley had included random effects in his model thus far. So the comment related to incorporating an APPROPRIATE

random effects structure. Otherwise I read this that the IRP suggested the use of (appropriate) REs for the first time that year.

Pg34. Para3. Line1. This isn't accurate. The panel were given limited scope in their review with key questions: two 'against' Sherley and one 'against' Butterworth and the 2nd 'against' Butterworth was cut off. Perhaps rather "In December 2020 the IRP was requested to review specific aspects of both sets of analyses and to comment on their appropriateness..."

Pg35. Line2. Add ',' after 'survival estimates, the'

Pg35, Line5. "...but that additional work is warranted if a decision is not required immediately"

Pg36. 2009 block. Writing overlapping

Pg36. 2014 block. The ":" after "IRP:" is on a separate line

Pg37. 2019 block. 2nd last line. Delete 'panel' after 'IRP'

Pg38. Para2. Lines7-11. English/readability could be improved if this is broken into multiple sentences.

Pg40. Fig 11. "Zeh plots" are not explained for the readers.

Pg41. Para2. Lines4-8. Something is required at the end of the sentence e.g. "They further add that given (a whole bunch of concerns) SOMETHING MUST BE DONE?"

Pg31. Para3. Line1. Delete ")" after "results"

Pg42. 3rd bullet. I don't think it was mentioned earlier that St Croix is the largest remaining colony and thus there's greater concern about ensuring this one doesn't decrease. I know that has been an important point regularly discussed in the SWG-PEL. Not sure if this should be mentioned here in the light of these remaining uncertainties, or if it is best placed earlier in the document.

Pg43. Para2. Line7. "Around 85% of the DIRECTED sardine catch..."

Pg44. Para1. Line 2-. "The TACs and TABs are TYPICALLY set using...abundance (Coetzee et al. 2019). IN RECENT YEARS, HOWEVER, DUE TO EXCEPTIONAL CIRCUMSTANCES, TACs and TABs HAVE BEEN SET USING AD-HOC METHODS. A NEW OMP IS PLANNED FOR IMPLEMENTATION IN 2023. The OMP uses an agreed-upon set of harvest control rules and pre-specified data AND WAS TUNED USING OPERATING MODELS that incorporate...catch data. HARVEST CONTROL RULE (HCR) formulae were selected..."

Pg45. Para1. Lines 4-5. I think you've confused what 'critical biomass' is here and below. Critical biomass is a total (not west) level of observed survey biomass below which the shape of the HCR changes. Also risk is given in terms of resource biomass so you're repeating yourselves. I suggest "..including those pertinent to risk to the RESOURCE, CATCHES and catch variability..."

Pg45. Para1. Line 7. "...selected risk thresholds WERE (i) a FIFTEEN% probability..."

Pg45. Para1. Line9. "(the lowest observed SINCE 2000) over the projection period..." See de Moor 2018

Pg45. Para1. Line10, "NINETEEN% probability..."

Pg45. Para1. Line 11. "...compared to a TWO% probability" Don't know where you got those other values from?

Pg45. Para3. "...OMP-18 WAS DEVELOPED USING a two-mixing COMPONENT OPERATING model for sardine..."

Pg45. Para3. Last line to Pg46 Para1. This is all a bit muddled, again between what is a constraint versus a threshold etc. "...in the former, OMP-18 RISK CONSIDERATIONS FOCUSED on the sardine west component. IN ADDITION OMP-18 INCLUDED A THRESHOLD LEVEL FOR OBSERVED western COMPONENT biomass BELOW WHICH EXPLICIT SPATIAL MANAGEMENT MEASURES WOULD BE IMPLEMENTED, AIMED AT ENSURING THE EXPLOITATION RATE OF SARDINE OFF THE WEST COAST DID NOT GET TOO HIGH AT VERY LOW BIOMASS LEVELS. THE SPATIAL DISTRIBUTION OF DIRECTED SARDINE CATCHES WOULD ALSO BE MONITORED, AND IF REALISED SPATIAL DISTRIBUTIONS IN THE CATCH WERE DIFFERENT TO THOSE ASSUMED DURING OMP-TESTING, THE HCR-CALCULATED TAC WOULD BE ADJUSTED. The decline in the sardine population..."

Pg46. Para2. Line 8. "...but has declined subsequently FOR SOUTH COMPONENT, with occasional high..."

Pg45. Para2. Last line. "Exploitation rates SINCE 1995 have..."

Pg47. Para1. Line2. "..anchovy and sardine ABUNDANCES" delete 'and anchovy' repeat

Pg47. Para1. Line3. Not 'risk' to the African penguin pop, but rather demographic parameters. Perhaps say '...using RELATIONSHIPS BETWEEN SARDINE AND THE African penguin population...of the small pelagic fishery TO DETERMINE IMPACTS OF CHANGES IN THE SARDINE POPULATION ON THE PENGUIN POPULATION' Perhaps you can improve the English, or split that into 2 sentences.

Pg47. Para1. Lines11-12. "...relationship between PENGUIN adult mortality...with PENGUIN mortality increasing rapidly when SURVEY ESTIMATED biomass dropped..."

Pg47. Para2. Line 4. "...indicatED that even with..."

Pg47. Para2. You should also comment how many times the survey estimated biomass was predicted to go below the threshold of 330 000t given its mention above.

Pg48. Para4. Line 3. CONSIDERED not "considers the unique..."

Pg 51. Bullet 8. Does this refer to the effect of parasites on penguins, prey or both? Please clarify.

Pg 51. Bullet 10. 'Expand investigations into...' this appears to assume that it is simple/feasible to do so, yet I understood from one of our meetings at the end of last year that further monitoring could have a negative impact on the penguins. I appreciate you refer to looking at alternative forms of monitoring in the next bullet, but perhaps this bullet should say something like 'expand investigations...if feasible without negatively impacting penguin survival'?

Pg 52. Last bullet. Spatial management of OMPs to account for the needs of dependant predators at appropriate spatio-temporal scales requires models, and therefore data, at such scales which I believe we don't have. Please clarify what is intended here?

forestry, fisheries
& the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS 206570
Enquiries: J Beaumont/S Middleton
Telephone: 021 819 2410/021 402 7441
Cellphone: 082 653 0625/082 371 6088

MINISTER

A SYNTHESIS OF CURRENT SCIENTIFIC INFORMATION RELATING TO THE DECLINE IN THE AFRICAN PENGUIN POPULATION, THE SMALL PELAGIC FISHERY AND ISLAND CLOSURES

1. PURPOSE

It is recommended that:

1.1 Minister note the attached report that provides a synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures and comments provided thereon. The documents include:

- **Annexure A**: Report - A Synthesis of Current Scientific Information Relating to the Decline in the African Penguin Population, the Small Pelagic Fishery and Island Closures
- **Annexure B**: Comments from the Top Predator Scientific Working Group (B: O&C)
- **Annexure C**: Comments from the Scientific Working Group Small Pelagic (B: FM)
- **Annexure D**: Comments from SANParks; and

1.2 note that further recommendations will be made by the GF, on proposed island closures.

2. BACKGROUND AND DISCUSSION

2.1 A joint 'Governance Forum' (GF or Decision-making Forum), comprising DDGs and senior officials of Branch: Oceans and Coasts (B: O&C) and Branch: Fisheries Management (B: FM), as well as South African National Parks (SANParks), was established by the Department of Forestry, Fisheries and the Environment (DFFE) on 22 February 2021. The first task of this Forum was to synthesise scientific information relating to the decline of the African penguin and closures to fishing around their breeding colonies. This information would enable the Minister to make decisions in this regard.

2.2 The Minister advised that the GF should be guided by the National Environmental Management Act (NEMA, Act 107 of 1998) and its principles of (amongst others) conservation, sustainable use and the

precautionary approach. This was in response to recommendations to the Minister by SANParks and the Top Predator Scientific Working Group (B: O&C) that were supported by BirdLife SA, WWF-SA, SANCCOB and others to immediately implement long-term closures to purse-seine fishing around the six largest penguin breeding colonies.

2.3 The GF established a Drafting Team comprised of DFFE and SANParks scientists to prepare a report on the current state of African penguins, relevant fisheries management and the socio-economics of island closures and penguin-related tourism considering the precautionary principles. That report is attached **(Annexure A)**. The Report is 69 pages in total and begins with an executive summary from pages 3 to 7.

2.4 The report has been circulated to the Top Predator Working Group (B: O&C), the Small Pelagic Fishery Scientific Working Group (B: FM) and SANParks. Their comments are also attached **(Annexure B, C and D)**. The three sets of comments provide insights into the content and information summarised in the document. In addition, the report will be sent to three external expert reviewers requesting their review. It must be noted that throughout the process the focus on island closures was debated with Branch O&C and SANParks arguing that the island closures must be the focus of the report, while Branch Fisheries argued that all pressures and responses must be included in the report. This tension is evidenced in the comments provided. The matter was addressed by including the interventions from the Penguin Biodiversity Management Plan.

2.4.1 Key strategic comments from the Top Predator Working Group are that scientific debate and call for further science investigations have postponed island closures for 13 years, and even longer when considering that this was initially considered as early as 2006. The penguin populations is declining dramatically and there is the real risk that the population could fall below the point of recovery. There is sufficient, scientifically tested (peer-reviewed published) research and anecdotal evidence on the link between prey availability and penguin success to implement island closures. Arguments from researchers against closures have not been scientifically tested through peer-reviewed publications.

2.4.2 Key strategic comments from the Small Pelagic Fishery Working Group are that all pressures on penguins must be investigated. The focus on the relationship between prey availability and penguin success detracts from a full investigation of the causes for penguin decline. Island closures to fisheries will not have a significant impact on penguin success. More research programs, including modelling the benefits of all interventions, are required. Island closures will have negative impacts on the small pelagic fishing industry.

2.5 Independently of both the Scientific Working Groups, SANParks has provided a set of comments on the synthesis report. SANParks notes that 55% of the surviving penguin population resides within their

jurisdiction and they must therefore act on the conservation and protection mandate. SANParks supports the closure of the island to fisheries to prioritise prey for penguins.

2.6 Although the comments provide an indication of the significantly different views and perspectives from the 2 Working Groups, the process has created sufficient common purpose for a constructive discussion on possible scenarios for island closure. The next step, therefore, is to finalise a draft scenarios document on priority measures to be taken to reduce the decline of the African Penguin population. This will be the basis for a further discussion aimed at reaching an agreement on the specific actions, responsibilities and timeframes. As guided by the Minister, this meeting will be facilitated by Mr Shoni Munzhedzi.

2.7 The Branch O&C is compiling recommendations on island closures (ie. closure to fishing) on the basis of documents prepared at the end of 2020. These recommendations are being updated with information gathered during this task team's work and will further be informed by the discussions at the facilitated meeting. The recommendations will support interventions included in the penguin biodiversity management plan (BMP). Public comments on the BMP are currently being interrogated.

2.8 The Branch: O&C has raised a concern that the small pelagic fisheries stocks, sardine, in particular, have declined considerably. At present, the fishery total allowable catch is calculated annually on an ad hoc basis outside an operational management procedure. There is concern whether continued fishing at these low levels will have more consequences for ecosystem functions.

2.9 Once decisions on interventions are made, there will be the need for stakeholder engagement with the conservation non-government organisations and the small pelagic fishing industry. These should be planned proactively, including the consideration of separate and combined engagements similar to the process followed by the Branch B&C in the High Level Panel.

3. OTHER BRANCHES CONSULTED

The drafting team comprised three scientists from the Branch Fisheries Management, three from the Branch: Oceans and Coasts and two from SANParks.

4. IMPLICATIONS

Personnel:	None.
Financial:	None.
Legal:	None.
Communication:	None.

5. OTHER BRANCHES/CHIEF DIRECTORATES CONSULTED

The Chief Directorate: Oceans and Coastal Research was consulted.

6. RECOMMENDATIONS

It is recommended that you:

6.1 note the attached report that provides a synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures and comments provided thereon. The documents include:

- **Annexure A**: Report - A Synthesis of Current Scientific Information Relating to the Decline in the African Penguin Population, the Small Pelagic Fishery and Island Closures
- **Annexure B**: Comments from the Top Predator Scientific Working Group (B: O&C)
- **Annexure C**: Comments from the Scientific Working Group Small Pelagic (B: FM)
- **Annexure D**: Comments from SANParks; and

6.2 note that further recommendations will be made by the GF, on proposed island closures.

SUPPORTED/SUPPORTED AS AMENDED/NOT SUPPORTED

DEPUTY DIRECTOR-GENERAL: OCEANS AND COASTS
DATE:

A SYNTHESIS OF CURRENT SCIENTIFIC INFORMATION RELATING TO THE DECLINE IN THE AFRICAN PENGUIN POPULATION, THE SMALL PELAGIC FISHERY AND ISLAND CLOSURES

RECOMMENDED/RECOMMENDED AS AMENDED/NOT RECOMMENDED

DIRECTOR-GENERAL
DATE:

A SYNTHESIS OF CURRENT SCIENTIFIC INFORMATION RELATING TO THE DECLINE IN THE AFRICAN PENGUIN POPULATION, THE SMALL PELAGIC FISHERY AND ISLAND CLOSURES

RECOMMENDATIONS:

5.1 Note the attached report that provides a synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures and comments provided thereon. The documents include:

- **Annexure A**: Report - A Synthesis of Current Scientific Information Relating to the Decline in the African Penguin Population, the Small Pelagic Fishery and Island Closures
- **Annexure B**: Comments from the Top Predator Scientific Working Group (B: O&C)
- **Annexure C**: Comments from the Scientific Working Group Small Pelagic (B: FM)
- **Annexure D**: Comments from SANParks

NOTED/NOTED WITH COMMENT

5.2 Note that further recommendations will be made by the GF, on proposed island closures.

NOTED/NOTED WITH COMMENT

MS B D CREECY
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT
DATE:

From: Ashley Naidoo <ANaidoo@dffe.gov.za>
Sent: Monday, July 17, 2023 2:40 PM
To: Alistair McInnes <alistair.mcinnes@birdlife.org.za>; Lauren Waller <laurenw@ewt.org.za>
Subject: Re: Confirmation of "agreement: at June meeting?

Thank you Alistair and Lauren

I am hoping the draft report gets to Minister this week – its already with Lisolomzi – as I want to distribute the Panel report as soon as I can. If there is agreement by end of the month – this can be implemented from 1 August – so time line is really the next two weeks if at all possible.

Thank you
Ashley

From: Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Date: Monday, 17 July 2023 at 13:38
To: Ashley Naidoo <ANaidoo@dffe.gov.za>, Lauren Waller <laurenw@ewt.org.za>
Subject: RE: Confirmation of "agreement: at June meeting?

HI Ashley

Apologies for the delay – was on Dyer Island last week so just catching up. We did reach out to Redah during the meetings and he was happy to go with a boundary that we interpreted as the proposal you suggested. However, given that there were new versions of the mIBAs proposed during the international review we wanted to clarify this with a separate meeting with him. Lauren did extend an invitation to try and accomplish this but we haven't heard back from Redah yet. We will try and follow up with this asap. What are your timelines for a response?

Many thanks and regards

Alistair

From: Ashley Naidoo <ANaidoo@dffe.gov.za>
Sent: Friday, July 14, 2023 9:12 AM
To: Lauren Waller <laurenw@ewt.org.za>; Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Subject: Confirmation of "agreement: at June meeting?

Dear Alistair and Lauren

I am now drafting my report to Minister – which I am hoping to get back from the editing and layout people by end of next week and permission to share the Report the following week - end July or first week of August. (As the Panel stated previously, they did not stipulate any specific closures but provided mechanisms and suggestions to balance benefit and cost.)

I do recall that you had an agreement of sorts with Algoa Bay Islands. I want to confirm my notes that you have agreement for St. Croix as the DFFE 2021 proposal as attached here on page 5 – first row.

Then also on Bird Island – was there agreement on the current interim closures which is the CAF suggestion – on page 6 last row.

The intention here is that any agreement among the participants is first prize in negotiation.

Thank you
Ashley

forestry, fisheries
& the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS 223574
Enquiries: Drs A. Naidoo/ L. Fikizolo
Cellphone: 082 784 7131/084 625 1333

DIRECTOR-GENERAL

PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO APPROVE THE EVALUATION FORM FOR THE DETERMINATION OF THE CATEGORY AND REMUNERATION LEVEL OF THE BOARDS OF CERTAIN PUBLIC ENTITIES, STATUTORY AND OTHER INSTITUTIONS ON THE NATIONAL LEVEL BY THE NATIONAL TREASURY FOR THE ESTABLISHMENT OF A PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES AND THE DECLINE IN THE PENGUIN POPULATION

1. PURPOSE

To request the DG to –

1.1 note progress update and the plan on the establishment of the Expert Panel and describe the project plan.

1.2 sign the accompanying letter and Evaluation Form to National Treasury for the remuneration of the proposed panel of experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies and the decline in the penguin population.

2 BACKGROUND AND DISCUSSION

2.1 South Africa has seen a substantial decrease in the number of adult African Penguins since the mid-2000s considered to be caused by a number of different drivers including food competition between penguins and the small pelagic purse seine fishing. This fishery overlaps with foraging

areas around major penguin breeding colonies at Dassen, Dyer, Robben, Stony Point, St Croix and Bird Islands, which vie for the same resources, sardines and anchovies. To further understand this, a study was initiated from 2008 until 2021 to assess the effects of closure to purse-seine fishing around penguin breeding colonies. The results have been controversial, with different opinions on how to interpret them.

2.2 This prompted the Minister to establish the Governance Forum in 2021 to provide a synthesis of the current scientific information relating to island closures and African penguin population declines. The Governance Forum was further supported by the Extended Task Team whose objective was to propose actions to slow the decline of the African penguin through; (i) exploring overlaps in penguin forage areas and small pelagic fishing; and (ii) developing a science plan to investigate the cause, possible interventions and impact of interventions. No agreement was reached between the Extended Task Team and the observer representatives on the possible interventions and their impact.

2.3 The Consultative Advisory Forum (CAF) for Marine Living Resources was then tasked by Minister to develop recommendations on limiting small pelagic fishing activities adjacent to penguin colonies. A range of documents and presentations were provided to CAF and joint recommendations were sought on potential island closures. CAF recommended a compromise between two positions provided by conservation and the fishery industry, through a 50:50 approach using Marxan, a decision support software tool. The CAF recommendations have not been widely accepted by both sectors and further requested the Minister to appoint an International Panel that would review:

a) quantitative scientific analyses of the Island Closure Experiment (ICE) and subsequent publications to evaluate whether the scientific evidence from ICE indicates that limiting small pelagic fishing around colonies provides a meaningful improvement to penguin parameters that have a known scientific link to population demography in the context of the present rate of population decline.

b) Assess the cost-benefit trade-off of 1) costs to fisheries, versus 2) the proportion of penguin foraging range protected during the breeding season, for different fisheries exclusion scenarios. The losses to the fishery should be fleshed out using available economic information, such as was used in the GF and CAF processes.

2.4 While preparations to set up the Panel are underway, the Minister announced the implementation of preliminary closures from 1 September 2022 – 14 January 2023 while the process to appoint the Review Panel is underway. The Branch is in the process of finalizing the request for the Panel of Experts for publication in the Government Gazette. The Gazette will be published for 30 days to allow submission of the nominations. An order number was created for the Government Gazette on the 21 of October. The gazette calling for nominations will be published on Friday the 28th of October or Friday the 4th of November 2022, depending on confirmation from the Government Gazette. The schedule of activities and timelines for the creation of the panel and its operation is attached an Annexure 1. In the present planning the Panel will conclude their work on the 11th of January 2022. The present interim closures end on the 14th of January 2022. There are activities that are dependent on factors external to the Department such as advice and concurrence from National Treasury on the remuneration scales and the availability of Panel members. Parallel to this process it its therefore advised that consideration be given to engage stakeholders on the possibility of extending the current interim closures. As agreement is unlikely based on the last 3 years of interactions, it may be necessary for the Branches Fisheries and Oceans and Coasts to develop an internal recommendation on extending the current closures in its present of modified form.

2.5 The Panel is being established under Section 3 A of the NEMA, and as such requires that the remunerations scales be determined with concurrence by the Minister of Finance. The appended Evaluation Form for the determination of the category and remuneration levels from the National Treasury is required to first get an indication from National Treasury on the remuneration which can then be used to consult the Minister of Finance. The completed Evaluation Form will be submitted to National Treasury for evaluation where recommendations from the National Treasury will revert to the Department with the appropriate fee structure. The Evaluation Form is attached as Annexure 3. Annexure 2 is a letter to the Head of the Public Entities Unit requesting assistance in determining the remuneration scales. This submission requests that DG signs the Request Letter and the Evaluation Form.

2.6 Annexures included:

Annexure 1: Project Plan for the establishment of the Panel and its Work

Annexure 2: Letter to head of Public Entities Governance Unit at National Treasury

Annexure 3: Evaluation Form for Boards

Annexure 4: Terms of reference for the Review Panel

3 IMPLICATIONS

Personnel:	None.
Financial:	The above is already included in the approved budget.
Communication:	None.
Legal:	None.
Organisational structure:	None.
Policy:	None.
Delegation:	None.

4 OTHER BRANCHES/ CHIEF DIRECTORATES CONSULTED

None.

5. RECOMMENDATIONS

It is recommended that the DG —

5.1 note progress update and the plan on establishment of the Expert Panel and describe the project plan.

5.2 sign the accompanying letter and Evaluation Form to the National Treasury for the remuneration of the proposed panel of experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies and the decline in the penguin population.

RECOMMENDATION SUPPORTED / SUPPORTED WITH AMENDMENTS / NOT SUPPORTED

DEPUTY DIRECTOR-GENERAL: OCEANS & COASTS (ACTING)

DATE:

PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO APPROVE THE EVALUATION FORM FOR THE DETERMINATION OF THE CATEGORY AND REMUNERATION LEVEL OF THE BOARDS OF CERTAIN PUBLIC ENTITIES, STATUTORY AND OTHER INSTITUTIONS ON THE NATIONAL LEVEL BY THE NATIONAL TREASURY FOR THE ESTABLISHMENT OF A PANEL OF EXPERTS TO ADVISE ON THE PROPOSED FISHING AREA CLOSURES ADJACENT TO SOUTH AFRICA'S AFRICAN PENGUIN BREEDING COLONIES AND THE DECLINE IN THE PENGUIN POPULATION

RECOMMENDATIONS:

5.1 note progress update and the plan on establishment of the Expert Panel and describe the project plan.

APPROVED/ APPROVED AS AMENDED/ NOT APPROVED

5.3 sign the accompanying letter and Evaluation Form to the National Treasury for the remuneration of the proposed panel of experts to advise on the proposed fishing-area closures adjacent to South Africa's African penguin breeding colonies and the decline in the penguin population.

LETTER SIGNED/ SIGNED AS AMENDED/ NOT SIGNED

DIRECTOR-GENERAL
DATE:

AOT

1042
"SFA14"

Workflow Details

225823 PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS

Date Initiated:	Initiator:	Current Performer:	Due Date:	Done Date	Workflow Status:
11 January 2023 11:26 AM	Nosiseko Mhlahlo	WF: Central Registry	28 February 2023 02:18 PM		Executing

Initiator Comments:
Dear DDG Please find attached for your recommendation. Thanks Nosiseko

Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
Step 02 - Deputy Director-General	Lisolomzi Fikizolo	Forward request	13 January 2023 11:26 AM	18 January 2023 12:36 PM	This is an update for the office of the DG and the Minister on the establishment of the international expert panel on fisheries and penguins interactions.
Step 02B - CD: Budget & FM	veronica steyn	Funds available	20 January 2023 12:36 PM	20 January 2023 04:01 PM	The progress report supported. Funds available for expert panel subject to compliance with National Treasury remuneration determination. Veronica Steyn CD:B&FM
Step 02C - CFO	Andiswa Oyama Jass	Authorised to proceed	24 January 2023 04:01 PM	23 January 2023 05:36 PM	The submission is supported. A. Jass 23/01/2023
Step 04 - Language Practitioner	Siphesihle Mnguni	Forward to DG	26 January 2023 05:36 PM	24 January 2023 01:54 PM	DG, kindly find the attachment for your approval. Siphesihle
Step 05 - Director-General	Nomfundo Tshabalala	Recommended	26 January 2023 01:54 PM	16 February 2023 11:01 AM	Can the branch ensure the submission is supported by the evidence of the approval of the rates. Can the financial implications estimates be provided. Facilities Management need to be consulted to ensure that the request complies with prescripts. Reviewer's Comments Date: 02/01/2023 01:27 PM Step Name: Step 04 - DDG Performer: Lisolomzi Fikizolo (lfikizolo) All the queries raised in an

earlier submission on this matter have all been addressed in the current submission. The branch is in full support that it processed further. Date: 02/01/2023 12:17 PM Step Name: Step 03 - Chief Director: Travel Services Performer: Zachariah Mokganye (zmokganye) Supported on Travel request budget will be made available from the branch. Date: 01/31/2023 01:10 PM Step Name: Step 02 - Director: Travel Services Performer: Vinesh Naidoo (vnaidoo) supported Date: 01/30/2023 08:19 AM Step Name: Step 01 - Director Performer: Ashley Naidoo (anaidoo) Dear DG, financial estimates have been included on the logistics and remuneration, additionally the workflow will be routed through facilities for comment on prescripts. The Submission has being updated to include progress on the Plane work and their planned scheduled. Thank you, Ashley N. PS. I have also requested through EDMS Helpdesk, through logging a call via the EDMS Help link, that this workflow be routed via Facilities senior managers. ==++== CD Comms for sign of on the draft media statement. DG 01/02/2023 ==++== Reviewer's Comments Date: 02/09/2023 01:58 PM Step Name: amodise Performer: Albi Modise (amodise) Good day Please note that there are no documents attached. Thanks Reviewer's Comments Date: 02/14/2023 01:03 PM Step Name: amodise Performer: Albi Modise (amodise) The submission is noted. Communications issued

					the included media statement on the 13 February 2023 announcing the panel to the general public. ==++== Recommended with the revised media statement dated 13/02/2023. Nomfundo Tshabalala. 16/02/2023. ==++==
Step 05D - Print Documents for DG	Sabastian Adams	Document(s) printed	20 February 2023 11:01 AM	16 February 2023 03:20 PM	
Step 05E - Scan & Attach Signed Submission	Sakhile Shongwe	Scanned docs attached	20 February 2023 03:20 PM	24 February 2023 02:18 PM	Ministerial Approval of 20/02/2023 has been loaded. Sakhile
Step 06A - Workflow Complete	Nosiseko Mhlahlo	Send to Archive	28 February 2023 02:18 PM	16 March 2023 08:34 AM	
Step 06B - Central Registry	WF: Central Registry		28 February 2023 02:18 PM		

225823 PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS - Step 05 - Director-General - Review

Review Title	Reviewer	Review Date Due	Review Date Done	Instructions
225823 PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS - Step 05 - Director-General - Review	Steps Completed		09 February 2023 01:58 PM	'==++==\r\nCD Comms for sign of on the draft media statement.\r\n\r\nDG 01/02/2023\r\n==++=='

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
amodise	Albi Modise			09 February 2023 01:58 PM	Good day Please note that there are no documents attached. Thanks

225823 PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS - Step 05 - Director-General - Review

Review Title	Reviewer	Review Date Due	Review Date Done	Instructions
225823 PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS - Step 05 - Director-General - Review	Steps Completed		14 February 2023 01:03 PM	"

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
amodise	Albi Modise			14 February 2023 01:03 PM	The submission is noted. Communications issued the included media statement on the 13 February 2023 announcing the panel to the general public.

225823 PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS - Step 05 - Director-General - Review

Review Title	Reviewer	Review Date Due	Review Date Done	Instructions
225823 PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES & PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS - Step 05 - Director-General - Review	Steps Completed		01 February 2023 01:28 PM	'Can the branch ensure the submission is supported by the evidence of the approval of the rates. Can the financial implications estimates be provided.\r\n\r\nFacilities Management need to be consulted to ensure that the request complies with prescripts.\r\n'

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
Step 01 - Director	Ashley Naidoo	Recommended		30 January 2023 08:19 AM	Dear DG, financial estimates have been included on the logistics and remuneration, additionally the workflow will be routed through facilities for comment on prescripts. The Submission has being updated to include progress on the Plane work and their planned scheduled. Thank you, Ashley N. PS. I have also requested through EDMS Helpdesk, through logging a call via the EDMS Help link, that this workflow be routed via Facilities senior managers.
Step 02 - Director: Travel Services	Vinesh Naidoo	Recommended		31 January 2023 01:10 PM	supported
Step 03 - Chief Director: Travel Services	Zachariah Mokganye	Recommended		01 February 2023 12:17 PM	Supported on Travel request budget will be made available from the branch.
Step 04 - DDG	Lisolomzi Fikizolo	Recommended		01 February 2023 01:28 PM	All the queries raised in an earlier submission on this matter have all been addressed in the current submission. The branch is in full support that it processed further.

AM

forestry, fisheries & the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS 225823
Enquiries: Drs A Naidoo/ L Fikizolo
Cellphone: 082 784 7131/084 625 1333

MINISTER

PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES AND PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS

1. PURPOSE

1.1 Brief the DG and Minister on the establishment and work schedule of the Panel

1.2 to request approval from the DG for the payment of the Panel as per the rate approved by National Treasury at level of B1

1.3 to request approval from the DG for the travel and associated costs of the Panel at Business Class rates

1.4 to request that Minister sign the letter of invitation for Dr Evá Plaganyi to travel to the meeting in June 2023

1.5 to provide draft media statement on the establishment of the Expert Review Panel on Fisheries and Penguin Interactions to the Minister for approval.

2. BACKGROUND AND DISCUSSION

2.1 Minister approved the Panel recommendations on 7 December 2022. Subsequently, and during the following two days appointment letters were emailed to all members of the Panel. Positive responses were received from all five candidates, with some clarifying questions that were referred to and answered by Dr Naidoo. The Panel consists of Prof Robert Furness (UK); Dr Ana Parma (Argentina); Dr Éva Plagányi (Australia); Prof André Punt (USA) and Prof Phillip Trathan (UK). Prof Punt has accepted Minister's nomination as Chair of the Panel.

2.2 Drs Fikizolo and Naidoo convened the Panel for their first introductory online meeting on 22 December 2022. The objective of the meeting was to clarify the Terms of Reference (TOR) and tentatively schedule the Panel's work. The Panel clarified the following issues:

2.2.1 The Panel is constituted as a Scientific Review Panel and will therefore focus its work on reviewing the existing science related to penguin-small pelagic fisheries interactions.

2.2.2 The Panel will seek to comment on the state of evidence to show relationships between the limiting of fishing and penguin population success and will also aim to develop decision considerations in evaluating trade-offs. The Panel will not specify closures, as this is a management and policy decision.

2.2.3 The Panel recognised that the composition of the Panel does not include an economics expert, and there will be economics science inputs required especially on the fishing limitation cost to the fishery. The Panel also indicated that early in their work they could assist with developing the outcomes for this economic assessment of potential loss. A consideration here can be to ask the Fishing Industry Association to commission such a report in early 2023.

2.2.4 Furthermore, the Panel requested that notice be given to the Fisheries and Conservation Representatives to construct a synthesis document of their arguments regarding the interpretation of the motivations around their perspectives on limiting fishing around penguin colonies and fishing closure options. The Panel further developed the requirements of these synthesis reports at their first meeting.

2.3 Prof Punt, as Chair of the Panel, hosted a first closed meeting of the Panel on the 10 of January 2023. The Panel at this first meeting considered a schedule of two meetings, an online one from March 20 to 23 and a second physical meeting in Cape Town from 5 to 9 June 2023. Several of the Panel Members have work commitments already scheduled for the first quarter of 2023, hence the working schedule from March 2023. The Panel members have already started engaging with the background reading, through a shared folder of readings set up by Dr Naidoo in December 2022. The Panel, in addition to scheduling the March and June meetings, have also made several additional references and data requests. These have been shared with the DFFE scientists (Fisheries, Oceans & Coasts & SANParks) to collate. Additionally, some of the Panel data and information requests will have to be passed on to the fishing sector and conservation sector representatives for collation and submission. This will be done by January 31, 2023.

2.4 The March meeting will allow the Panel to receive presentations, with the aim of clarifying issues that are not clear from the documents already received and the additional material requested during the first three days, with day four reserved for deliberations. The second in-person meeting will receive any final

information and deliberate on the specified outcomes of the Terms of Reference. This meeting should produce a working draft of an executive summary of the Panel conclusions.

2.5 The scheduling of the work of the Panel has implications for the current interim closures. The closures with an extension of three months are due to expire on 15 April 2023. The Panel would have started but not completed its work by then. The Branch, through its senior managers, will again engage the stakeholders on a further extension of the interim fishing closures. An additional four months ending 15 August 2023, should allow for the work of the Panel to be completed and for any recommendations to be prepared for implementation. In previous engagements there was general appetite for an extension of interim fishing closures from the Conservation Sector, the West Coast Small Pelagic Fishing Representative, but less support from the South East Coast Small Pelagic Representative.

2.6 Regarding remuneration of the Panel, colleagues in the CFO Branch have engaged Treasury on both the Lion and Penguin Panels. Treasury, through correspondence from the Minister of Finance, has set remuneration for the NEMA Section 3A Panels at the level of B1 – see Annexure 1. The B1 Level offers R4 317 for the Chair and R2 619 for members per day. An estimation of the number of days required would be made after the Panel has had some time to plan their work, and in particular assess the preparation time needed outside the formal meetings. Traveling from various countries will be required for the physical meeting, and it is motivated that as these are all senior persons in their organisations, serving on a Ministerial Panel, that Business Class Travel is offered. Accommodation will be required for the five working days of the physical meeting and additionally a day or two on either side of the meeting depending on flight arrangements.

2.7 Dr Éva Plagányi has requested a letter of invitation for the June travel, this letter is attached for Minister's signature as Annexure 2.

2.8 SANBI has offered to host the Panel for the physical meeting subject to availability. If this option is not available, then the Panel will be hosted at a suitable meeting or conference venue in Cape Town. Approval is also requested to host a dinner for the Panel and senior managers, for a total of 10 to 12 persons. As the Panel may need to have continued internet access for on-line engagements a venue with back-up electricity will be needed.

2.9 There has been several articles in the media on the plight of the penguins and the fishery/penguin interactions. A media statement is drafted to announce the Panel membership and their planned work.

A01

This is attached as Annexure 3, and follows a similar media statement late last year announcing that such an expert Panel was to be established.

2.10 Annexures included:

Annexure 1: Correspondence from Minister on Finance setting the B1 rate for NEMA 3A Panels
Annexure 2: Letter on Invitation for Dr Éva Plagányi for Minister's Signature
Annexure 3: Draft Media Statement announcing the Panel

3. IMPLICATIONS

Personnel:	None.
Financial:	Business Class Travel for the five Panel Members, Accommodation for five days, and any additional days depending on flight arrangements. Cost of one hosted dinner for ten to twelve persons. The estimation here will be between R 400 00 and R 600 000. The Panel will have to be remunerated as per the B1 rate. This final amount will be based on the number of days spent on preparation in addition to the travel and meetings days. If 9 weeks (45 days) is assumed for the Chair and 8 (40 days) weeks for each of the Panel members then the remuneration cost is estimated at R4 317 X 45 for the Chair = R194 265 and R2 619 X 40 for each Panel Member = R104 760 (X 4 = R419 040), with total for Panel members plus Chair = R 613 080. The Panel will also claim the Department rates for meals and incidental expenses, within the approved DFFE policy. Provision will be made in the Branch Oceans and Coasts for these costs in the 2023 financial year.
Communication:	A Press Statement is submitted an Annexure 3.
Legal:	None
Delegations:	None.

4. OTHER BRANCHES/ CHIEF DIRECTORATES CONSULTED

CFO on the payment rates and the Fisheries Branch on the Panel objectives and operations have been consulted.

PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES AND PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS

5. RECOMMENDATIONS

It is recommended that DG:

5.1 Note the Briefing on the establishment and work schedule of the Panel

5.2 Approve the payment of the Panel as per the rate approved by National Treasury at level of B1

5.3 Approve the travel (Business Class) and associated costs (accommodation, one-hosted dinner, subsistence & incidentals)

5.4 Recommend that Minister sign the letter of invitation for Dr Evá Plaganyi to travel to the meeting in June 2023

5.5 Recommend that Minister approve for release the draft media statement on the establishment of the Expert Review Panel on Fisheries and Penguin.

RECOMMENDATIONS:

5.1 NOTED/NOTED WITH COMMENT

5.2 APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.3 APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.4 RECOMMENDED/RECOMMENDED AS AMENDED/NOT RECOMMENDED

5.5 RECOMMENDED/RECOMMENDED AS AMENDED/NOT RECOMMENDED

DIRECTOR-GENERAL

DATE:

PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES AND PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS

5. RECOMMENDATIONS:

It is recommended that Minister:

5.1 Note the Briefing on the establishment and work schedule of the Panel

5.2 Note DG's approval of the payment of the Panel as per the rate approved by National Treasury at level of B1

5.3 Note DG's approval of the travel (Business Class) and associated costs

5.4 Sign the letter of invitation for Dr Evá Plaganyi to travel to the meeting in June 2023

5.5 Approve for release the draft media statement on the establishment of the Expert Review Panel on Fisheries and Penguin.

RECOMMENDATIONS:

5.1 NOTED/NOTED WITH COMMENT

5.2 NOTED/NOTED WITH COMMENT

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5.4 SIGNED/SIGNED AS AMENDED/NOT SIGNED

5.5 APPROVED/APPROVED AS AMENDED/NOT APPROVED

MS B D CREECY

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE:

AD1

forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

MEDIA STATEMENT

EXPERT REVIEW PANEL ON FISHING CLOSURES AND LIIMTATIONS AROUND KEY PENGUIN COLONIES – 18 JANUARY 2023

The DFFE has appointed an Expert Review Panel to advise on managing the interactions between the small pelagic (anchovy and sardines) fishery and the conservation of African penguins. African penguins are endemic to South Africa and Namibia, but have decreased from more than a million breeding pairs to just about 10,000 pairs over the last century. The DFFE in September 2022 declared some areas around the major penguin colonies as closed to commercial fishing for anchovy and sardine. These restrictions were established after much collaboration and negotiation with the seabird conservation groups and the small pelagic fishing industry representatives. Fishing limitations included areas around Dassen Island, Robben Island, Stony Point, Dyer Island, St. Croix Island and Bird Island. The interim fishing limitations were implemented from the 1st of September 2022 to the 14th of January 2023. These have now been extended to mid-April 2023, and further considerations will be made depending on the work schedule of the Expert Review Panel.

The fishery and conservation sector representatives were committed to discussions and offered meaningful contribution from insights into the fishing industry and conservation science. The interim closures do not represent a consensus decision among the sectors and deliberations will continue during the work of the Panel.

The Expert Review Panel will review all related science outputs over recent years, including outcomes of the Island Closure Experiment undertaken by the Department over the last decade. The Terms of Reference for the science review and the panel members were established in consultation with the representatives from the fishing and bird conservation sectors. The Panel will advise the Department on the appropriateness and value of fishing limitations for penguin trends. This is a key issue as the sardine stock in South African waters continues to be at low levels. Competition for food is thought to be one among a set of pressures that are contributing to the decline of the African Penguin. Other pressures include shipping traffic and the associated noise and vibrations, pollution and degradation of suitable

nesting habitats through historical removal of guano and coastal commercial and residential developments.

The Panel is Chaired by Professor André Punt (USA), with members Dr Ana Parma (Argentina), Dr Eva Plagányi (Australia), Professor Philip Trathan (UK) and Professor Robert Furness (UK). The Panel is constituted from nominations received in response to an open call for nominations late last year and was appointed by Minister Creecy under Section 3A of the National Environmental Management Act. The Panel members all have several decades experience in science to policy matters in marine ecosystems, with a combined science publication list of several hundreds. The Panel has already started their work, which will continue over the next few months. All queries regarding the Panel can be addressed to Mr Zolile Nqayi – Director Communications - DFFE.

MEDIA STATEMENT

EXPERT REVIEW PANEL APPOINTED TO ADVISE ON FISHING CLOSURES AND LIIMTATIONS AROUND KEY PENGUIN COLONIES

13 FEBRUARY 2023

The Minister of Forestry, Fisheries and the Environment, Ms Barbara Creecy, has appointed an Expert Review Panel to advise on managing the interactions between the small pelagic (anchovy and sardines) fishery and the conservation of African penguins.

African penguins are endemic to South Africa and Namibia, but have decreased from more than a million breeding pairs to about 10 000 pairs in the last century.

In September 2022, the Department announced the interim closure of some areas around major penguin colonies along the South African coastline to commercial fishing for anchovy and sardine between September 2022 and 14 January 2023 as a precautionary measure aimed at ensuring the survival of the species while balancing ecological an socio-economic interests. The limitation on fishing has been extended to mid-April 2023, and further decisions on the matter will be made depending on the work schedule of the Expert Review Panel.

The Expert Review Panel will review all related science outputs over recent years, including the outcomes of the Island Closure Experiment undertaken by the Department over the last decade.

The Terms of Reference for the science review and the panel members were established in consultation with the representatives from the fishing and bird conservation sectors. The Panel will advise the Department on the appropriateness and value of fishing limitations for penguin trends. This is a key issue as the sardine stock in South African waters remains at low levels. Competition for food is thought to be among one of the pressures contributing to the decline of African Penguin populations. Other pressures include shipping traffic and the associated noise and vibrations, pollution and degradation of suitable nesting habitats through historical removal of guano and coastal commercial, and residential developments.

The international Panel is chaired by Professor André Punt (USA), with members Dr Ana Parma (Argentina), Dr Eva Plagányi (Australia), Professor Philip Trathan (UK) and Professor Robert Furness (UK).

The Expert Review Panel, which has already started its work, focuses on the following:

- Review the interpretation of the Island Closure Experiment (ICE);
- explore the value of island closures in providing meaningful benefits to penguins;
- review the processes and outcomes completed through the Governance Forum and the Consultative Advisory Forum for Marine Living Resources (CAFMLR) process;

- make recommendations on the implementation of island closures, including spatial delineation, time frames and
- advise on further science and monitoring methods.

To access the gazette, click below:

https://www.dffe.gov.za/sites/default/files/gazetted_notices/nema.fishingareaclosure.africanpenguinbreeding_g47373gon2684.pdf

For media enquiries please contact Albi Modise on 083 490 2871 or amodise@environment.gov.za

ISSUED BY THE DEPARTMENT OF FORESTRY, FISHERIES AND THE ENVIRONMENT

forestry, fisheries
& the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS 225823
Enquiries: Drs A Naidoo/ L Fikizolo
Cellphone: 082 784 7131/084 625 1333

MINISTER

PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES AND PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS

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3. IMPLICATIONS

Personnel:	None.
Financial:	Business Class Travel for the five Panel Members, Accommodation for five days, and any additional days depending on flight arrangements. Cost of one hosted dinner for ten to twelve persons. The estimation here will be between R 400 00 and R 600 000. The Panel will have to be remunerated as per the B1 rate. This final amount will be based on the number of days spent on preparation in addition to the travel and meetings days. If 9 weeks (45 days) is assumed for the Chair and 8 (40 days) weeks for each of the Panel members then the remuneration cost is estimated at R4 317 X 45 for the Chair = R194 265 and R2 619 X 40 for each Panel Member = R104 760 (X 4 = R419 040), with total for Panel members plus Chair = R 613 080. The Panel will also claim the Department rates for meals and incidental expenses, within the approved DFFE policy. Provision will be made in the Branch Oceans and Coasts for these costs in the 2023 financial year.
Communication:	A Press Statement is submitted an Annexure 3.
Legal:	None
Delegations:	None.

4. OTHER BRANCHES/ CHIEF DIRECTORATES CONSULTED

CFO on the payment rates and the Fisheries Branch on the Panel objectives and operations have been consulted.

PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES AND PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS

5. RECOMMENDATIONS

It is recommended that DG:

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RECOMMENDATIONS:

5.1 NOTED/~~NOTED WITH COMMENT~~

5.2 APPROVED/~~APPROVED AS AMENDED/NOT APPROVED~~

5.3 ~~APPROVED/APPROVED AS AMENDED/NOT APPROVED~~

5.4 ~~RECOMMENDED/RECOMMENDED AS AMENDED/NOT RECOMMENDED~~

5.5 RECOMMENDED/~~RECOMMENDED~~ AS AMENDED/NOT RECOMMENDED

DIRECTOR-GENERAL

DATE: 16/02/2023

5 Aug

PROGRESS REPORT ON ESTABLISHING THE EXPERT PANEL ON FISHERIES AND PENGUIN INTERACTIONS AND REQUEST TO FUND THE PANEL'S COSTS

5. RECOMMENDATIONS:

It is recommended that Minister:

5.1 Note the Briefing on the establishment and work schedule of the Panel

5.2 Note DG's approval of the payment of the Panel as per the rate approved by National Treasury at level of B1

5.3 Note DG's approval of the travel (Business Class) and associated costs

5.4 Sign the letter of invitation for ~~Dr Evá Plaganyi~~ to travel to the meeting in June 2023

5.5 Approve for release the draft media statement on the establishment of the Expert Review Panel on Fisheries and Penguin.

Letter is for Dr Daniel J Metcalfe

RECOMMENDATIONS:

5.1 NOTED/NOTED WITH COMMENT

5.2 NOTED/NOTED WITH COMMENT

5.3 NOTED/NOTED WITH COMMENT

5.4 SIGNED/SIGNED AS AMENDED/NOT SIGNED

5.5 APPROVED/APPROVED AS AMENDED/NOT APPROVED

MS B D CREECY

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 20/2/2023

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA
Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Tel: (012) 399 8743
Private Bag X9052, Cape Town, 8000, Tel: (021) 469 1500, Fax: (021) 465 3362

Ref: EDMS 225823

Dr Daniel J Metcalfe
Director – Environment | CSIRO
dan.metcalfe@csiro.au

Copy: Dr Alistair Hobday
Research Director - Sustainable Marine Futures | CSIRO Environment
Alistair.Hobday@csiro.au

Dear Dr Metcalfe

INTERVENTION TO DR E. PLAGANYI TO TRAVEL TO AND ATTEND THE MEETING OF THE EXPERT REVIEW PANEL FOR FISHERIES AND PENGUINS INTERACTIONS IN CAPE TOWN - SOUTH AFRICA, JUNE 2023.

In December 2022 through a process of national nominations, I selected a Panel of five Experts to review the science associated with the interactions across the small pelagic fishery and the African Penguin in South African marine ecosystems. Through this process Dr Plaganyi was nominated and has kindly accepted my invitation to participate in this Panel. While the Panel has and will continue to have their initial meetings virtually, there is a need that the Panel convene physically to complete their work. At this time, a week in June 2023 is tentatively scheduled for this meeting.

I therefore request that furthering the good cooperation between South Africa and Australia, especially in their area of ocean governance and science, Dr Plaganyi's travel is supported within your organisation. The Department will cover all financial costs associated with travel arrangements.

Further enquires on the Panel and its work can be directed to Dr Ashley Naidoo, Chief Director Oceans & Coasts Research – anaidoo@dffe.gov.za .

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 20/2/2023

environment, forestry
& fisheries
Department: Environment, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Reference: EDMS MCE189652
Enquiries: J Beaumont
Telephone: 021 819 2410

MINISTER

RESPONSE TO LETTER TO MINISTER REGARDING FISHING EXCLUSION AROUND AFRICAN PENGUIN COLONIES - REQUEST FOR URGENT APPRAISAL OF MITIGATION MEASURES TO AVERT CURRENT RAPID POPULATION DECLINE

1. PURPOSE

To request you to sign the letter providing a response to the correspondence signed by the CEO's and representatives of 6 organisations, including: South African Foundation for the Conservation of Coastal Birds (SANCCOB); Birdlife South Africa; WWF South Africa; Institute of African Ornithology of University of Cape Town; and Institute for Coastal and Marine Research of the Nelson Mandela University. The letter addresses the matter of fishing exclusion around African Penguin colonies.

2. BACKGROUND AND DISCUSSION

2.1 Dr Waller of SANCCOB forwarded a letter to the Minister of Environment, Forestry and Fisheries from CEOs, Directors and lecturers of six non-government organisations (NGO's) and Universities raising concern on the status of the African Penguin. The letter motivates support for fishing exclusions around African Penguin colonies as one of a number of mitigation measures to avert the current rapid population decline.The African Penguin is endemic to Southern Africa and it is Africa's only extant penguin. It used to be Africa's most abundant seabird but numbers fell from about 1.45 million pairs in the 1920s to ca. 25,000 pairs in 2009. On account of the large decrease in its numbers, the African penguin is now classified as Endangered in terms of criteria of the International Union for the Conservation of Nature (IUCN). In South Africa, numbers of African penguins have been rapidly declining since the

start of the 21st century. In 2001, an estimated 56,000 pairs bred, which reduced by 65% to ~19000 pairs in 2015 and to 13200 in 2019. This decline is evidenced by surveys made by Branch Oceans and Coasts scientists.

2.2 The decrease in penguins was mainly a result of reduced adult survival rates, which was related to decreased availability of sardine (an important prey item for penguins) off western South Africa. The sardine unavailability was caused by an eastward displacement of sardine and its current collapse to low levels of abundance. The impact of the altered distribution of prey may have been exacerbated by fishing around penguin colonies in the west especially during breeding.

2.3 Concern regarding the decrease of African penguins has led to the 2013 promulgation of the "Biodiversity Management Plan for the African Penguin *Spheniscus demersus*" (AP-BMP). This Plan identifies several actions. It also led to the implementation of experimental closures to purse-seine fishing around penguin colonies.

2.4 Penguin numbers have continued to decline; ~4 000 pairs have been lost from the South African population between 2016 and 2019 (or ~22% of the 2016 population).

2.5 An analysis of results obtained from monitoring penguins around the islands and evidence from various publications related to output from the experimental fishing closures indicated positive effects of such closures for the survival and condition of chicks as well as adults. These observations were made at the Dassen, Robben, St. Croix and Bird Island – Algoa Bay Islands.

2.6 Recent published papers in peer-reviewed scientific journals by Department and university scientists have described the impact of reduced availability of forage fish species. Several recommendations were made to halt the Penguin decline which included closing areas to fishing around the feeding grounds, as well as protection around the breeding localities.

2.7 The letter by Dr Waller et al., referred to a number of factors, including oil spills, altered distribution of prey and reduced food availability due to fisheries for the decrease of African Penguins off South Africa. These factors have also been referred to in the AP-BMP and in press releases issued by the DEFF. The Department is in the process of constructing a new AP-BMP which has included the spatial protection of the breeding localities. This has been

gazetted for public comment during 2019. Specific engagements and further comments were received from the Fisheries Branch and the Small Pelagic Industry representatives. Comments are currently being processed. The new BMP, which will be available in March 2021, and depending on further engagements with the Fisheries Branch, will set out actions that are intended to improve protection of this species. This will include the possibility of Island Closures or more specific and targeted localised closures to fishing.

2.9 The Scientists and Mangers of the Branch agree that fishing closures will be helpful in addressing the Penguin decline. The Oceans and Coastal Research Scientists have met with the Fisheries Scientists at the Small Pelagic Fisheries Scientific Working Group, where closures were discussed. More interactions are required to reach agreement on the scale of closures. The Fishing Industry representatives at the meeting did not support closures, noting that the small pelagic fishing sector is in crisis due to the collapse of the sardine and anchovy stocks.

2.10 The Branch recommends engagement with the drafters of the letter to further develop and advance motivations for fishing closures around penguin colonies. Organisations represented in the letter are invitees to the Scientific and Technical Groups established by the Branch. The Chief Directorate: Oceans and Coastal Research can host a dedicated meeting on this issue with the drafting organisations.

3. IMPLICATIONS

Personnel:	None.
Financial:	None.
Communication:	None.
Legal:	None.

4. OTHER BRANCHES/CHIEF DIRECTORATES CONSULTED

None.

5. RECOMMENDATION

It is recommended that you sign the letter providing a response to the correspondence signed by the CEO's and representatives of 6 organisations, including: South African Foundation for the Conservation of Coastal Birds (SANCCOB); Birdlife South Africa; WWF South Africa;

Institute of African Ornithology of University of Cape Town; and Institute for Coastal and Marine Research of the Nelson Mandela University. The letter addresses the matter of fishing exclusion around African Penguin colonies.

~~RECOMMENDED~~/RECOMMENDED AS AMENDED/~~NOT RECOMMENDED~~

ACTING DIRECTOR-GENERAL

DATE: 15/12/2020

LETTER SIGNED/SIGNED AS AMENDED/NOT SIGNED

Amend letter

MS B D CREECY

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 17/12/2020

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Tel: (012) 399 8743
Private Bag X9052, Cape Town, 8000, Tel: (021) 469 1500, Fax: (021) 465 3362

Ref: EDMS MCE189652

Dr Lauren Waller
The Southern African Foundation for the Conservation of Coastal Birds (SANCCOB)
PO Box 1116
Bloubergrant
CAPE TOWN
7443

Email: lauren@sanccob.co.za
cc: stephen@sanccob.co.za

Dear Dr Waller

PROPOSED FISHING EXCLUSION AROUND AFRICAN PENGUIN COLONIES

Your correspondence dated 1 November 2019 regarding fishing exclusions around African penguin colonies has reference.

Please accept my apologies for the delayed response.

I have noted your submission and the dire situation that the African penguin is currently experiencing is well documented and I note and appreciate the interventions that you are proposing to halt the decline. A number of factors have contributed to the decline of the African penguin including habitat loss, reduced food availability and oil spills. These are highlighted in the African Penguin Biodiversity Management Plan (AP-BMP), as well as in peer-reviewed scientific papers, as stated in your letter.

I am advised that members of the respective organizations cited in your letter have met with Departmental researchers in the scientific working group meetings. I have accordingly requested that the Department's Chief Directorate Oceans and Coasts Research invite the six organisations to a dedicated meeting on Island Closures and the role these can play in African Penguin Conservation. ~~This would, in my opinion, further advance the concept and implementation of fishing closures.~~ The contact official responsible for this intervention in the Department is Mr. Ashley Naidoo, Chief Director: Oceans and Coasts research.

As a Department we are keen to share information and engage with all views towards improving the management of South Africa's ocean ecosystems, biodiversity and the multiple users it supports.

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE:

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Tel: (012) 399 8749
Private Bag X8062, Cape Town, 8000, Tel: (021) 469 1500, Fax: (021) 465 3362

Ref: EDMS MCE189662

Dr Lauren Waller
The Southern African Foundation for the Conservation of Coastal Birds (SANCCOB)
PO Box 1116
Bloubergrant
CAPE TOWN
7443

Email: lauren@sanccob.co.za
cc: stephen@sanccob.co.za

Dear Dr Waller

PROPOSED FISHING EXCLUSION AROUND AFRICAN PENGUIN COLONIES

Your correspondence dated 1 November 2019 regarding fishing exclusions around African penguin colonies has reference.

Please accept my apologies for the delayed response.

I have noted your submission and the dire situation that the African penguin is currently experiencing is well documented and I note and appreciate the interventions that you are proposing to halt the decline. A number of factors have contributed to the decline of the African penguin including habitat loss, reduced food availability and oil spills. These are highlighted in the African Penguin Biodiversity Management Plan (AP-BMP), as well as in peer-reviewed scientific papers, as stated in your letter.

I am advised that members of the respective organizations cited in your letter have met with Departmental researchers in the scientific working group meetings. I have accordingly requested that the Department's Chief Directorate Oceans and Coasts Research invite the six organisations to a dedicated meeting on Island Closures and the role these can play in African Penguin Conservation. The contact official responsible for this intervention in the Department is Mr. Ashley Naidoo, Chief Director: Oceans and Coasts research.

As a Department we are keen to share information and engage with all views towards improving the management of South Africa's ocean ecosystems, biodiversity and the multiple users it supports.

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 17/12/2020

forestry, fisheries
& the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS 206570
Enquiries: J Beaumont / S Middleton
Telephone: 021 819 2410 / 021 402 7441
Cellphone: 082 653 0625 / 082 371 6088

MINISTER

A SYNTHESIS OF CURRENT SCIENTIFIC INFORMATION RELATING TO THE DECLINE IN THE AFRICAN PENGUIN POPULATION, THE SMALL PELAGIC FISHERY AND ISLAND CLOSURES

1. PURPOSE

1.1 Note the attached report that provides a synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures and comments provided thereon. The documents include:

- **Annexure A**: Report - A Synthesis of Current Scientific Information Relating to the Decline in the African Penguin Population, the Small Pelagic Fishery and Island Closures
- **Annexure B**: Comments from the Top Predator Scientific Working Group (B: O&C)
- **Annexure C**: Comments from the Scientific Working Group Small Pelagic (B: FM)
- **Annexure D**: Comments from SANParks; and

1.2 note that further recommendations will be made by the GF, on proposed island closures.

2. BACKGROUND AND DISCUSSION

2.1 A joint 'Governance Forum' (GF or Decision-making Forum), comprising DDGs and senior officials of Branch: Oceans and Coasts (B: O&C) and Branch: Fisheries Management (B: FM), as well as South African National Parks (SANParks), was established by the Department of Forestry, Fisheries and the Environment (DFFE) on 22 February 2021. The first task of this Forum was to synthesise scientific information relating to the decline of the African penguin and closures to fishing around their breeding colonies. This information would enable the Minister to make decisions in this regard.

2.2 The Minister advised that the GF should be guided by the National Environmental Management Act (NEMA, Act 107 of 1998) and its principles of (amongst others) conservation, sustainable use and the precautionary approach. This was in response to recommendations to the Minister by SANParks and the Top Predator Scientific Working Group (B: O&C) that were supported by BirdLife SA, WWF-SA, SANCCOB and others to immediately implement long-term closures to purse-seine fishing around the six largest penguin breeding colonies.

2.3 The GF established a Drafting Team comprised of DFFE and SANParks scientists to prepare a report on the current state of African penguins, relevant fisheries management and the socio-economics of island closures and penguin-related tourism considering the precautionary principles. That report is attached **(Annexure A)**. The Report is 69 pages in total and begins with an executive summary from pages 3 to 7.

2.4 The report has been circulated to the Top Predator Working Group (B: O&C), the Small Pelagic Fishery Scientific Working Group (B: FM) and SANParks. Their comments are also attached **(Annexure B, C and D)**. The three sets of comments provide insights into the content and information summarised in the document. In addition, the report will be sent to three external expert reviewers requesting their review. It must be noted that throughout the process the focus on island closures was debated with Branch O&C and SANParks arguing that the island closures must be the focus of the report, while Branch Fisheries argued that all pressures and responses must be included in the report. This tension is evidenced in the comments provided. The matter was addressed by including the interventions from the Penguin Biodiversity Management Plan.

2.4.1 Key strategic comments from the Top Predator Working Group are that scientific debate and call for further science investigations have postponed island closures for 13 years, and even longer when considering that this was initially considered as early as 2006. The penguin populations is declining dramatically and there is the real risk that the population could fall below the point of recovery. There is sufficient, scientifically tested (peer-reviewed published) research and anecdotal evidence on the link between prey availability and penguin success to implement island closures. Arguments from researchers against closures have not been scientifically tested through peer-reviewed publications.

2.4.2 Key strategic comments from the Small Pelagic Fishery Working Group are that all pressures on penguins must be investigated. The focus on the relationship between prey availability and penguin success detracts from a full investigation of the causes for penguin decline. Island

closures to fisheries will not have a significant impact on penguin success. More research programs, including modelling the benefits of all interventions, are required. Island closures will have negative impacts on the small pelagic fishing industry.

2.5 Independently of both the Scientific Working Groups, SANParks has provided a set of comments on the synthesis report. SANParks notes that 55% of the surviving penguin population resides within their jurisdiction and they must therefore act on the conservation and protection mandate. SANParks supports the closure of the island to fisheries to prioritise prey for penguins.

2.6 Although the comments provide an indication of the significantly different views and perspectives from the 2 Working Groups, the process has created sufficient common purpose for a constructive discussion on possible scenarios for island closure. The next step, therefore, is to finalise a draft scenarios document on priority measures to be taken to reduce the decline of the African Penguin population. This will be the basis for a further discussion aimed at reaching an agreement on the specific actions, responsibilities and timeframes. As guided by the Minister, this meeting will be facilitated by Mr Shoni Munzhedzi.

2.7 The Branch O&C is compiling recommendations on island closures (ie. closure to fishing) on the basis of documents prepared at the end of 2020. These recommendations are being updated with information gathered during this task team's work and will further be informed by the discussions at the facilitated meeting. The recommendations will support interventions included in the penguin biodiversity management plan (BMP). Public comments on the BMP are currently being interrogated.

2.8 The Branch: O&C has raised a concern that the small pelagic fisheries stocks, sardine, in particular, have declined considerably. At present, the fishery total allowable catch is calculated annually on an ad hoc basis outside an operational management procedure. There is concern whether continued fishing at these low levels will have more consequences for ecosystem functions.

2.9 Once decisions on interventions are made, there will be the need for stakeholder engagement with the conservation non-government organisations and the small pelagic fishing industry. These should be planned proactively, including the consideration of separate and combined engagements similar to the process followed by the Branch B&C in the High Level Panel.

3. OTHER BRANCHES CONSULTED

The drafting team comprised three scientists from the Branch Fisheries Management, three from the Branch: Oceans and Coasts and two from SANParks.

4. IMPLICATIONS

Personnel:	None.
Financial:	None.
Legal:	None.
Communication:	None.

5. OTHER BRANCHES/CHIEF DIRECTORATES CONSULTED

The Chief Directorate: Oceans and Coastal Research was consulted.

6. RECOMMENDATIONS

It is recommended that you:

6.1 note the attached report that provides a synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures and comments provided thereon. The documents include:

- **Annexure A**: Report - A Synthesis of Current Scientific Information Relating to the Decline in the African Penguin Population, the Small Pelagic Fishery and Island Closures
- **Annexure B**: Comments from the Top Predator Scientific Working Group (B: O&C)
- **Annexure C**: Comments from the Scientific Working Group Small Pelagic (B: FM)
- **Annexure D**: Comments from SANParks; and

6.2 note that further recommendations will be made by the GF, on proposed island closures.

SUPPORTED/SUPPORTED AS AMENDED/NOT SUPPORTED

DEPUTY DIRECTOR-GENERAL: OCEANS AND COASTS

DATE:

A SYNTHESIS OF CURRENT SCIENTIFIC INFORMATION RELATING TO THE DECLINE IN THE AFRICAN PENGUIN POPULATION, THE SMALL PELAGIC FISHERY AND ISLAND CLOSURES

RECOMMENDED/~~RECOMMENDED AS AMENDED/NOT RECOMMENDED~~

DIRECTOR-GENERAL

DATE: 15/07/2021

RECOMMENDATIONS:

5.1 Note the attached report that provides a synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures and comments provided thereon. The documents include:

- **Annexure A**: Report - A Synthesis of Current Scientific Information Relating to the Decline in the African Penguin Population, the Small Pelagic Fishery and Island Closures
- **Annexure B**: Comments from the Top Predator Scientific Working Group (B: O&C)
- **Annexure C**: Comments from the Scientific Working Group Small Pelagic (B: FM)
- **Annexure D**: Comments from SANParks

NOTED/NOTED WITH COMMENT

5.2 Note that further recommendations will be made by the GF, on proposed island closures.

NOTED/NOTED WITH COMMENT

Please ensure I receive the proposals for public consultation by end July.

MS B D CREECY

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 15/7/2021

forestry, fisheries
& the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS MCE213287
Enquiries: Dr AD Naidoo
Telephone: 021 819 5009
Cellphone: 082 784 7131

MINISTER

ADVISE ON LETTER TO MINISTER ABOUT THE CONCERN REGARDING DECLINE OF AFRICAN PENGUIN POPULATION

1. PURPOSE

To request Minister to:

1.1 note the draft response to the correspondence by Mr M Copeland, Chairperson of the South African Pelagic Fishing Industry Association (SAPFIA), regarding the decline of African penguin colonies; and

1.2 sign the attached letter to the Chairperson of SAPFIA, informing him of your decision.

2. BACKGROUND AND DISCUSSION

2.1. SAPFIA has raised concerns to the Minister with respect to the decline in African penguin population. The African penguin management plan has been drafted with actions and mitigation measures towards addressing the current rapid population decline. This includes Island closure for the pelagic fishing industry around main breeding colonies of the African penguin.

2.2. It is noteworthy that the African penguin is endemic to southern Africa and is Africa's only extant penguin. They were classified as endangered by the IUCN in 2010 following a 61% decrease in their population over the preceding 28 years. Since then, their population has continued to decrease, with the lowest ever recorded in 2021, estimated at 10 400 breeding pairs, a 73% decrease over the last 30 years from ~42 500 breeding pairs in 1991 to ~10 400

pairs in 2021. It used to be Africa's most abundant seabird, but numbers fell from about 1.45 million pairs in the 1920s to approximately 25 000 pairs in 2009.

2.3. The decrease in penguins was attributed to reduced adult survival rates, which were related to a decreased availability of sardine (an important prey item for penguins) off western South Africa that was caused by an eastward displacement of sardine and its collapse to low levels of abundance. It is widely acknowledged by the conservation sector that the predominant driver of this species' recent decline is the poor availability of their prey, mostly anchovy and sardine. These species are also targeted by the purse-seine fishing industry. This attribution of the decline to fishing activity is the basis of the correspondence to Minister. The fishing Industry and the scientist representing the industry argues that this is not conclusive and more can be done to establish or test this link.

2.4. Concern regarding the decrease of African penguins has led to promulgation, in 2013, of the "Biodiversity Management Plan for the African Penguin *Spheniscus demersus*" (AP-BMP) in terms of the National Environmental Management: Biodiversity Act of 2004 where several actions were identified. It also led to the implementation of experimental closures to purse-seine fishing around penguin colonies.

2.5. The AP-BMP documented all known threats that may be responsible for the reduction in African penguin which included, amongst others, reduced food availability, predation, oiling, disease, extreme weather events, poor breeding habitat and rehabilitation aspects and identified mitigation measures. The implementation of the island closure experiment for the past 10 years delayed the implementation of fishing closure around the islands within the 20km zone around penguin colonies. This measure prioritises food availability to the African penguin to sustain their breeding. The delay in implementation was mainly due to the ongoing debate on the scientific technical issues required to provide decision making support.

2.6. The concern raised by SAPFIA for island closure has been discussed in various scientific fora within the department (Small Pelagic and Top Predator Scientific Working Groups). This has been an ongoing open consultative process where information was shared and all comments considered.

2.7. Further deliberations on the island closure around the three priority breeding colonies (Dassen-, Dyer and St Croix Islands) for island closures was initiated to attempt to resolve this debate through best available scientific evidence.

2.8. Population trajectories suggest that the African penguin population will go extinct in 2035. The precautionary principle is an option available when there is no scientific consensus. The researchers in the Branch: Oceans and Coasts, together with the conservation sectors, argue that island closures within the 20km zone of all six islands should be implemented to offer additional support to the African Penguin populations. This can be implemented while further discussion takes place to improve confidence in the science.

2.9. However, through the recent Extended Stakeholder Consultation on Penguin and Small Pelagic Fisheries Interactions, there was consideration that, if sufficient important bird areas are preserved around the three priority colonies, the smaller exclusions on existing MPAs can be considered around the other colonies.

2.10. Further consultation was initiated with researchers affiliated with academic institutions and NGOs through the Extended Task Team. No consensus on the area for closure around these three colonies could be reached. This resulted in the matter being referred to the Consultative Advisory Forum. A draft response letter is attached for consideration by the Minister.

3. IMPLICATIONS

Personnel:	None
Financial:	None.
Legal:	None.
Communication:	None.
Delegations:	None.

4. OTHER BRANCHES/CHIEF DIRECTORATES CONSULTED

None.

5. RECOMMENDATIONS

It is recommended that you:

5.1 note the draft response to the correspondence by Mr M Copeland, Chairperson of the South African Pelagic Fishing Industry Association (SAPFIA), regarding the decline of African penguin colonies; and

5.2 sign the attached letter to the Chairperson of SAPFIA, informing him of your decision.

RECOMMENDED/~~RECOMMENDED AS AMENDED/NOT RECOMMENDED~~

DIRECTOR-GENERAL

DATE: 24/03/2022

RECOMMENDATION(S):

5.1 NOTED/~~NOTED WITH COMMENT(S)~~

5.2 LETTER SIGNED/~~SIGNED AS AMENDED/NOT SIGNED~~

MS B D CREECY

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 4/4/2022

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Tel: (012) 399 8743
Private Bag X9052, Cape Town, 8000, Tel: (021) 469 1500, Fax: (021) 465 3362

Ref: EDMS MCE213287

Mr Copeland
Chairperson: South African Pelagic Fishing Industry Association
P O Box 2066
CAPE TOWN
8000

Email: Copeland.fishconsult@gmail.com

Dear Mr Copeland

DECLINE OF THE AFRICAN PENGUIN POPULATION

I refer to your letter of 15 December 2021.

The Department of Forestry, Fisheries and the Environment (DFFE) acknowledges the concern raised by the South African Pelagic Fishing Industry Association (SAPFIA) regarding the island closure scientific debates and the African Penguin Management Plan. The department also recognises the dire situation the African penguin is currently experiencing. Several factors have contributed to the decrease of the African penguin, including oil spills and reduced food availability, and these are highlighted in the African Penguin Biodiversity Management Plan (AP-BMP) as priority areas for action.

Fisheries resources in South Africa are important to the socio-economic well-being of the people of South Africa. Balancing the various objectives across biological sustainability of the fish stocks, its predators and socio-economic gains of the fishers and the economy in general are some of the challenges facing the department. Fishing plays an important role in the provision of food and nutrition, and in providing employment to a large number of households. Use and user considerations must include the promotion of the Ecosystem-Based Management Approach which ultimately supports the marine living resources. Many countries, through this approach, direct special emphasis to their endemic species.

The department remains committed to the use of best available scientific information in decision-making. The efforts exerted in research and scientific discussions to establish a common ground by scientists, both in conservation and fisheries, is encouraged. Management interventions must be iterative, hence there will always be a benefit from ongoing science programmes. Divergent methods of data analysis and interpretation obtained from the island closure experiment has not been conclusive.

DECLINE OF THE AFRICAN PENGUIN POPULATION

The department was hopeful that common ground will be established through the extended Technical Task Team. As you are aware, after the consultation process, a consensus position could not be reached between the Conservation Stakeholder Group and the Fishing Industry Stakeholder Group. This cannot deter from the necessary action required to support the recovery of the African penguin.

I therefore referred the matter to the Consultative Advisory Forum (CAF) for resolution. It is anticipated that the CAF will advise the department within March 2022. Both the Conservation and Fishing Industry Stakeholder Groups will have the opportunity to make presentations to the CAF.

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: 4/4/2022

1081
"SFA22"

forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: EDMS 217434

Enquiries: Dr Lisolomzi Fikizolo

Telephone: 021 819 2410

Cellphone: 084 625 1333

MINISTER

REQUEST TO GAZETTE THE DRAFT REPORT ON SPECIAL PROJECT ON PENGUINS AND SMALL PELAGIC FISHERY INTERACTIONS BY THE CONSULTATIVE ADVISORY FORUM (CAF) FOR MARINE LIVING RESOURCES

1. PURPOSE

To request that the Minister to-

1.1. approve the gazetting of the draft report on the special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources;

1.2 approve the newspaper advert advertising the gazette and inviting the public to comment on the draft report on the special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources; and

1.3 sign the accompanying Government Notice gazetting the draft report on the special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources for public comment.

2 BACKGROUND AND DISCUSSION

2.1 On 18 October 2019, the Minister gazetted the draft Biodiversity Management Plan (BMP) for the African penguin in Government Gazette No. 42775 (Notice No. 1328), for public comment. Acknowledging the implementation challenge experienced with the initial plan published in 2013, the Draft Biodiversity Management Plan (BMP) aimed to continue the work targeted on the recovery of the species and mitigate against its rapid decrease. Thus, the BMP continues to foster and coordinate implementation of various conservation initiatives that will ultimately contribute to improving the conservation status of the African penguin.

2.2 Since November 2019, the Department has been considering comments received and reviewing the draft BMP for the African penguin. This process included engaging with academia, the conservation sector, and government authorities relevant to management of African penguins as well as the fisheries sector. Due to the extent of comments received largely relating to the decline in forage fish availability, the *Consultative Advisory Forum for Marine Living Resources-Special Project: Penguin and Small Pelagic Fishery Interactions* was established to explore the different delineations of island closures to ameliorate resource competition around six major African penguin colonies, namely, Stony Point, Dassen Island, Robben Island, Dyer Island, St Croix Island and Bird Island as well as to inform management decisions to mitigate resource competition around African penguin colonies and to prevent the further decline of the species. The Consultative Advisory Forum for Marine Living Resources (CAF) was also tasked with reviewing the draft BMP including the proposed key actions and provide further recommendations to strengthen the BMP for efficient and collaborative implementation. In incorporating the multi-stakeholder processes, the CAF facilitated various meetings in order to provide guidance on what is required to ensure a feasible set of actions are developed to achieve the aim of the BMP.

2.3 To ensure transparency, the CAF together with partners (i.e. NGOs, Academics, Fisheries representatives, Conservation representative, and management authorities managing the penguin population and colonies) extensively reviewed the BMP and provided recommendations that will assist with achieving agreement by the stakeholders involved. Attached for your consideration as **Annexure 1** is the draft report on special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources. The report considers the requirements for estimates of budgets and human resources required in order to achieve the

specific objectives of the BMP and measures to urgently address the pressures affecting the penguin populations e.g. food availability, predation, breeding habitat, offshore bunkering, oil spills, underwater noise, etc.

2.4 While the recommendations made by the CAF have been considered by the Department in its review of the draft BMP for African penguin to gazette for public comments, there is however also a need to gazette the recommendations made by the CAF in the draft report on the special project on penguins and small pelagic fishery interactions, as this document is considered a decision-making tool for the Department in implementing the BMP for African penguins. It is expected that the CAF recommendations regarding island closures (restriction on commercial fishing around the islands), colony by colony over 4 years, may cause controversy and an uproar in a fisheries sector which is already faced with multiple challenges of food security, lack of access to financing, shrinking fishing boundaries and the perception that the fisheries sector, particularly the small-scale fisheries sector, is operating within disadvantageous policies. It is important to note that gazetting the draft report on special project on penguins and small pelagic fishery interactions may lead to the members of the public questioning the objectivity of the CAF as it relates to tis mandate, as it has been established to oversee aspects relating to the fishing industry. Gazetting the draft report may further enhance existing fragmentation between the fisheries and conservation sectors. It is important for the Department to put in place mitigation measures that will ease the transition for implementing the proposed recommendations and actions in the fisheries sectors, which mainly come from fishing communities and who perceive themselves as having been largely discriminated against. It is further expected that gazetting the draft report for public comment will further delay the implementation of the BMP's action plans.

2.5 In its revised form, i.e. with the inclusion of the recommendations by the CAF; the reviewed draft BMP for African penguins will improve the existing structures to implement the actions proposed while allowing for efficient monitoring for species recovery. Thus, the Department supports the gazetting of the draft BMP for public comment which sufficiently captures all recommendations by the CAF. In a separate workflow, the extensively reviewed draft Biodiversity Management Plan for the African Penguin (EDMS217435) is also *en* route to the Minister for approval to gazette for public comment.

3 IMPLICATIONS

Personnel: The Branch: Oceans and Coasts will allocate dedicated officials to be responsible for capturing and collating comments received from the members of the public on the gazette draft report on special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources.

Financial: The above is already included in the approved budget.

Communication: The Department's communication policy will be followed. Appropriate service email addresses are in place to ensure a transparent and strict process of receiving and collating comments. The Branch will work with the Communications Chief Directorate for an appropriate media release to its media partners.

Legal: Directorate: Law Reform (Cape Town) has vetted this submission, the Gazette Notice and the draft newspaper advert for the draft CAF report. Details of the Directorate's views are contained in their attached vetting memo.

4 OTHER BRANCHES/ CHIEF DIRECTORATES CONSULTED

4.1 The African Penguin BMP is drafted in collaboration with the Directorate: Biodiversity and Coastal Research in the Branch: Oceans & Coasts. Furthermore, the Branch: Fisheries Management was extensively consulted throughout the development process.

5. RECOMMENDATIONS

It is recommended that the Minister—

5.1. approves the gazetting of the draft report on the special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources;

5.2. approves the newspaper advert advertising the gazette and inviting the public to comment on the draft report on the special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources; and

5.3. signs the accompanying Government Notice gazetting the draft report on special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources for public comments.

DEPUTY DIRECTOR-GENERAL: OCEANS AND COASTS
DATE:

REQUEST TO GAZETTE THE DRAFT REPORT ON SPECIAL PROJECT ON PENGUINS AND SMALL PELAGIC FISHERY INTERACTIONS BY THE CONSULTATIVE ADVISORY FORUM (CAF) FOR MARINE LIVING RESOURCES

RECOMMENDATION(S) SUPPORTED/NOT SUPPORTED

CHIEF DIRECTOR: LAW REFORM AND POLICY COORDINATION
DATE:

RECOMMENDATION(S) SUPPORTED/NOT SUPPORTED

DIRECTOR-GENERAL:
DATE:

REQUEST TO GAZETTE THE DRAFT REPORT ON SPECIAL PROJECT ON PENGUINS AND SMALL PELAGIC FISHERY INTERACTIONS BY THE CONSULTATIVE ADVISORY FORUM (CAF) FOR MARINE LIVING RESOURCES

RECOMMENDATIONS

5.1. Approve the gazetting of the draft report on special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources;

APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.2. Approve the newspaper advert advertising the gazette and inviting the public to comment on the draft report on special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources;

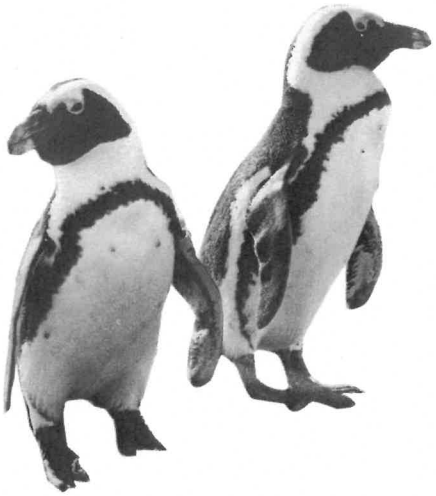
APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.3 Sign the accompanying Government Notice gazetting the draft report on special project on penguins and small pelagic fishery interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources for public comments;

GOVERNMENT GAZETTE NOTICE SIGNED/SIGNED AS AMENDED/NOT SIGNED

MS B D CREECY
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE:



Special Project Report on Penguin and Small Pelagic Fishery Interactions

by the Consultative Advisory Forum for Marine Living Resources

Special Project Report by the Consultative Advisory Forum for Marine Living Resources

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1. Executive Summary

Sardines and anchovies are preyed on by both fishers and African penguins. Small pelagic purse seine fishing overlaps with foraging areas around penguin breeding colonies at Dassen, Dyer, Robben, Stony Point, St Croix and Bird Islands. The African penguin population has been declining on these islands. Serious concerns were raised on the decline in penguin numbers that are considered to be caused by a number of different drivers. One of the possible causes considered was that sardine and anchovy fishing in the vicinity of penguin breeding islands and, to explore that, the Island Closure Experiment was initiated in 2008 and ran until 2021. The results have been controversial, with different opinions on how to interpret them. The Minister of Forestry, Fisheries and the Environment therefore tasked the Consultative Advisory Forum (CAF) for Marine Living Resources to develop agreed recommendations on the limiting of small pelagic fishing activities adjacent to penguin colonies. A range of documents and presentations were provided to CAF and joint recommendations were sought on potential island closures and other agreed upon recommendations on other conservation measures.

More than 50 hours of virtual meetings were held between CAF members and observers with a substantial additional effort on one-on-one meetings to attempt to broker consensus, but to no avail. Results of Island Closures Experiment (ICE) were fiercely debated and it became clear to CAF that consensus would not be reached under current circumstances and that a final decision on which result of ICE is the most accurate is unlikely in the foreseeable future. On the basis of available information and having listened to both sides, CAF considers that it must be accepted that the answer could lie somewhere between the two disputed positions i.e., between 0% benefit from closures and 1% reduction in rate of penguin decline per annum (current decline rate is approximately 5% per annum). This means that island closures are likely to have some, but modest benefits to penguin population recovery. CAF therefore decided a balance was needed and as a last resort has recommended an average of 50% closed and 50% open of the Marine Important Bird Areas. CAF considers this will be fair and scientifically defensible, incorporating a reasonable degree of precaution. The recommended CAF 50:50 approach included considered variability between regions and islands to address the objectives for both conservation and fisheries. Given that the six penguin colonies represent a total of 600% MIBAs, the 50:50 equates to 300% of MIBA closures.

CAF used a decision support software (Marxan) which is an optimising algorithm to identify potential area closures based on selected criteria. In short, these criteria were to minimize impacts on the small pelagic fishery (avoiding areas of high catch as far as possible) while selecting the most important forage areas within the MIBAs for penguin conservation (considering current breeding pairs per colony and the foraging tracking data for penguins). CAF considered this a useful exercise, which involved many iterations on different closure scenarios to cover differing opinions on the extent and boundaries of island closures. Results from Marxan were shared with the Fishing Industry and Conservation Sector Group observers and were discussed to help set closure boundaries, collectively. Both parties agreed on certain areas which are shown in the maps of this report. After many iterations and deliberations CAF finally settled on:

% Marine Important Bird Areas for Island closures
Dassen Island – 84%
Robben Island – 41%
Stony Point – 16%
Dyer Island – 40%
St Croix – 27%
Bird Island -93%

CAF recommends the above-mentioned island closures be implemented year-round for five years, with a review after four years.

In addition, CAF strongly supports an integrated decision support approach through a single Scientific Working Group or similar forum with facilitated support for improved consultation and coordination between the Fisheries Management Branch and Oceans and Coasts to address all considerations where the two branches have shared responsibility, including but not limited to overlapping mandates related to an ecosystem approach. Engagement of other stakeholders must be an integral part of this forum. The forum would for example support continued and constructive dialogue between the Fishing Industry observers and the Conservation Sector observers. It is essential to have this forum throughout the period of proposed island closures to facilitate joint analysis of information to support further decision making. Such a Scientific Working Group must also consider other pressures on penguins and multi-species modelling.

CAF recommends that the Branch Fisheries Management, which is responsible for the Small Pelagic Scientific Working Group, should consider their current strategy within an ecosystem approach to fisheries management and whether they have clear and appropriate ecosystem-related objectives and are meeting them. CAF strongly encourages the development of Fishery Management Plans that explicitly include specific ecosystem management objectives. CAF recommends that the Top Predators Scientific Working Group be strengthened and must consider other important causes of the penguin decline, such as ecosystem interactions between top predators and ensure CAF recommendations on other measures are reflected in the African Penguin Biodiversity Management Plan.

2. Introduction

Forage fish such as sardines, herring, capelin and sandeel constitute important prey items for many marine predators whilst also being harvested by industrial fisheries. In South Africa, sardines and anchovy are preyed upon by both fishers and African penguins as well as other predators. The African penguin, a Southern Africa endemic, breeds only in Namibia and South Africa. In the 1920s, it was

probably Africa's most abundant seabird, having an estimated 0.5–1 million breeding pairs.[1] It subsequently decreased to ~17 700 pairs in 2019, of which ~25% were in Namibia and ~75% in South Africa. After large decreases in the Namibian population in the latter part of the 20th century and in the South African population in the early 21st century, the species was classified as Endangered on the Red List of the International Union for Conservation of Nature in 2010. In 2004, ~52 000 pairs of African penguins bred at 19 localities in South Africa, but 15 years later, in 2019, the population had fallen by 75% to ~13 200 breeding pairs, and five colonies became extinct. In 2021, breeding pairs had further declined with a total of 8 901 breeding pairs concentrated in 6 main colonies. Because larger colonies are likely to have a lower probability of local extinction, it is considered imperative to save the seven South African colonies that at present have >900 breeding pairs: at Dassen and Robben islands on the west coast, Boulders Beach in Simon's Town, Stony Point and Dyer Island on the southwest coast, and St Croix and Bird islands in Algoa Bay. The recent estimates of the African penguin population in South Africa reflect the dire situation: if current population trajectories continue, seabird scientists have estimated that this species could be functionally extinct (less than 50 pairs) by 2035 (Sherley et al. 2018)[2].

The listing of the African penguin as Endangered in 2010 triggered several initiatives to secure its future, including the development of a Biodiversity Management Plan for African Penguin (BMP-AP) that was gazetted in 2013 in terms of the National Environmental Management: Biodiversity Act (NEMBA, Act 10 of 2004). The BMP-AP had a five-year timeframe and aimed to halt the decline of the African penguin population in South Africa within two years of its implementation and after that to achieve a population growth that would result in a down-listing of the species in terms of its IUCN Red List status. It unfortunately failed in these objectives. However, DFFE reported that the BMP-AP achieved a number of its subsidiary goals and several management actions were implemented, including: (i) improved cooperative management; (ii) population reinforcement in some localities e.g. rearing of orphaned chicks or abandoned eggs ex-situ and returning them to the wild; (iii) improved breeding-habitat management; and (iv) improved management of the captive population.

The small pelagic fishery in South Africa makes an important contribution to the well-being of coastal communities on the West and South coasts of South Africa. It employs approximately 5 800 people and the average value of the catch over the last ten years was approximately ZAR3.2 billion[3]. At present there are 65 vessels that are active in the fishery. The number has declined from 102 in 2005 and 73 in 2015 in response to the lower biomass and TACs in recent years. It has been estimated that long-term closures around the six penguin breeding islands would result in a cost to the industry of approximately R120 million per annum, equivalent to more than 1 200 jobs in the fisheries and wider economy[4]. The African penguin also has important social and economic benefits. For example the Simon's Town, Boulder's Beach penguin colony attracts close to a million visitors a year and its economic value in 2017 was estimated at R311 million per annum, generating 885 jobs.

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[1] This introduction is extracted predominantly from the DFFE (Department of Forestry, Fisheries and the Environment). 2021. A synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures. Unpublished report. Cape Town, South Africa: DFFE.

[2] Sherley RB, Barham BJ, Barham PJ, Campbell KJ, Crawford RJM, Grigg J et al. 2018. Bayesian inference reveals positive but subtle effects of experimental fishery closures on marine predator demographics. Proceedings of the Royal Society B: Biological Sciences 285: article 20172443.

[3] https://sapfia.org.za/small-pelagic-species/

[4] Estimated Socio-economic Impact of Island Closures. Document submitted to CAF by SAPFIA on 4 March 2022.

The South African anchovy and sardine fisheries are regulated using an operational-management-procedure (OMP), which provides an adaptive management system that is designed to adjust rapidly to any large changes in the abundance of the fish stocks without increasing the risk to them. A combined anchovy-sardine OMP has been used since 1994, with intermediate revisions to accommodate new information and knowledge. A combined anchovy-sardine OMP is required because sardine and anchovy shoal together as juveniles and that can give rise to bycatch of juvenile sardine during anchovy fishing, which also needs to be well managed. The OMP aims to ensure the sustainable utilisation of both resources and is used to set total allowable catches (TACs) for both species and total allowable bycatches (TABs) for juvenile and adult sardine[5]. Because of very low biomasses, Exceptional Circumstances were declared for sardine in 2018 and have continued to the present. Exceptional circumstances were also declared for anchovy in 2020. Exceptional circumstances are declared in situations where the biomass of either species falls to levels below that anticipated during simulation testing of the OMP. In these situations it would be too risky to continue to apply the OMP. The SWG-PEL has therefore not made use of the OMP for sardine from 2019 to the present and, instead has annually updated the assessment model for sardine with the most recent information to allow short term projections which compare the projected sardine biomass under various TAC and TAB options to the biomass projected under a no-catch option. Since 2018, the selected TAC for sardine has been set at a relatively conservative depletion level of 87% or higher, i.e., the sardine biomass is projected to decrease by at most 13% from that which is projected if no future catch is taken. The same approach was used for anchovy in 2020, however, with sufficient recovery of the anchovy biomass by the end of 2020, the final anchovy TAC for 2021 and the interim TAC for 2022 were set using a new anchovy OMP.[6]

Drivers of African penguin food availability and penguin-fish interactions

African penguins depend mainly on energy-rich sardine *Sardinops sagax* and anchovy *Engraulis encrasicolus* for food, although other small pelagic fishes and squid are also eaten. Both the abundance and quality of prey are important in influencing their population dynamics. Unlike flying seabirds, African penguins must swim to find food, which limits their foraging range particularly while breeding. Furthermore, they require insulation against low oceanic temperatures and, to achieve this, replace their full plumage annually by moulting, during which time they remain ashore for about three weeks without feeding. Therefore, they are especially susceptible to food scarcity during breeding and before and after moulting, activities which take place at colonies year-round. Anchovy and sardine off South Africa have both shown marked changes in population size from 1984 to 2020. A 'pelagic boom' occurred in the early 2000s, with both anchovy and sardine biomasses being very high, but subsequently sardine biomass decreased rapidly and anchovy biomass declined gradually. Small pelagic fishes such as anchovy and sardine are typified by 'boom and bust' population dynamics arising from inherent variability in their recruitment strength and short lifespans.

Present day variations in small pelagic fish population sizes are a combined outcome of the interacting drivers of fishing, environmental changes and predation. The latter is often the largest contributor to their

[5] DEFF (Department of Environment, Forestry and Fisheries) 2020. Status of the South African marine fishery resources 2020. Cape Town: DEFF

[6] FISHERIES/2020/DEC/SWG-PEL/137 and FISHERIES/2021/DEC/SWG-PEL/72

natural mortality and, as a proportion of stock biomass, may increase at low population sizes, when management of forage resources needs to be particularly cautious. Changes in the relative distributions of anchovy and sardine off South Africa have been observed over the past few decades. Anchovy adults showed an abrupt shift from being located predominantly on the west coast from 1984 to 1995 to predominantly on the south coast from 1996 to present. Sardine also showed an eastward shift in relative distribution, but that occurred more gradually than was observed for anchovy and reached a maximum in 2005. These distribution changes have resulted in a mismatch in the location of penguins and small pelagic fish, particularly off the west coast.

Seabirds are influenced by the prey abundance and also by the availability of their prey, both of which can be affected by local exploitation rates, since seabirds have restricted diving depths and, while breeding, are central-place feeders with limited foraging ranges, and hence localised exploitation around their breeding colonies may reduce prey availability. Whereas there is general agreement that food abundance/availability is an important driver of African penguin population dynamics, there is disagreement on how much fishing competition affects this driver compared to other drivers.

South Africa's small pelagic purse-seine fishery and African penguins both target mainly sardine and anchovy. Sardine and anchovy occupy a key position in the marine food web, where they are the link that transfers energy produced by plankton to larger-bodied predatory fish, seabirds and marine mammals. Because many animals and humans depend on forage fish, as these small pelagic species are collectively known, it is important to manage the fishery activities in a sustainable manner that considers and accounts for their high degree of variability and importance to the ecosystem. In the 2000s, a substantial increase in mortality of adult penguins on the west coast was linked to a decrease in the biomass of sardine in that area, as a result of an eastward shift in relative distribution, to below a quarter of its maximum observed value.

In response to the observed increases in mortality from 2006 and the hypothesis on food competition between penguin and fishers in the vicinity of breeding islands, a study to assess the effects of short-term closure to purse-seine fishing around penguin breeding colonies was initiated in 2008. This study is known as the Island Closure Experiment (ICE). It comprised two parts: (i) a feasibility study (2008– 2014) during which purse-seine fishing was prohibited around some colonies, and data on penguins and small pelagic fish were collected to determine whether an experiment would have adequate statistical power to detect a significant effect of closure, if such existed; and (ii) an experimental phase (2015–2021) where a series of alternating island closures were implemented with associated monitoring (Table 1).

Table 1: Schedule of closures around islands with African penguin breeding colonies (x = closed; for 2021, seasonal closures have been introduced whereby Dassen Island is closed in the first and fourth quarters [x- -x] and St Croix Island is closed in the second and third quarters [-xx-])[7]

[7] DFFE. 2021. A synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures. Unpublished report. Cape Town, South Africa: DFFE.

Island	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	Feasibility study							Island Closure Experiment						
Dassen	x	x					x	x	x				x	x--x
Robben				x	x	x				x	x	x		
St Croix		x	x	x				x	x	x				-xx-
Bird					x	x	x				x	x	x	

In order to maximise contrast for more precise estimation of closure effects, the study involved a three year alternation of opening and closing to fishing around islands. Conflicting scientific results emerged from two groups Branch: Oceans & Coasts and Branch: Fisheries Management (B: O&C and B: FM) respectively, who had applied different approaches to analysing the results of the experiment.

All scientists agree on the need for robust science and trade-offs between costs and benefits. Scientists from B: O&C and SANParks maintain that the results to date from the Island Closure Experiment show a positive effect on chick survival that has slowed the rate of population decline, and, given the Endangered status of the African penguin, they call for applying the precautionary approach and implementing closure around South Africa's six largest colonies without further delay. They emphasise that spatial management is crucially important for predators constrained to undertake central-place foraging like African penguins, and hence the reason closures around key penguin colonies are being sought is to lessen the risk of colony extinctions. In contrast, scientists from B: FM consider that closure has only a negligible positive effect, that there is substantial uncertainty regarding this effect, and that closure has an economic impact on the small pelagic fishing industry. They therefore recommended the implementation of further island closures (seasonal in some instances) in 2021 whilst analyses to address remaining uncertainties are conducted.

A joint 'Governance Forum' (GF or Decision-making Forum), comprising DDGs and senior officials of B: O&C and B: FM, as well as SANParks was established on the 22nd of February 2021. This followed a meeting of the officials from B: O&C and B: FM with the Minister of the Department of Environment, Forestry and Fisheries (now Forestry, Fisheries and the Environment) on the 19 of January 2021 where she requested the Department to provide her with a synthesis of the current scientific information relating to island closures and African penguin population declines. That meeting was in response to recommendations to the Minister by SANParks and the Top Predators -Scientific Working Group (B: O&C) supported by Birdlife SA, WWF-SA, SANCCOB and others to immediately implement long-term closures to purse-seine fishing around the six largest penguin breeding colonies.

The Minister advised that the GF should be guided by NEMA (the National Environmental Management Act, Act 107 of 1998). She further emphasised that NEMA is the overarching legislation applicable to both B: O&C and B: FM and as such the three principles, amongst others, of conservation, sustainable use and the precautionary approach should be applied by both Branches when dealing with this issue. The Minister acknowledged the differences in scientific opinions but she requested that a collective and responsible approach to avoid the extinction of the African penguin should be sought, based on credible science and after consultation with all relevant stakeholders.

The GF subsequently met and agreed as a first step to establish a Task Team, comprised of internal scientists of the Department and SANParks, to prepare a comprehensive synthesis report of the current state of knowledge relating to African penguins, island closures, fisheries management relevant to African penguins and the socio-economics of island closures and penguin-related tourism. Furthermore, several management scenarios were proposed based on the available science.[8]

Between August and October 2021 the Department proceeded with an Extended Task Team that also included Departmental scientists from B: O&C and B: FM, SANParks and Cape Nature (as Management Authorities), as well as three representatives from Conservation NGOs (WWF-SA, BirdLife SA and SANCCOB/EWT) and three representatives from the small pelagic fishing industry. The objective of the Extended Task Team was to propose actions to slow the decline of the African penguin through; (i) exploring overlaps in penguin forage areas and small pelagic fishing; and (ii) developing a science plan to investigate cause, possible interventions and impact of interventions. The outcomes of the Extended Task Team indicated amongst others, that the Conservation Sector Group's preferred options may not meet the needs of the small pelagic fishing industry; that the Conservation Sector Group's representatives were unlikely to consider further reduction in protection in the Marine Important Bird Areas (MIBAs); for closures to be optimised they must be year-round and over multiple years, ideally five years. Furthermore, the small pelagic industry representatives tabled island closure proposals that were contingent on the partial opening of the 16 Mile Beach MPA and that further science and models on the pressures on penguins must be initiated and that island closures to fishing must be considered with extreme caution in the absence of such science. The Extended Task Team, with the observer representatives were unable to reach agreement on the island closures and the matter was referred by the Minister to the Consultative Advisory Forum for Marine Living Resources (CAFMLR) in January 2022.

The Synthesis Report collated science over the last decade on penguins, small pelagic fisheries and their interactions including the Island Closure Experiments which limited fishing adjacent to penguin colonies. This report was also reviewed by two international experts, P.N. Trathan and A. Punt. These documents provided key background and current information for the CAF.

3. Terms of Reference

The Forum must advise the Minister on any matter referred to the Forum by the Minister. Specifically, the Minister is requesting the Forum to advise her on the following:

Consider outputs from the Extended Task Team on Penguin Conservation and make agreed upon recommendations on the limiting of Small Pelagic Fishing Activities adjacent to penguin colonies. The following documents must be considered.

1. Penguin Conservation Task Team Activities Summary for the CAF
2. Penguins and Small Pelagic Fisheries Interactions Synthesis Report
3. Synthesis Report Review 1
4. Synthesis Report Review 2

[8] The above extract is predominantly from the DFFE 2021 Synthesis report. Ibid.

5. Summary Report and Preferred Options from the Conservation Sector Group
6. Summary Report and Fishing Limitations Proposal from the Small Pelagic Fishing Industry for the West Coast (Dassen, Robben, Stony Point and Dyer Islands). Note there is no separate document on the South Coast Small Pelagic Fishery as these were communicated directly to the Department. This is included as the St. Croix map and Summary Table as Industry Counter Proposal (I) in the collated options Annexure 1.4.
7. Collated options of fishing limitation with estimated loss percentages and percentages of Marine Important Bird Areas conserved around the major penguin islands.

Make additional agreed upon recommendations on other conservation measures that may be adopted by the Minister.

4. Process and stakeholder engagement

Minister Creecy briefed the CAF on the special project on penguin and small pelagic fishery interactions on 13 January 2022.

The Minister appointed the following six observers to the special project:

- Dr Alistair McInnes (BirdLife South Africa) (Conservation Sector Group)
- Dr Lauren Waller (Endangered Wildlife Trust, previously from SANCCOB) (Conservation Sector Group)
- Mr Craig Smith (WWF-South Africa) (Conservation Sector Group)
- Dr Mike Bergh (Small Pelagic Fishing Industry)
- Mr Mike Copeland (Small Pelagic Fishing Industry)
- Mr Redah De Maine (Small Pelagic Fishing Industry)

In line with the above-mentioned terms of reference and for purposes of continuity, the CAF consulted with all the government scientists, Conservation Sector Group (NGOs and other scientists) representatives and small pelagic fishing industry representatives including a fisheries scientist that worked with the Department as part of the Extended Task Team. The six observers had speaking rights; the right to cross-examine presenters and the right to present their own evidence. The consultations took the form of CAF meetings and a total of eight meetings equating to 40 hours was held between 1 February 2022 and 8 March 2022, with all observers and government scientists. During these meetings various documents were presented to the CAFMLR, with the list of documents in Appendix II of this report. Presentations were followed by detailed discussions. In addition, five CAF members only meetings were held equating to 11 hours. Two CAF members were also mandated to engage with the six observers in technical discussions in order to try to broker consensus on island closure proposals and these meetings constituted about 14 hours in total. CAF made repeated requests for the six observers to meet and try to develop a joint proposal for island closures. The six observers eventually met once, without CAF members present.

In considering the challenges of this special project, CAF considered the paper by Hemming et al. 2021[9] which describes the challenges common to conservation decisions, summarising key decision support frameworks and tools, the steps in decision analysis and the context for which each step may be most appropriate. The table below summarises the challenges of decision making in this context based on the decision analysis, as viewed by the CAF.

Table 2: Some considerations in the CAF decision analysis of penguin and small pelagic fishery interactions in the context of the framework applied by Hemming et al 2021

Framework	Comments
Differing value judgments	Both parties have differing value judgements which are also reflected in some of the other factors below. Both parties state they recognise the value of penguins and the need to conserve them as well as the social and economic importance of the fishery. The challenges come more from different perspectives on uncertainty, risk and cognitive bias.
Multiple competing objectives	Yes, the fundamental driver of the conflict, notwithstanding common broad goals.
Scarce resources	Yes, on both sides –penguins in a crisis and seriously limited jobs and livelihoods in coastal areas.
Uncertainty	A primary factor in this case. Uncertainty underpins and results in different views not only on the benefits, or absence of benefits, of island closures but also on any other factors causing penguin declines and therefore the degree of effectiveness of ICE in addressing these declines.
Risk	Risk is the product of Likelihood and severity of Impact. Differing views on both of those elements are important drivers of the conflict on ICE. The different estimates of likelihoods (probabilities) of closure effects are the results from the two sets of analyses of ICE that we have seen and, by themselves, are causing conflict. In addition, different assessments/perceptions of impacts (or benefits) for penguins and social and economic analyses. There are additional challenges in terms of views on extinction risk.
Cognitive biases	Explained in the Table as "decisions are made intuitively relying on mental shortcuts". Both sides must have such biases, which are likely to affect their value judgements. An important, cognitive bias amongst the NGOs was considered to be that they feel a strong need in the midst of this crisis to take some definitive action. From their perspective, island closures come up as good candidates for such action. This drive is understandable – we would all like to be able to do something urgent to address the decline but the question is whether it will make a meaningful difference, especially if other potentially more important driving factors are not effectively addressed.

[9] Hemming et al. 2021 An introduction to decision science for conservation. Conservation Biology 36(1): 1-16. https://doi.org/10.1111/cobi.13868

	On the other hand, the fishing industry is facing serious social and economic problems of its own caused predominantly by environmental factors, probably influenced by climate change. A cognitive bias for them could be to exaggerate the negative impacts of closures for the fishery and hinder a search for alternative fishing behaviours. A serious challenge in many of these conservation vs use conflicts, perhaps especially in the oceans, is that it is often much easier to evaluate the reported social and economic impacts than it is to evaluate the complexities of what is happening in the ecosystem. This is particularly true for highly variable forage fish stocks and their multiple predators in a changing ecosystem.

5. CAFMLR Approach

Background to the rationale for the CAF 50:50 compromise

The Island Closure Experiment (ICE) started in 2008, and was aimed at assessing the effects on penguins of short-term closures to purse-seine fishing around penguin breeding colonies[10]. The experiment consisted of three-year alternation of opening and closing the areas within a 20 km radius of two pairs of penguin breeding islands: Dassen and Robben Islands on the West Coast and St Croix and Bird Islands in the Eastern Cape (see Table 1 on island closures and periods). The purpose of the experiment was to try to determine whether there were any meaningful changes in some key population dynamics and feeding parameters between years in which the islands were open and those when they were closed. The following penguin parameters were measured during the experiment: chick condition, survival and growth, fledgling success and as measures of foraging behaviour: maximum distance, path length and trip duration.

The results from 12 years of ICE are disputed and are still being statistically debated at various levels from between scientists in the two DFFE Branches to scientific publications and challenges in the national and international media. The results are complex, consisting of comparisons of different indicators of penguin breeding success and feeding for the two pairs of islands and with a high degree of variability, or 'noise' in the data collected. The results of the experiment can be considered against the current rate of decline of the South African penguin population, which is approximately 5% per year, and the two conflicting positions are, in summary:

- The analyses supported by the Fisheries Branch and industry (Butterworth and Ross-Gillespie 2021)[11] estimate that the benefit of future island closures, measured as changes in

[10] DFFE (Department of Forestry, Fisheries and the Environment). 2021. A synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures. Unpublished report. Cape Town, South Africa: DFFE.

[11] Butterworth D.S and Ross-Gillespie A. 2021. A response to some queries concerning the revised summary of results for the island closure experiment provided in FISHERIES/2021/JUN/SWG-PEL/41. FISHERIES/2021/SEP/SWG-PEL/59.

the current rates of population decline, for the population for the two Western Cape colonies combined would be approximately 0% and for the two Eastern Cape colonies, a slowing in the decline rate by approximately 0.25%[10,12].

- The results advanced by Oceans and Coasts and penguin conservation groups estimate somewhat higher benefits from island closures, reflected in the conclusions of Sherley 2020[13] based on positive changes in a number of the penguin indicators across different islands, that the results overall indicate biologically meaningful effects of fishing around the islands. Referring to Sherley 2021, a paper by Sydeman et al. 2021[14] proposed that permanent fisheries closures could reduce the current rate of decline by approximately 20%, in other words improving it from the current decline of 5% to 4% per year.

Reflecting these differences of opinion, the Synthesis report[15] states that Oceans and Coasts and SANParks consider the results from the ICE indicate some positive effects and recommend implementing closure around South Africa's six largest colonies while scientists from the Branch Fisheries are of the opinion that the closures have only a relatively negligible effect, with considerable uncertainty around those estimates and caution that closures have an economic impact on the small pelagic fishing industry. This group recommend further analyses to address the remaining uncertainties.

Since ICE was initiated, further work on penguin tracking has been undertaken and bird scientists have used this data to define the critical penguin habitat around the penguin breeding colonies[16], [17], [18]. Using an internationally recognised methodology to define Marine Important Bird Areas (MIBAs), tracking data was used to try to define the core foraging areas around the six colonies that were under consideration for further closures. The recently defined MIBAs provide better representation of key foraging areas for penguins than early tracking data and the general 20km foraging radius used in ICE. This is because they are based on empirical evidence that better reflects how penguins use the area around the breeding colonies. These were not available during ICE which used a standard 20km radius around islands as a proxy for importance to penguins. Note that as different islands have varying proximity to shore, these radius areas have different marine extents and ranged from between 60 and 99% overlap with the more recently defined MIBAs. It is possible that differences in coverage of MIBA during ICE may have

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[12] Presentation to CAF, 3 March 2022 by M. Bergh. Rationale for SAPFIA and ESCPA's Position and Proposals on Island Closures

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[15] DFFE 2021. A synthesis of current scientific information relating to the decline in the African penguin population, the small pelagic fishery and island closures. Unpublished report. Cape Town, South Africa: DFFE

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contributed to observed variability. The MIBAs were shown to be utilised by pre- and post-moult African penguins, underpinning recommendations by bird scientists for year round closures.

Bird scientists call for 100% of this core foraging area to be protected from fishing in order to fully evaluate the effect of island closures. They also expressed concerns about edge effects and displacement effects in mitigating resource competition. The fishing industry observers queried these concerns and pointed out that small pelagic fish are not static and the shoals move in streams following migration paths and as a result argued that there would be no edge effect.

It should be noted that differences of opinion extend also to the design of the ICE. Conservation scientists have argued that the time period of closures used has been too short and should be for more than four years as short-term switching and alternation between islands may not pick up some impacts on important population processes, and that paired islands (as used in ICE) do not provide good controls.[19,20] There were also early calls for island closures to cover different and sometimes larger areas and some seabird scientists considered experimental closures to be too small.[21, 22, 23] The questions of pairing, alternation and the time period of closures were reviewed by the SPSWG and by the International Review Panel at the 2010 International Fisheries Stock Assessment Workshop. These groups concluded that the design, as subsequently implemented, would be effective and that the three-year closure period provided an appropriate balance between the conflicting objectives of using rapid alternation to maximise the contrast between treatments (also reducing the confounding effects of longer-term environmental variability) and slower alternation between open and closed to address possible autocorrelation in the indicators that were being monitored. The three-year period also enabled better integration of results from the initial feasibility study and those from the experiment[24, 25].

The currently unresolved conflicts formed the background to any recommendations on future closures. The differences of opinion about the results can largely be ascribed to statistical differences of opinion on how the data on penguin responses should be treated in the analyses (aggregated or disaggregated) and the detailed specification of the statistical models used to analyse the results. MARAM and the fisheries group argue that the more positive results reported by Sherley et al. are primarily because the latter did not adequately address pseudo-replication bias when using disaggregated data and that the results from using the aggregated data, as done by MARAM, are more reliable.

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[24] Small Pelagic Scientific Working Group. 2010. Recommendation of the Scientific Working Group for the sustainable management of small pelagic resources for continuation of the island closure feasibility study. MCM/2010/SWG-PEL/59.
[25] Parma A. et al. 2010. International Review Panel report for the 2010 International Fisheries Stock Assessment Workshop 29 November - 3 December 2010, UCT. MARAM IWS/DEC10/REP/1.

If the MARAM arguments are correct, that would indicate that island closures had a minimal effect, close to zero, and would therefore be of no or minimal benefit to penguin conservation. However, even if those results are correct, the initial criticisms of the ICE design also need to be considered. While CAF considers that the results obtained from the experiment as implemented are important indicators of the impacts of fishing and island closures, the likelihood that larger areas of closure, encompassing more or all of the MIBAs, and for longer periods of closures could have resulted in greater benefits than those observed cannot be ignored.

Broader expertise on or available to CAF would be needed if CAF was to attempt to resolve these differences and, even with that, it is the opinion of CAF that satisfactory resolution of the conflict that would lead to a general acceptance of one approach and set of results over the other is unlikely in the foreseeable future. While the reviews on the synthesis report by P.N. Trathan and A. Punt provide some comment on the ICE and analysis of results they do not provide detailed assessments on them or come to any conclusions on the two positions. It would therefore be useful, as called for by the fishing industry, to engage international experts with the necessary expertise to assess the alternative views and advise on which is the more accurate and if that could be used in a decision on future closures. However, even if this is done and a clear conclusion reached, it appeared to CAF that if that conclusion was in favour of the fisheries science results, the conservation sector may still challenge the results because of what they consider to be problems in the basic designs of ICE, and it is also likely that fisheries scientists may raise objections if the conclusion went against their analyses.

If the assumption by CAF that there would be no resolution of the science turns out to be incorrect and a reliable, scientifically-based conclusion is reached and widely accepted that one or other perspective is preferred for decision-making, the CAF recommendations may need to be reconsidered.

Faced with this background, after careful deliberations and given the uncertainty and sensitivity of the issue, CAF decided that the best option would be to recognise the possibility that the actual impacts could be anywhere within the range of the two positions, which can be summarised as somewhere between 0% effect and a 1% benefit (on the current 5% decline rate). The consequences of these two options on the future of the penguin population are illustrated in Figure 1, which indicates reasonable likelihood that closures would have some but modest benefits for penguins.

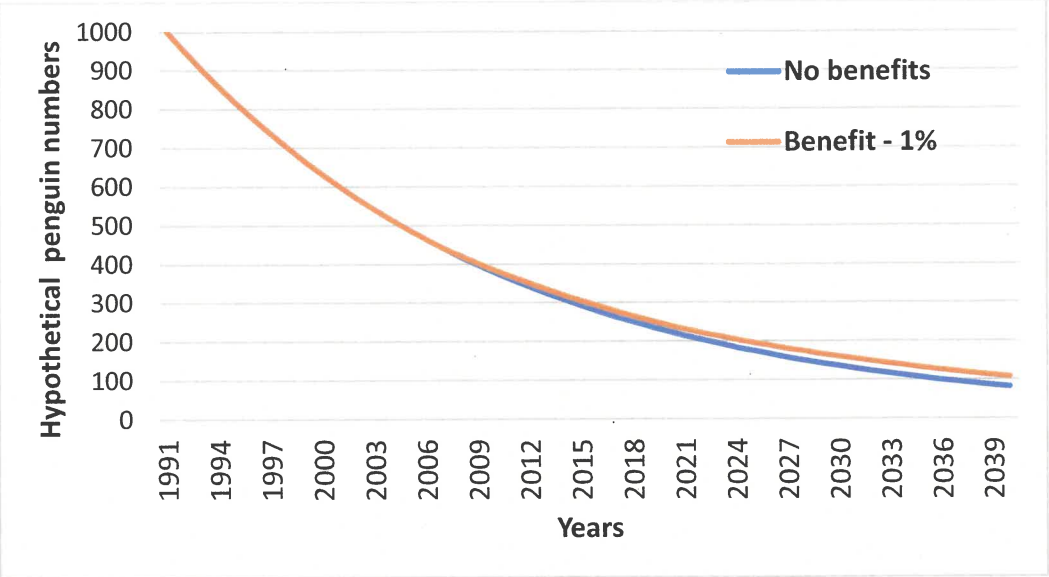


Figure 1. Illustrative trends in penguin numbers for the two closure result positions

Rationale for the CAF 50:50 compromise

As a last resort and failing attempts to achieve agreement by both parties for island closures, the CAF recommendation was to take a 'middle road' between the parties. For closures around the colonies the shape, size and position of the closures are key metrics and the selected starting point for these was the recently defined Marine Important Bird Areas (MIBAs) around each island as described above. The 'middle road' recommended by CAF is therefore to implement an average 50% split between open and closed areas around the 6 MIBAs, so that the total area of closures would be 300% of the overall 600%. After several consultations among the parties, the splits for each island, collectively adding up to 300%, were decided by CAF and aimed, as far as possible, at responding to island and region specific priorities and reservations expressed by the two groups of observers. CAF also employed decision support tools and consulted with both parties in identifying the shape, size, position and percentages of potential new island closures as described below.

Neither of the two groups are satisfied with the outcome of the 50:50 approach, arguing for proportions that they consider better reflect their sectors' objectives, but it is the opinion of CAF that this is a reasonable option taking the available scientific information into account and the joint objectives of conservation of the penguins and avoiding undue social and economic costs to the small pelagic fishing industry as far as possible. If the fisheries science analyses of the ICE results are, in fact, found to be the more correct of the two positions, the 50:50 approach still provides a buffer against uncertainty, in accordance with the precautionary approach. On the other hand, if the results presented by conservation scientists are found to be the more correct, 50:50 closures provide protection around the breeding islands, more than has been the case during ICE, while attempting to maintain social and economic costs as low as possible, which is considered an appropriate balance, noting the meaningful but modest benefits that those results would indicate (as in Figure 1).

Decision Support Tools

CAF employed two decision support tools to support decision making in this challenging process (Harris and Holness 2022 Annexure 1). Firstly, spatial analyses using an optimisation tool (Marxan) was used to guide potential area closures. This helped to minimize impacts on the small pelagic fishery (avoiding areas of higher catch) while selecting the most important areas for penguins (considering current breeding pairs per colony and the tracking data for penguins i.e. foraging areas). Secondly, a trade-off plot was used to review the relative potential impacts and benefits of the various tabled scenarios under discussion. This plot provided a visual representation of the relative potential costs to the small pelagic fishing industry and the relative potential benefits to the breeding penguins. Cost values used fisheries catch data from open years between 2011 and 2019 and weighted to account for the approximate five time higher economic value of sardine versus anchovy and regional effects. Potential benefits to penguins were calculated by considering the proportion of the MIBA that would be closed, the relative intensity of use by penguins across the MIBA and the current estimated number of breeding pairs at each colony. This approach was helpful as not all parts of the MIBA are equal, not for fishers and nor for penguins as both fishing catches and foraging intensity by penguins vary across the MIBA. Full details about these decision support tools are provided in a separate Annexure (Harris and Holness 2022).

6. CAFMLR Recommendations

It must be noted that throughout the process CAF sought consensus and strongly encouraged the observer groups to meet and develop one proposal for island closures. Two CAF members also had additional dedicated technical meetings with the observer representatives in order to attempt to broker consensus. As a jointly agreed proposal could not be achieved with both parties, the CAF approach above was then used as a last resort to develop proposed island closures. During the process other recommendations were also discussed and considered by all meeting participants. CAF therefore proposes island closures while also making other recommendations on matters such as; surveys and monitoring (for penguins and small pelagic fish); capacity; other pressures on penguins; the Biodiversity Management Plan for African Penguin and institutional arrangements, amongst others.

6.1 Island Closures

Islands were considered in terms of the regional context as well as the full extent of the six colonies. The map below illustrates the 63% overlap in small pelagics fishing and Marine Important Bird Areas (MIBAs), with the six colonies indicated.

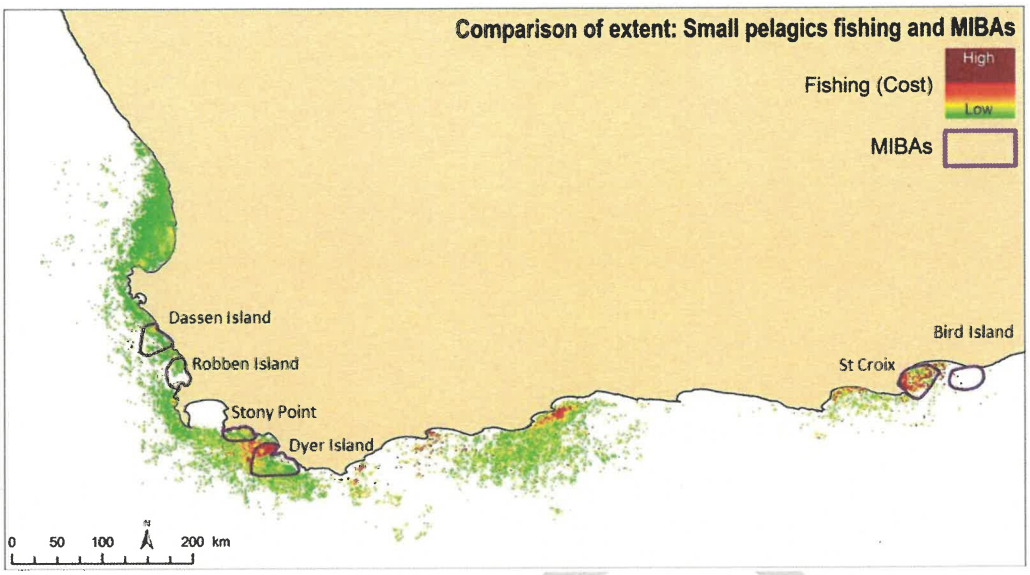


Figure 2. Map showing the 63% overlap between small pelagic fishing grounds and the 6 MIBAs around the key penguin breeding colonies considered by CAF.

Based on the process described in the CAFMLR Approach above, the recommended 50% closure is not evenly distributed among the 6 colonies. In order to further evaluate the effect of closures in the future, the parties have agreed to a design, which gives more weight to the edge colonies (Dassen and Bird Islands), a preference expressed by the Conservation Sector Group observers, and less to others. Such a design will provide more contrast among the separate colonies, and will therefore better assist in statistically evaluating the potential effect of closures when more data have been collected.

The following table indicates the final proposals by CAF, and those of the Conservation Sector Group observers and the Small Pelagic Fishing Industry observers within the constraints of the 50:50 approach.

TABLE 2: Proposed percentage of MIBAs for closure to pelagic fishing

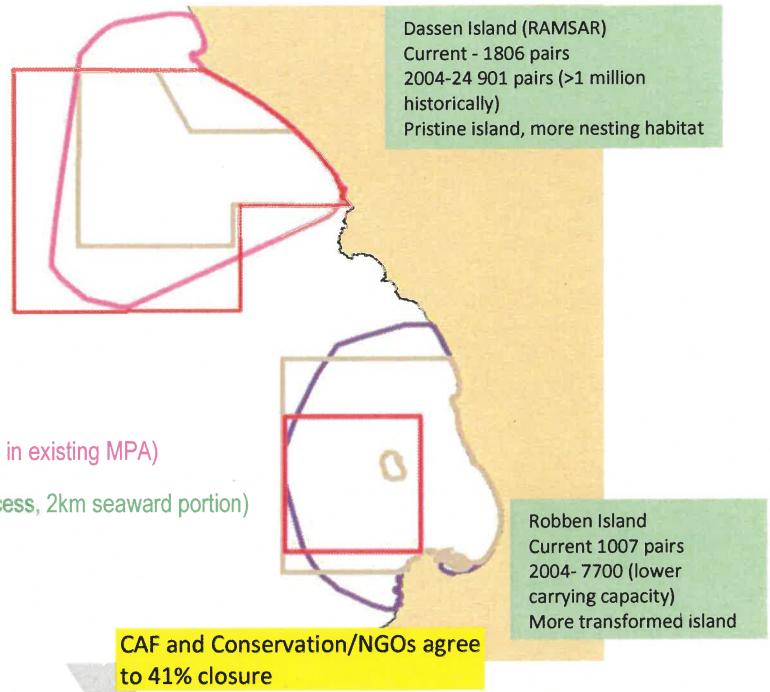
	% Marine Important Bird Areas (MIBA) proposed for closure		
AREA	**CAF 07 March 2022**	**Conservation SG 05 March 2022**	**Industry 04 March 2022**
Dassen Island	84	100	54
Robben Island (41% in Robben Island MPA)	41	41	95
Stony Point (5% in Betty's Bay MPA)	16	5	23
Dyer Island	40	80	20
St Croix (15% in Addo Elephant Park MPA)	27	15	27
Bird Island (45% in MPA)	93	93	93
TOTAL	**300***	**334**	**312**

*CAFs framework for compromise at 50:50 which represents 300% of the MIBAs

Below each of the island pairs are mapped with the various positions by CAF and the two observer groups (Conservation Sector Group and Fishing Industry) reflected during the process. The red boundaries in the maps are indicative of the CAF final proposal. These boundaries were informed by the decision support tools but built on previous proposals, progress and initial agreements during CAF and observer input on potential priorities.

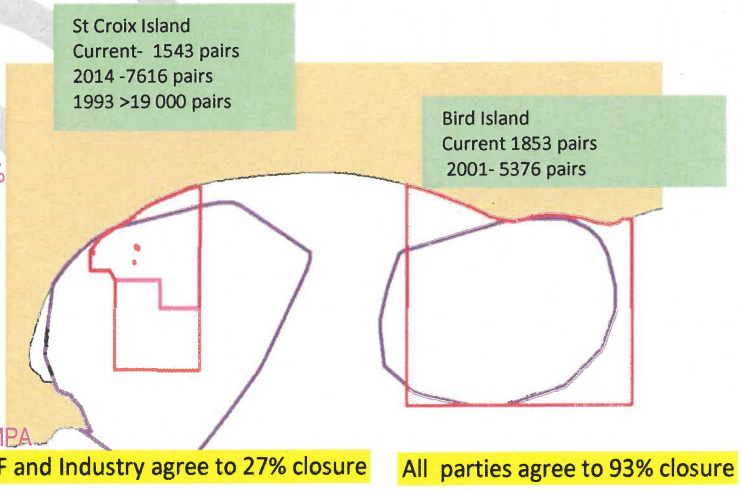
Proposal: Dassen and Robben Islands

- **Dassen Island proposals:**
  - ICE 85%
  - [87.92% internal team draft 6]
  - Conservation start of CAF 79.1% (fallback draft 10, 79-100%)
  - Industry start of CAF 63.9% (54-76 discussed)
  - Initially agreed (76%)
  - Conservation end 100%
  - Industry end -54%, reduced once clarified no access to 16 Mile Beach MPA
  - **CAF proposal 84%**
- **Robben Island proposals:**
  - ICE 99%
  - [Internal team, no closure except MPA]
  - Conservation start of CAF 41% (Maintain 41% in existing MPA)
  - Industry start of CAF 61.32%
  - Initially agreed - 71%; (16 Mile Beach MPA access, 2km seaward portion)
  - **Conservation end 41%**
  - Industry end 95%
  - **CAF proposal 41% (status quo of MPA)**



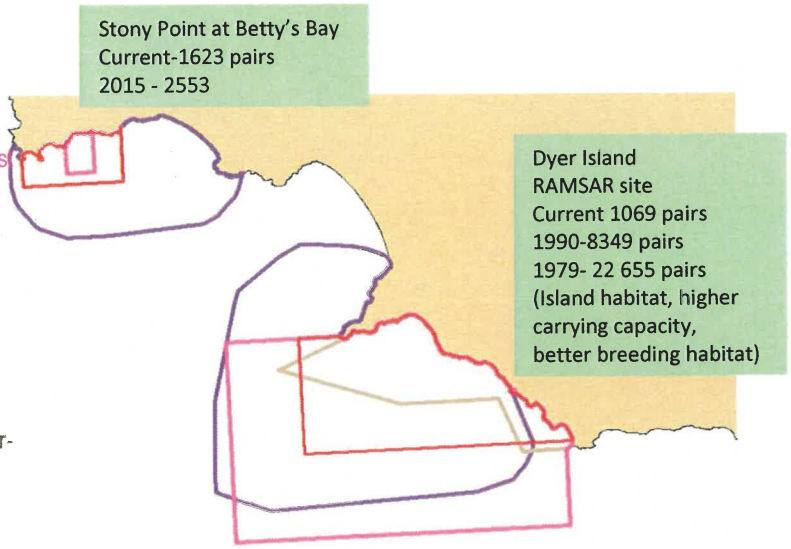
Proposals: St Croix and Bird Islands

- **St Croix Island proposals**
  - ICE 60%
  - [74.94% internal team]
  - Conservation start of CAF (draft F) 75%
  - Industry start of CAF counter-proposal 49.4% (seasonal closure)
  - Initially agreed - 49% seasonal
  - Conservation end 15%
  - Industry end 27%
  - **CAF proposal 27%**
- **Bird Island proposals**
  - ICE 97%
  - Conservation start of CAF 45% in the MPA
  - Initially agreed - 75%
  - **Conservation end 93%**
  - Industry end 93%
  - **CAF proposal 93%**



Proposals: Stony Point and Dyer Island

- **Stony Point proposals**
  - [Internal team, no closure except MPA]
  - Conservation start of CAF larger than current 5% in established MPA) suggest larger %)
  - Industry start 10.63%
  - Industry end 23%
  - Conservation end 5%
  - **CAF proposal 16%**
- **Dyer Island proposals**
  - [75.83% internal team]
  - Conservation start 76.1% (draft golf)
  - Industry start 20.29% (Industry counter-proposal)
  - Industry end 20.29%
  - Conservation end 80%
  - **CAF proposal 40%**



The Marxan team used the selection frequency outputs to jointly define the areas proposed to be closed to fishing (Harris and Holness 2022, Annexure 1). Both groups of stakeholders were involved in discussions to select areas although for the final CAF proposal, optimal areas were selected using the percentages advanced by CAF. Then, these areas were used to calculate potential relative cost and penguin benefit units. For comparison, the team plotted the cost and penguin benefit units of all scenarios proposed by CAF, the conservation sector and industry onto a trade-off plot (Figure 3).

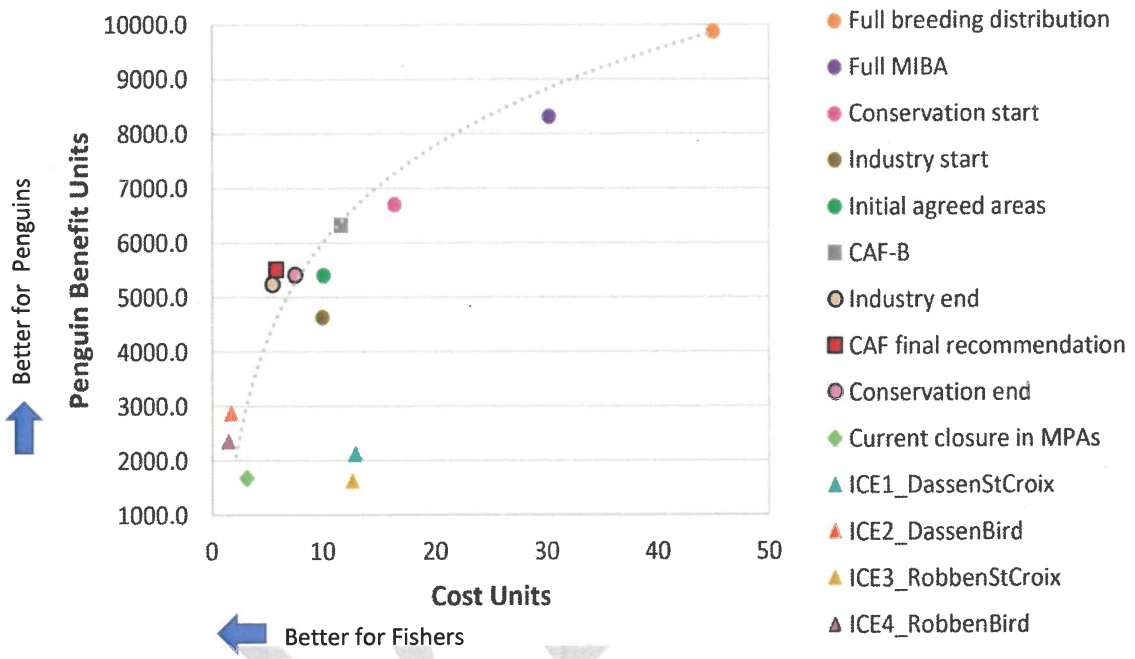


Figure 3: Trade-off plot illustrating the benefits for penguins and cost to industry for each of the proposals and reference scenarios (circles) compared to the Marxan scenarios (diamonds), proposals compiled by CAF (squares), and previous island closure experiments (triangles). Higher PBUs are a better outcome for penguins, and lower cost units are better for industry. The dotted trendline is based on the Marxan-informed proposals by CAF, conservation and industry and the reference scenarios

Note that the current Marine Protected Area network in South Africa excludes small pelagic fishing from several MIBAs. Most of these areas were established during the recent 2019 declaration of an expanded network of MPAs with the restricted zone of the Robben Island MPA covering 41 % of the MIBA there and the restricted zones of the Addo Elephant National Park MPA contributing to the MIBAs around St Croix (15%) and Bird Island (40%). The relative costs of these recent MPAs is reflected in the trade-off plot as the cost data is for the period 2011-2019. Note that the Betty's Bay MPA was established in 1981 before the penguin colony had established there but now this MPA covers 5% of the MIBA. The relative cost of protection for the full breeding range of penguins is reflected as the maximum point on the plot and the relative cost of closure of the full extent of the MIBAs (representing the core foraging area) is also shown. The start and end positions of options advanced by industry and the conservation sector at the start and end of CAF are also shown. It must be noted that "end" positions of the two groups were based on positions advanced in line with the CAF 50:50 approach and are compromise positions. Both these options exceed the 300 combined MIBA percentage recommended by CAF. Note also that the starting

position for industry was based on seasonal closures in some areas and access to the 16 Mile Beach MPA on the west coast and these aspects were not considered in the cost metric used on the trade-off plot. Similarly, initially agreed areas (reflected in green) also involved seasonal closures and requested access to an existing MPA and revised options which did not include such aspects were advanced with lower potential costs.

Note that the options developed during CAF were developed with the support of the optimising algorithm used by the decision support tool Marxan. This helped to develop scenarios that reduced potential costs of island closures while increasing benefits. At the start of the trade-off plot (closer to the origin) it is possible to achieve higher benefits for lower costs, as the algorithm seeks to choose those areas of lowest cost but maximum benefit first. Towards the end of the plot (i.e. closer to the maximum) there are fewer additional benefits for much higher cost. Note that there are many different spatial permutations that are feasible with different costs. It is important to remember that not all parts of the MIBA are equal – not for fishers and not for penguins. For this reason, the relationship between MIBA size and cost is not simple and the trade-off plot was used to demonstrate the influence of the varying importance of areas within the MIBAs to both fishers and penguins. A wide range of scenarios were explored during CAF and the trade-off plot reflects these. For additional context, the potential cost and penguin benefit units for the various permutations of ICE (if any of these were to be implemented further) were also plotted on the trade-off plot. The relative position of different scenarios reflects some of the differences between islands such as the current numbers of breeding pairs which is accounted for in penguin benefit units. These do not account for other factors that were raised in discussion, particularly in terms of carrying capacity for penguins (informed by historical penguin count data) and factors such as extent of natural habitat, extent of breeding habitat and different threats reported at different colonies. For example, the road network, traffic and tourism activities at Robben Island result in different pressures and risks there compared to Dassen Island where there are no roads, no tourism and a greater cover of vegetation used by breeding birds. Other ecological differences are also evident among islands including different interactions among seabird species and between penguins and seals. Similarly, the land-based colony at Stony Point has different pressures and risks to those at the more remote island habitat of Dyer Island. In addition, the cost values based on fisheries catch data from open years between 2011 and 2019 are approximate and do not take into account aspects such as additional travel costs, lost opportunity costs or impacts on employment. Nevertheless, CAF considers that these two measures provide useful indicators of the relative costs and benefits.

In summary, the CAF recommends the following percentages of MIBAs closed to small pelagic fishing:

- Dassen Island – 84%
- Robben Island – 41% (status quo of MPA)
- Stony Point – 16%
- Dyer Island – 40%
- St Croix Island – 27%
- Bird Island – 93%

CAF further recommends that the **period for closure should be 5 years starting from 2022**, with a review after 4 years, having regard for the biology of the penguin and that 4-5 years represents age at first breeding in the penguin life history.[26]

CAF also recommends **no seasonal closures**, as year-round measures would accommodate all vulnerable life history phases of the penguin.[27]

Industry requests access to the 2 km seaward portion of 16 Mile Beach MPA for small pelagic fishing. CAFs view was that consideration of opening of MPAs was beyond the scope of this project. There were some concerns about setting a precedent

6.2 Other recommendations

The following recommendations are drawn from recommendations that were raised by Observers and enjoyed good support as well as recommendations directly from the CAF. Recommendations are also based on observations made during discussions and after careful consideration of information provided to the CAF.

Surveys and Monitoring (high priority): (consensus)

Branch Fisheries: The 2 small pelagic surveys; recruitment and spawner biomass **surveys must take place consistently and on time** as these surveys underpin the development of the biannual Total Allowable Catch recommendations for sardine and anchovy that are critical for ensuring sustainable use of these highly variable resources. These surveys have been at risk in recent years due to unavailability of the Africana Research Vessel, resulting in a bid process for a vessel to undertake the surveys, delays in which have also proven a hinderance in some instances. This constrains the ability of scientists to provide TAC recommendations based on the most up to date information on the resource.

Branch Oceans & Coasts: The annual monitoring surveys of penguins undertaken by O&C are critical for the 5-year duration of the proposed island closures. The capacity of O&C to undertake these surveys requires urgent attention. The branch works collaboratively with the management authorities – SANParks, Cape Nature and Robben Island Museum through Earthwatch, as well as BirdLife SA and Nelson Mandela University on various surveys taken during the breeding, pre-moult and post-moult life stages of penguins. It's critical for these collaborations to continue and to be resourced, as needed.

Capacity

Maintaining effective management of the small pelagic fishery is essential for both productive and sustainable fisheries and for conservation of penguins and other top predators. In addition to challenges with surveys, monitoring of the fishery is also an area of serious weakness that needs to be addressed

[26] Crawford RJM, Shannon LJ and PA Whittington 1999. Population Dynamics of the African penguin *Spheniscus demersus* at Robben Island, South Africa. *Marine Ornithology* 27: 139-147.

[27] Makhado A, Hagen C, Pichegru L, Shannon LJ, Sherley RB, Waller LJ, Carpenter-Kling T, Ludynia K and McInnes A. The seasonal significance of at-sea habitat for African Penguins around St Croix Island and the importance of full-year fishery closures. FISHERIES/2021/JAN/SWG-PEL/03.

urgently. At the same time more effective monitoring and management of the penguin colonies must also be a high priority. Rebuilding DFFE capacity and good partnerships with the management authorities, private sector, NGOs, academia and other stakeholders are required to address both.

Other pressures

Concerns were raised on the decline in penguin numbers, which is considered to be caused by a number of different drivers. One of the possible causes considered was that sardine and anchovy fishing in the vicinity of penguin breeding islands and, to explore that, the Island Closure Experiment was initiated in 2008 and ran until 2021. The results have been controversial, with different opinions on how to interpret them. The penguin population projections demonstrate the critical need to also address other pressures that have collectively been estimated to account for at least 80% of the current population decline. Rigorous estimation of the contributions of each of these factors to the decline, and prioritization of actions based on those results, is urgent, followed by revisiting, strengthening and implementing an effective **African Penguin Biodiversity Management Plan**, if meaningful progress in halting the decline is to be achieved.

There is general agreement on the most important of these drivers and they are listed in the draft of the 2nd AP-BMP[28] and the Synthesis report. The AP-BMP lists (and elaborates on) the following:

- Food scarcity (food abundance/availability);
- Breeding habitat modification;
- Human disturbance in colonies;
- Catastrophic events;
- Oil spills;
- Disease outbreaks;
- Extreme weather events;
- Predation; and
- Maritime industries.

CAF had very limited time to discuss the other drivers but their general impacts on penguin biology and population dynamics are described in those two documents and are not repeated here. CAF also notes in particular the concerns linked to offshore bunkering and oil spills at Algoa Bay and increasing concerns linked to the potential impacts of underwater noise.[29]

However, notwithstanding the good general understanding of the main drivers, the actions taken so far have not been sufficient to come close to halting the population decline. The 1st AP-BMP was successful in a number of areas. An important achievement was that it resulted in all management authorities working together to implement best practices across the whole population and overall 41 of the 65 actions listed in the BMP were achieved. Despite these successes though, the draft 2nd AP-BMP states "despite the multifaceted approach to the conservation of the African penguin and successful implementation of

[28] DFFE. 2021. The Biodiversity Management Plan for the African penguin (*Spheniscus demersus*) (1st Review). 73pp.
[29] Pichegru L, Nyengera R, McInnes AM, Pistorius P. 2017. Avoidance of seismic survey activities by penguins. Scientific Reports 7(1): 1-8.

several actions listed in the AP-BMP, numbers continued to decrease with South Africa's penguin population falling by 30% between 2013 and 2019".

That reality highlights the need for stronger action focused on the most important drivers if the crisis of the African penguin is to be resolved. From the discussions in CAF and input from Observers, the following actions, all considered urgent, are recommended.

1. Further research is required to quantify the impacts of the different drivers, including wider food availability and any relationship to fisheries, breeding habitat, predation and other factors identified as being of potential concern so that remedial actions can be prioritised. Consideration should also be given to identifying and quantifying the impacts of any previously unknown or neglected factors that may be important. In addition to ICE, some other preliminary attempts have been made to quantify the impacts of other drivers (see e.g. Table 2 in Annex 1 of the Report to the Minister) but these have been fragmented and mainly focused on specific islands. A more rigorous approach to determine the contributions of these drivers to the decline is to construct what is referred to as a 'model of intermediate complexity for ecosystems assessments' (MICE). MICE provide a method for utilising all available relevant data on the variables considered to be most important to the status of the penguin population (e.g. trends in relevant penguin population indicators and the selected drivers) and analysing them collectively in a statistically rigorous framework. The method is internationally recognised and has been widely applied, and CAF recommends applying it in this task.

   Development of a MICE, or any other method to quantify the impacts of different drivers, will be complex and there is a high risk of running into conflicts and differences of opinion, as has been found with ICE. It will be essential therefore to have the process overseen by a (small) multi-stakeholder group and that it should also be advised and guided by an independent, high-level multidisciplinary panel including respected international experts (fisheries and seabird experts). It is also important to note that the development and analysis of such models will be time consuming and that further actions to support penguin management should not wait until such work is complete.

2. The draft 2nd AP-BMP is a comprehensive document addressing a wide range of threats and current and planned actions and research. The primary focus of this version is "on the new and old actions that were not fully achieved in the first BMP" and the aims of the plan include:
   a. To improve the conservation status of the African penguin and ensure its long-term survival in wild populations.
   b. Through addressing threats to their survival, to increase African penguin numbers in South Africa, as measured by the number of pairs breeding in the wild, by at least 5% from the population size estimated within the schedule of this AP-BMP.

   These are ambitious but necessary aims. CAF did not have time to review the draft comprehensively but noted that, if those aims are to be achieved, the Plan should demonstrate clearly that the actions planned would be sufficient to achieve them or, if this is not the case, explain why and what additional efforts would be required to do so.

   It is therefore recommended that the draft AP-BMP should be revisited, the likely impacts of further planned actions evaluated against those two aims and then revised for strengthened

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proposed actions in line with aims and objectives. This recommendation is consistent with the statement in the draft AP-BMP "Furthermore, comprehensive quantitative assessment on the efficacy of implementation of actions or management interventions conducted under the first AP-BMP should also be reviewed as the assessment will be essential for informing adaptive management measures which can be continued to be implemented in the 2nd AP-BMP that can improve the population status to penguins". It is noted that a problem with the 1st AP-BMP was that the period of five years for implementation which was challenging because it did not adequately reflect the biological needs of the species, nor provide African penguins with sufficient time to respond to conservation actions. This must be taken into account in the 2nd phase and sufficient time allowed for robust responses to the BMP measures.

While it is recommended that the review and revision of the Plan should be started immediately it is also important that it takes account of and is guided by the priorities identified under the previous recommendation on quantifying the impacts of the different drivers. The two should therefore proceed in parallel.

The resources needed to achieve the aims are likely to be high and the AP-BMP should also include estimates of the financial and human resources required. CAF recommendations on capacity and resources are provided below.

3. Improved cooperation and coordination between Branches and stakeholders.
   As noted above and below, CAF recommends closer co-operation between branches for joint analysis, planning and prioritisation to support improved understanding and management of penguin population declines. This was also re-iterated by both reviewers of the synthesis report.

4. It is recognised that implementation of these recommendations will require substantial increase in human and financial resources. Taking into account the iconic status of the African penguin for South Africa, the social and economic value of the population through e.g. tourism, and the legal obligation to protect biodiversity in general, every effort should be made to harness the necessary resources. A significant part of that should come from government at national, provincial and local levels, including increasing capacity at O&C, but realistically it is recognised that government funding is unlikely to be sufficient. Efforts therefore also need to be placed in ensuring a coordinated, multi-stakeholder partnership that can work collectively to ensure implementation of a strengthened AP-BMP. This should include, in addition to government, participation by NGOs, CSOs, a range of stakeholders in the private sector, and academia and the partnerships should preferably be formal, with firm commitments from partners to fulfil their agreed roles and within agreed timelines.

Institutional arrangements

Branch Fisheries: responsible for the Small Pelagics Scientific Working Group should consider their current strategy within an ecosystem approach to fisheries management and whether they are meeting their goals. CAF strongly encourages the development of Fishery Management Plans that explicitly include ecosystem management objectives.

Branch Oceans & Coasts: responsible for the Top Predators Scientific Working Group. The Scientific Working Group needs to be strengthened and include consideration of the ecosystem interactions

between top predators e.g. predation, competition etc. The Branch should ensure CAF recommendations on other measures are reflected in the African Penguin Biodiversity Management Plan.

Integrated decision support: a single Scientific Working Group or similar forum should be established with facilitated support for improved consultation and coordination between the Fisheries Branch and Oceans and Coasts to address all considerations where the two branches have shared responsibility, including but not limited to overlapping mandates related to an ecosystem approach. Engagement of other stakeholders must be an integral part of this forum. The forum would for example support continued and constructive dialogue between the Fishing Industry observers and the Conservation Sector Group/NGO observers. It is essential that this forum operates effectively throughout the period of island closures to facilitate joint analysis of information to support further decision making. Such a Scientific Working Group must also consider other pressures on penguins and multi-species modelling as recommended above.

Moratorium on offshore bunkering

Consider extending the moratorium on expansion of offshore bunkering at Algoa Bay until a comprehensive risk assessment is complete and the full suite of risks and mitigation measures including for the African Penguin and pelagic fish have been investigated.

Update Synthesis report to address key points raised in international review

The synthesis report was reviewed by two international experts with important points raised in terms of clarifying content, addressing key omissions including reflecting research from some relevant research outputs and by providing recommendations around potential research gaps and priorities. In addition, observers noted additional background information that had emerged after the synthesis report was completed and that could now be added for additional historical context and clarity of perspectives. The synthesis report is a valuable resource and should be updated by the authors with an opportunity to reflect and respond to points raised. This would provide a consolidated reference for future work to support penguin management including island closures and the monitoring needed to evaluate management actions.

International scientific evaluation of the Island Closure Experiment (ICE) within the next 12 months

The call for an international scientific evaluation of ICE was raised repeatedly by the Fishing Industry observers. The CAF recognises the scientific debate that continues at national-level as well as in the international literature and that this debate may continue for the foreseeable future. CAF therefore recommends that an international scientific evaluation of the Island Closure Experiment and the results presented by the two groups by an expert panel that includes fisheries as well seabird scientists should be undertaken within the next 12 months.

Independent socio-economic study to inform future island closures and minimise impacts on industry but should also consider eco-tourism (opportunity costs)

Both observer groups identified the need for a socio-economic study to explore the actual cost of island closures to the small pelagic fishing industry. In addition, an improved understanding of the socio-economic contribution from penguins by eco-tourism was advanced by the Conservation Sector Group observers. CAF therefore recommends that an independent socio-economic study be commissioned to inform future island closures.

8. Acknowledgements

The CAF would like to acknowledge the work of all the government scientists that participated in the process. We also appreciate all of the efforts and the willingness of the Fishing Industry and the Conservation Sector Group observers to work with the CAF throughout this process, even at the most challenging times. CAF would like to especially thank Dr Linda Harris and Dr Stephen Holness for their technical support provided through the decision support tools such as Marxan and the trade-off plot. We also thank Mr Zishan Ebrahim of SANParks and Ms Anisha Dayaram of SANBI for their GIS support. Last but not least, we sincerely appreciate the CAF Secretariat support provided by Ms Alieya Haider of the DFFE Fisheries Management Branch.

9. ANNEXURE 1: Decision Support Tools

Penguin and small pelagics fishing interactions: methods for systematic decision support

A report on technical support provided to the Consultative Advisory Forum

Linda R. Harris and Stephen D. Holness

Institute for Coastal and Marine Research, Nelson Mandela University, South Africa

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Summary

Technical support was requested for the negotiations led by the Consultative Advisory Forum (CAF) between conservationists proposing permanent closures of the small pelagic fishery around key African Penguin colonies as a response to rapid declines in breeding populations, and the small pelagics fishing industry that was seeking to minimize potential economic and livelihoods losses linked to potential closures. In response, two robust decision-support tools were provided: 1. a systematic spatial prioritisation analysis, and 2. a trade-off plot that measured the relative penguin benefits and costs to industry of all tabled scenarios. The spatial prioritisation analyses assisted in compiling more efficient designs for the closures around the colonies that would secure more penguin benefits for lower costs to industry. The trade-off plot facilitated a visual comparison of scenarios that simple area-based metrics (like percentage closure) could not achieve because not all areas are equal: a site can have lower or higher value for the fishing industry, and lower or higher intensity of use by penguins. Displaying scenarios with a relative measure of benefits to penguins and costs to industry facilitated a robust evidence-based discussion and helped move the debate towards rational and efficient spatial solutions. Note that this study did not address whether this negotiated position will be sufficient to halt the decline in African Penguin population.

Introduction

The background to this report is provided in the Introduction to the main report. This report documents the technical support provided, at the request of the Consultative Advisory Forum (CAF) in February 2022, to assist in the negotiations between conservationists (represented by non-governmental organisations (NGOs) with inputs from government and conservation agency scientists, and the small pelagics fishing industry with inputs from government and a fisheries scientist. Two robust decision-support tools were provided: (1) a spatial prioritisation analysis that aimed to meet targets for penguin features at the lowest cost to industry; and (2) a trade-off plot by which different scenarios could be compared in terms of benefits to penguins and costs to industry.

Methods

Background on Marxan

Systematic conservation planning (Margules and Pressey 2000) is a spatial prioritisation process that can be undertaken using several different programmes, e.g., Marxan (Ball et al. 2009), C-Plan (Pressey et al. 2009), and Zonation (Moilanen et al. 2009; Moilanen et al. 2022). In South Africa, and globally, Marxan is most commonly used (Botts et al. 2019; Watts et al. 2009). Having an algorithm search the decision space is substantially more accurate and efficient compared to doing it by hand. The algorithm searches the decision space far quicker than is humanly possible to find the most efficient solution to meet the targets for all the biodiversity features in a configuration that is in least conflict with other activities.

The minimum set problem formulation, in its simplest form, is defined in the equations below (Ball et al. 2009):

$$\text{min} \quad \sum_{i=1}^{N_s} c_i x_i$$

given the constraints that

$$\sum_{i=1}^{N_s} x_i r_{ij} \geq T_j \quad \text{for all features } j$$

$$\text{and} \quad x_i \in \{0,1\} \quad \text{for all sites } i$$

where N_s is the number of sites, c_i is the cost of site i, r_{ij} is the occurrence level of feature j in site i, and T_j is the target level for each feature j. The Boolean control variable x_i has value 1 for selected sites, and value 0 for sites not selected. Therefore, the input data Marxan requires are spatial layers on biodiversity features (with user-defined targets) and cost, all coded to the planning units.

Input data

We used the planning units and planning domain for the National Coastal and Marine Spatial Biodiversity Plan (Harris et al. 2022), which comprises a 1' grid that covers the South African mainland exclusive economic zone, with a finer-scale shore zone built in. To these planning units, we coded information on small pelagics fishing (a 'cost' metric based on catch, see below for details) and penguins (biodiversity features, see below for details).

A cost layer was used to represent the cost to the small pelagic fishing industry if a planning unit is selected as a closed area for penguins (Fig. 1). The cost layer was based on the percentage contributions to regional weighted catch (i.e., the fleet was split into western, southern, and eastern sections) for the period 2011 to 2019. The values used were the average values for fished years in each region (to avoid the impacts of closed periods). The values were calculated by DFFE fisheries scientist, Ms Janet Coetzee. Sardine catches were weighted 5x that of anchovy based on the value differential, also calculated by Ms Janet Coetzee. The values were multiplied by a fixed amount (1000) to avoid tiny fractions of a percent, and the area of each planning unit in km^2 was added to avoid zero cost units. Hence the overall cost function was:

- Cost for planning unit = 1000*((% contribution to regional anchovy catch) + 5* (% contribution to sardine catch)) + Area in km^2

The specific units used in the cost layer are not very important for this exercise because they are relative values across the area, and we are minimizing for these. The critical issue is the pattern of relative value rather than the absolute values.

Figure 1. *Catch map used to represent the cost to the small pelagic fishing industry if a planning unit is selected as a closed area for penguins.*

The features used to represent penguins were the Marine Important Bird Areas (MIBAs, Fig. 2,3) and penguin distribution densities (Fig. 4) based on satellite tracks during the breeding season that indicate where penguins forage (BirdLife South Africa 2021); hereafter referred to as 'foraging areas'. These datasets were supplemented with a fine-scale analysis of penguin satellite tracks (foraging areas) at St Croix and Bird Island (Fig. 5) used in the Algoa Bay Systematic Conservation Plan (Algoa Bay Project 2019; Holness et al. In review). We included the MIBAs as individual features (i.e., the MIBA around each colony was coded in as a separate feature), coded to the planning units with the 'amount' value equal to the area of planning unit that formed part of the MIBA (Fig. 2). We also included them as a single (collective) feature (MIBA population density, Fig. 3) that was weighted by the number of breeding pairs at each colony, i.e., the value coded to the planning units was the number of breeding pairs per unit area of the MIBA. The foraging areas were also coded to

the planning units as separate features per colony, with the amount value being the average intensity of use by penguins per planning unit. The fine-scale foraging areas for Algoa Bay were coded to the planning units in the same way as for the other foraging areas. The same Marxan parameters (e.g., boundary length modifier, BLM) were used as per the National Coastal and Marine Spatial Biodiversity Plan V1.2 (Harris et al. 2022).

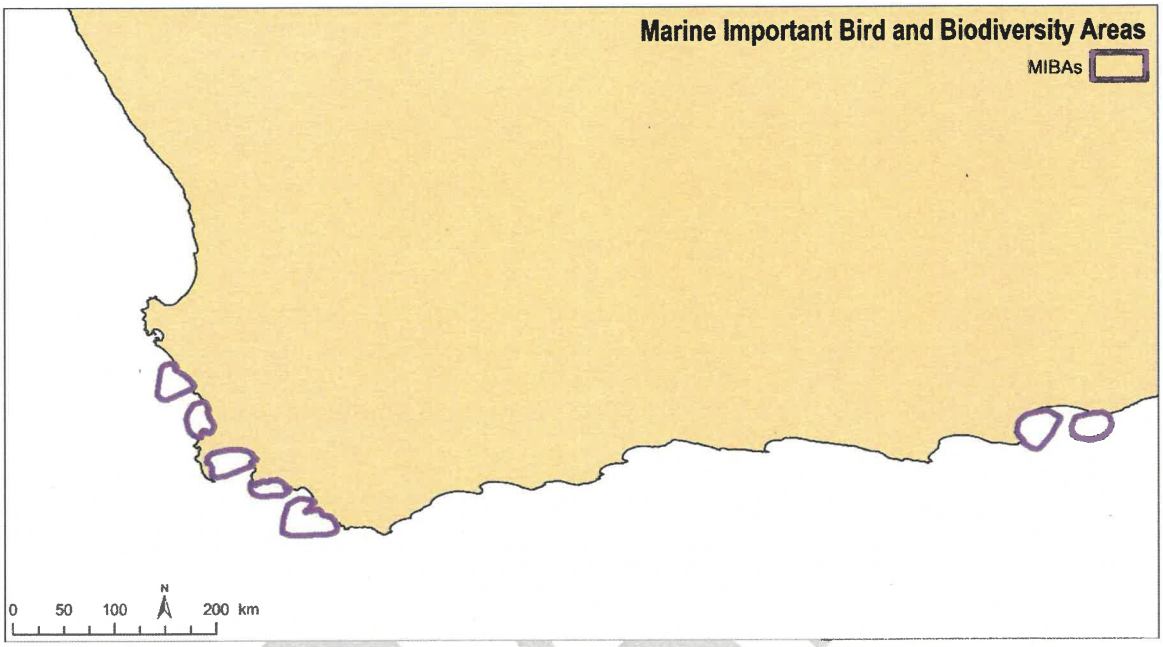

Figure 2. *Marine Important Bird Areas (MIBAs) for African Penguins as defined in 2021. Data source: BirdLife South Africa (2021).*

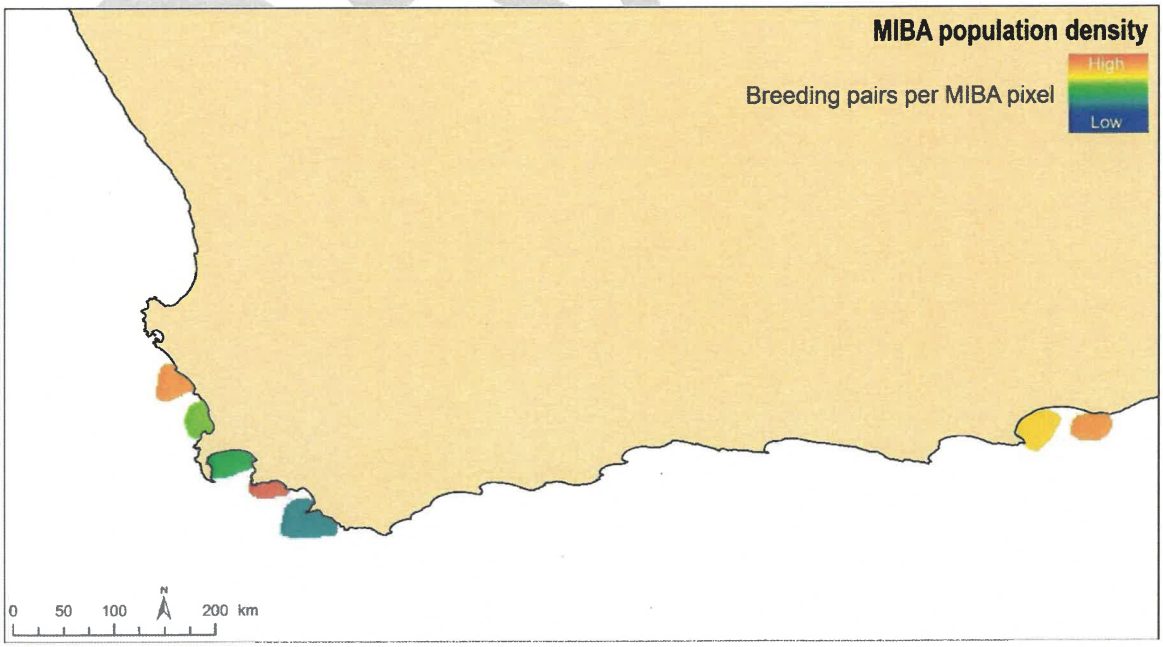

Figure 3. *Marine Important Bird (MIBAs) population density for African Penguins in 2021. MIBA data source: BirdLife South Africa (2021); population data source: DFFE unpublished data, 2021, obtained from Dr Azwianewi Makhado, DFFE.*

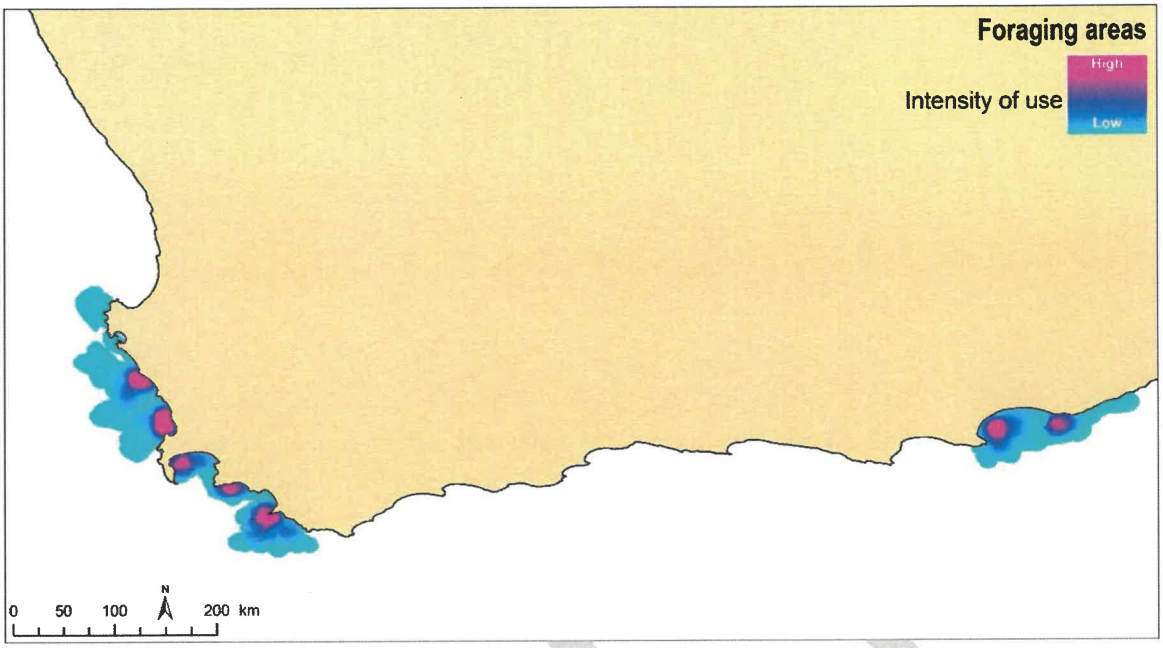

Figure 4. *Distribution density based on the aggregated core home ranges of African Penguins during the breeding season, illustrating that there are some areas that are used more intensively by penguins than other areas. Data source: BirdLife South Africa (2021).*

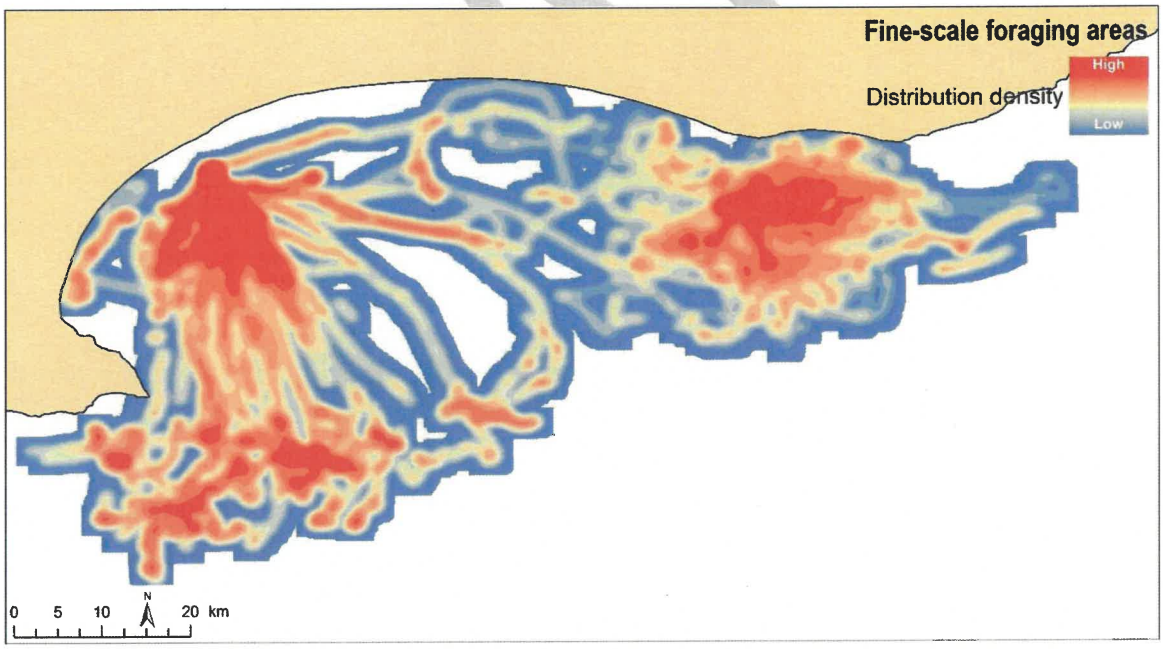

Figure 5. *Fine-scale distribution density based on satellite tracks of African Penguins during the breeding season, showing areas preferred by penguins (warm colours) in a high resolution. Data source: Algoa Bay Project (2019), Holness et al. (In review).*

Scenarios and Targets

We ran six different scenarios in Marxan. The first four explored a range of targets from 65-85% for MIBA features, and 50-75% for distribution density features (Table 1). In the last two scenarios, we locked in the areas that were agreed on by both conservation and industry representatives in

discussions with CAF, and ran the same targets as Scenario 4 (S4: 85-50) with a lower (blm=0.02) and higher (blm=0.10) level of clustering in the solutions.

Table 1. *Targets and input parameters for the six Marxan Scenarios run.*

Scenario[1]	Target for MIBAs and MIBA population density (%)	Target for foraging areas (density distributions) (%)	Boundary Length Modifier
1. S1: 65-50	65	50	0.02
2. S2: 75-50	75	50	0.02
3. S3: 75-75	75	75	0.02
4. S4: 85: 50	85	50	0.02
5. S4: 85-50-AA-002	85	50	0.02
6. S4: 85-50-AA-010	85	50	0.10

[1] The scenarios are named as follows: x (scenario number); Sx (scenario code, reflecting four combinations of targets): xx-xx (target for MIBAs) – (target for foraging areas); – AA (with initial agreed areas locked into the solution); and – xxx (level of clustering, as indicated by the boundary length modifier, where higher values confer more clustering).

Trade-off plot

To evaluate and compare the scenarios in terms of benefits for penguins and costs for industry, we plotted the outputs as a graph. This is because areas within MIBAs are not equal for fishers nor seabirds: there are different intensities of catch (cost) and penguin use (foraging areas, weighted by number of breeding pairs) that need to be accounted for that simple area-based metrics cannot measure. In other words, for a given percent closure:

1. If the closure is located in areas where there is little to no fishing catch (cost), this is a more desirable outcome for industry than if the same extent of the MIBA is closed in areas where there is high catch.
2. If the closure is located in areas where there is high use by penguins, this is a more desirable outcome for conservation than if the same extent of the MIBA is closed in areas where there is lower use by penguins.

To quantify cost to industry, the weighted regional percentage contributions to catch were used. As for the Marxan analysis, the costs were based on the percentage contributions to regional weighted catch (i.e., the fleet was split into western, southern, and eastern sections) for the period 2011 to 2019. The values used were the average values for fished years in each region (to avoid the impacts of closed periods during the Island Closure Experiment). The values were calculated by DFFE fisheries scientist, Ms Janet Coetzee. Sardine catches were weighted 5x that of anchovy based on the value differential, also calculated by Ms Janet Coetzee. Unlike the cost surface for Marxan, the cost data for the trade-off plot do not include the 1000x multiplier or the area of planning units. Costs were calculated by the location of the 1nm fisheries centroid summary points. The cost for scenarios shown in the graph are based on the weighted aggregated percentage regional contribution to catch across the three regions. It was calculated as a portion of the maximum possible cost i.e., full closure of all fished areas.

To quantify 'penguin benefit units' (PBUs), we calculated the average percentage closure of the MIBA (% area of MIBA closed to fishing) and foraging areas (% of density distribution values, i.e., not area based), and multiplied that by the number of breeding pairs at each colony, as counted in the 2021 population counts (DFFE unpublished data, 2021, obtained from Dr Azwianewi Makhado).

These values were then summed across colonies to give the total number of PBUs for a scenario. It serves as a relative measure of benefits to penguins accrued by different configurations of areas closed to fishing. For example, closing small portions of MIBAs that penguins do not use intensively (lighter blue shades in Fig. 4) will have fewer PBUs than larger areas of closure in parts of MIBAs that are more intensively used (purple shades in Fig. 4), especially if the latter type of closures are at colonies supporting higher numbers of breeding pairs. If all parts (100%) of the MIBAs and distribution density are closed, the maximum PBUs equals the African Penguin population size (as counted in 2021).

After testing several thresholds, we used 80% selection frequency from the Marxan scenarios to define the areas proposed to be closed to fishing. We used those areas to calculate cost and PBUs. For comparison, we also calculated and plotted the cost and PBUs of numerous other scenarios proposed by CAF, the conservation sector, and industry.

Although Boulders Beach was not part of the negotiations because False Bay is already closed to small pelagics fishing, we still included it in our Marxan analyses as part of a comprehensive systematic approach across the full extent of the penguin population at the seven main colonies. We also included Boulders Beach in the costs and benefits of all scenarios evaluated for the trade-off plot, except for the ICE scenarios (where the focus there was specifically on the closures from ICE) and the scenario of current closure in MPAs (because the closure is not an MPA).

Results

The first Marxan outputs (Scenarios 1-4) were illustrated as selection frequency maps, where each planning unit (pixel) was coloured by the number of times it was selected during 100 runs of the annealing routine, for Dassen Island and Robben Island (Fig. 6), Boulders Beach, Stony Point, and Dyer Island (Fig. 7), and St Croix and Bird Island (Fig. 8). The algorithm showed a preference for meeting targets for penguin features in areas where fishing cost was lower; it avoided areas of high value to industry (high cost). As the targets were increased (i.e., across scenarios), larger areas were selected. This was particularly the case when the target for the foraging areas was increased from 50% to 75%.

Because the analysis was intended as a decision support tool, we deliberately did not set the clustering parameter too high (which would have forced selection of high-cost areas for the sake of having a neat boundary). Therefore, at a selection frequency of 80%, the resulting boundaries were not necessarily practical for implementation: further manual editing would be required to include omitted planning units within a surrounding area of selected planning units, and vice versa, to construct rational boundaries. We felt these subsequent steps should be taken by CAF rather than ourselves, and chose rather to present the results as 'raw' mathematical solutions that could inform discussions and decisions. CAF members then worked with observers to further develop potential boundaries during the process. Boundaries were guided by: the Marxan outputs; the cost layer; penguin foraging areas; and existing proposals, including the initial agreed areas.

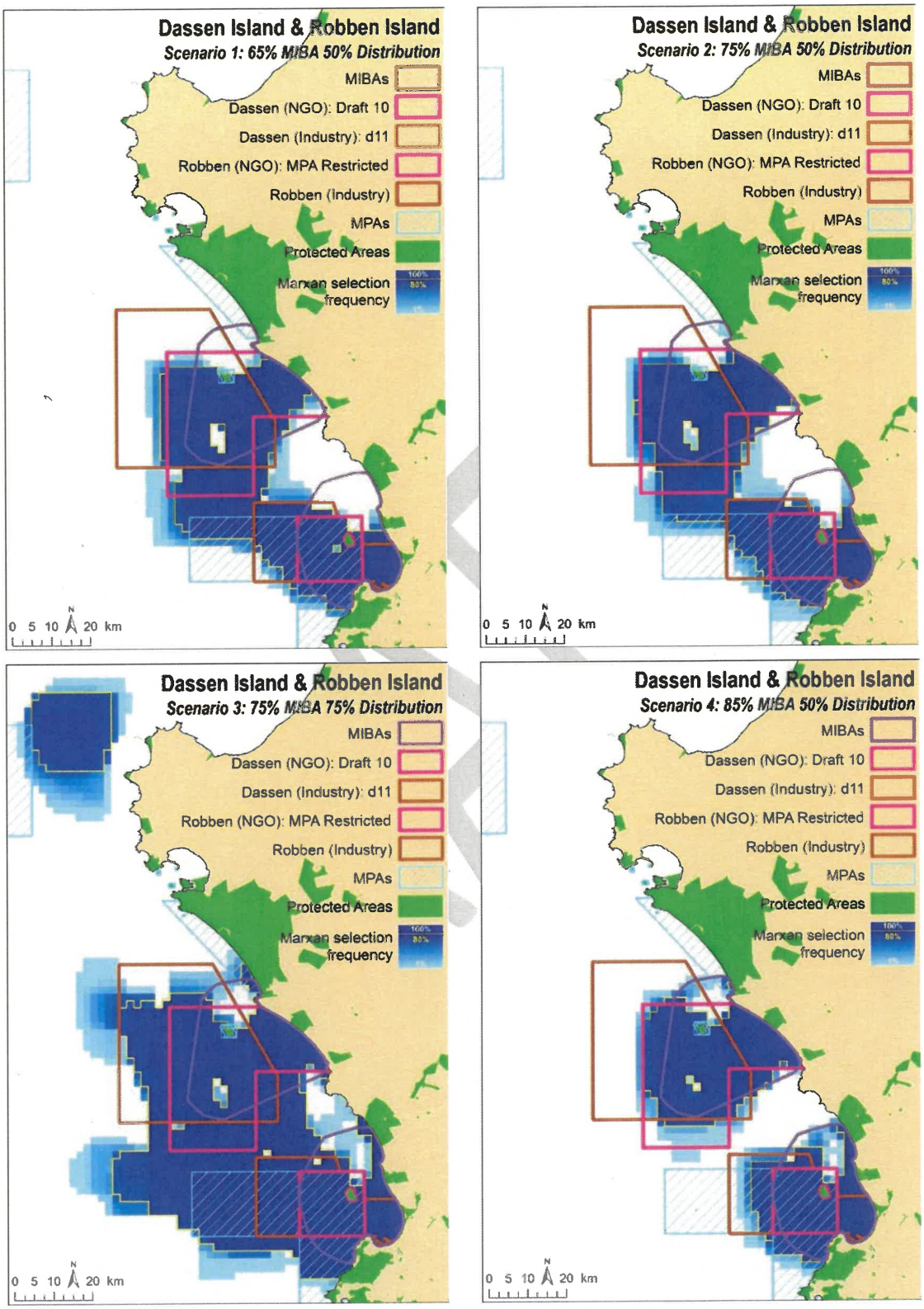

Figure 6. *Maps of Marxan selection frequencies, overlaid by the* industry *proposal (brown) and* conservation fallback *proposal (pink), and current Marine Protected Areas (MPAs, blue hatch) for Dassen Island (north) and Robben Island (south) MIBAs (purple).*

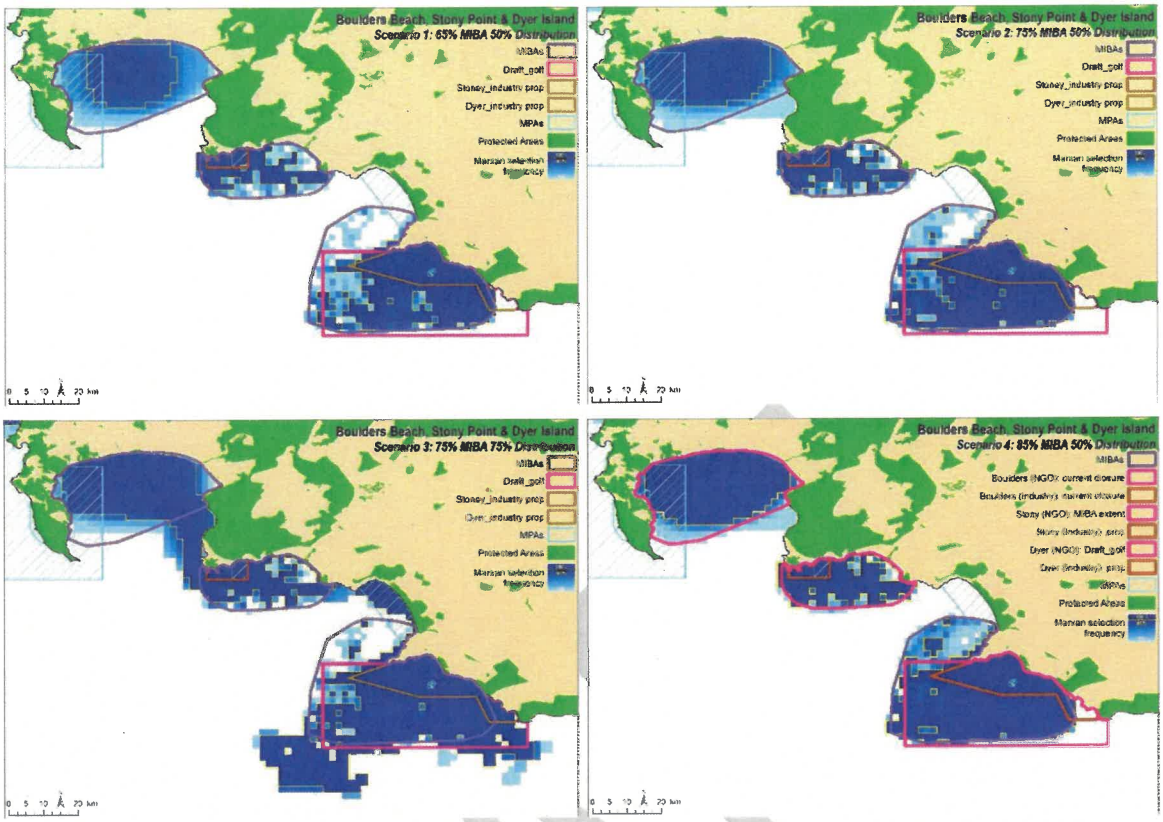

Figure 7. *Maps of Marxan selection frequencies, overlaid by the* industry *proposal (brown) and* conservation fallback *proposal (pink), and current Marine Protected Areas (MPAs, blue hatch) for Boulders Beach (west), Stony Point (centre) and Dyer Island (east) MIBAs (purple).*

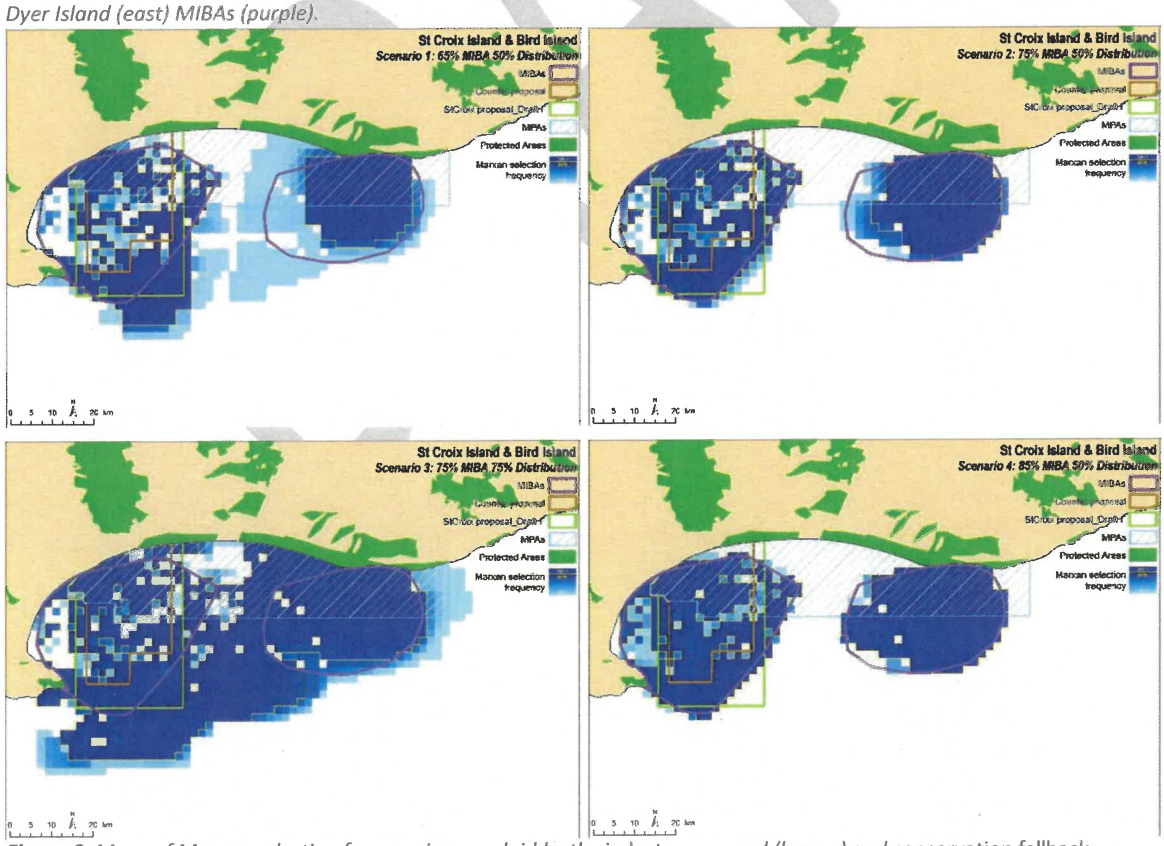

Figure 8. *Maps of Marxan selection frequencies, overlaid by the* industry *proposal (brown) and* conservation fallback *proposal (green), and current Marine Protected Areas (MPAs) for St Croix (west), and Bird Island (east) MIBAs (purple).*

During the meeting at which the Marxan results were presented, a set of initial agreed areas for closure were identified by the conservation sector and industry (with the intent to build on these in further discussions). These initial agreed areas were locked into the resulting solutions (i.e., pre-selected as part of the output) and the algorithm rerun (Fig. 9), with the intent of looking to find the most complementary areas to select to build on the initial agreed areas. Because the outputs were so similar between Scenarios 5 and 6, only Scenario 6 (with slightly more practical boundaries) was used. They were very similar to the previous outputs, but there were fewer gaps and fewer isolated planning units selected.

However, some of the areas were agreed with conditions, including (in the case of industry) access to the Sixteen Mile Beach Marine Protected Area (in the context of Robben Island) and seasonal closures (at St Croix). CAF subsequently clarified that seasonal closures would not be recommended and that the opening of MPAs was beyond the scope of CAF. CAF took the decision to rather take a 50:50 percentage area–based approach at this point. Therefore, Scenario 6 (Fig. 9) was not considered further.

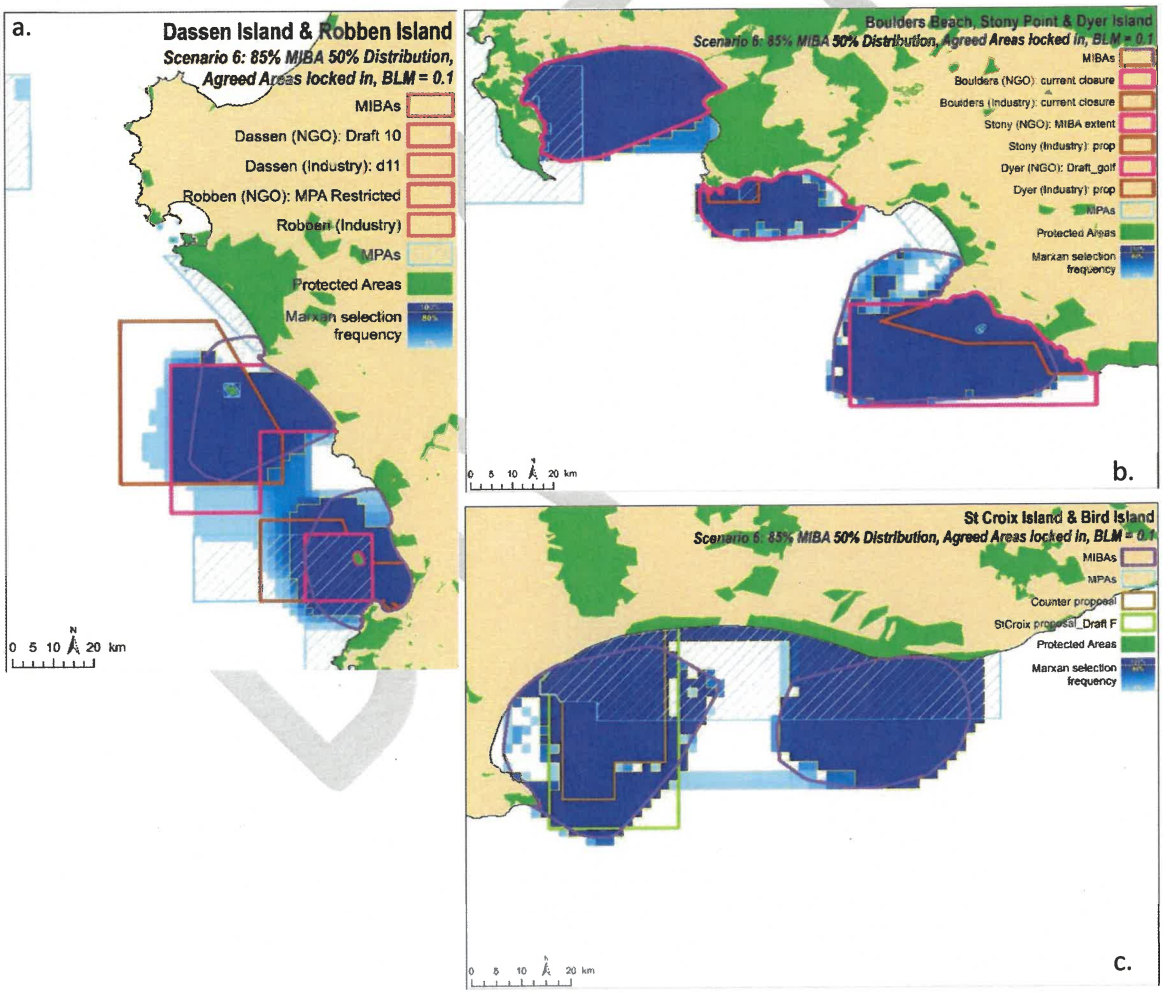

Figure 9. *Maps of Marxan selection frequencies, overlaid by the* industry *proposal (brown) and* conservation fallback *proposal (pink/green), and current Marine Protected Areas (MPAs) for (top) Dassen Island and Robben Island, (top right) Boulders Beach, Stony Point and Dyer Island, and (c) St Croix, and Bird Island MIBAs (purple).*

The initial Marxan scenarios (1-4, Figs. 6-8) were intended to illustrate that Marxan can deliver efficient solutions, and get more benefits for a given cost (i.e., lie to the left of the proposed scenarios on the trade-off plot), and thus would be a useful decision-support tool. This was clearly demonstrated (Fig. 10), although it is recognised that these scenarios would need to be rationalised by adjusting the solutions into more practical boundaries before they could be implemented, which would reduce some of the efficiency.

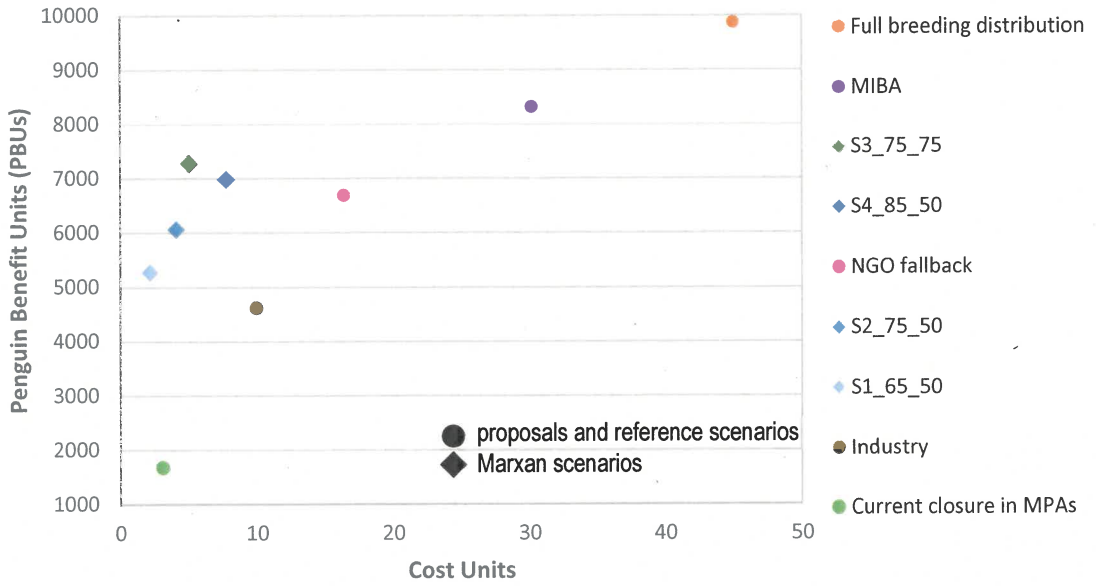

Figure 10. *Trade-off plot illustrating the benefits for penguins and cost to industry for each of the initial proposals and reference scenarios (i.e., closure of the full breeding distribution – MIBAs and foraging areas, closure of the full MIBA, and current protection afforded by existing MPAs) (circles) compared to the Marxan scenarios (diamonds). Higher PBUs are a better outcome for penguins, and lower cost units are better for industry.*

The follow-up Marxan scenario (Scenario 6, with the initial agreed areas locked in) did give a less efficient solution than the unconstrained Marxan analysis, but was still more efficient than the initial proposals and reference scenarios, delivering more penguin benefits for a given cost amount (Fig. 11). However, as noted above, decisions were subsequently made to use a percentage-area approach and so this scenario was not considered further.

The initial Marxan outputs were used to inform subsequent proposals by the conservation sector, industry, and CAF, based on the proposed percentage area to be closed at each colony by each group. This resulted in a set of scenarios that lay between the original proposals and the efficient (but impractical) initial Marxan scenarios on the trade-off plot (Fig. 11). A logarithmic trendline was fitted to all the Marxan-informed scenarios plus the reference scenarios to illustrate the generalised relationship between penguin benefits and industry costs (Fig. 11). Importantly, the trendline is not intended to be a predictive plot in a strict mathematical sense; if that were the case, the trendline would need to be fitted to data from all scenarios not only the selected ones, and more scenarios in the upper and lower range would need to be added. Rather, it is fitted as an illustrative line to show the generalised relationship, where at the lower end of the graph, selection of areas with relatively little increases in costs can result in relatively big increases in benefits to penguins, but that as more area is selected (upper end of the graph), relatively large increases in cost are required to get lower increases in benefits to penguins.

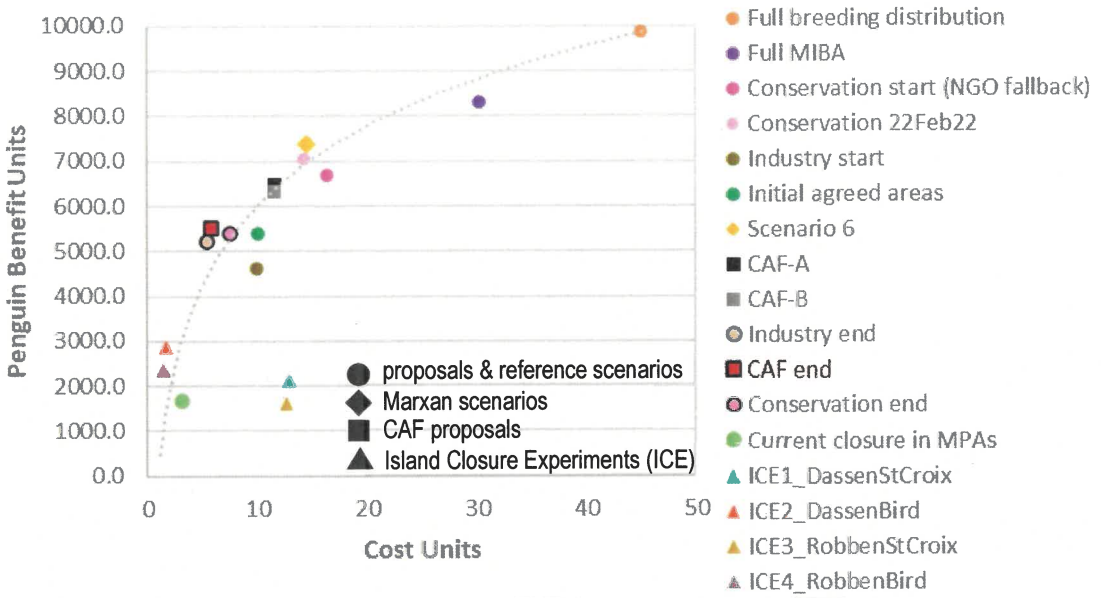

Figure 11. *Trade-off plot illustrating the benefits for penguins and cost to industry for each of the proposals and reference scenarios (circles) compared to the Marxan scenarios (diamonds), proposals compiled by CAF (squares), and previous island closure experiments (triangles). Higher PBUs are a better outcome for penguins, and lower cost units are better for industry. The dotted trendline is based on the Marxan-informed proposals by CAF, conservation and industry and the reference scenarios.*

The Marxan-informed CAF-A or CAF-B proposals lie at an approximate tangent to the trade-off plot trendline. They also lie between the conservation fallback scenario and the initial industry scenario, delivering slightly fewer benefits than that of the conservation fallback for slightly higher cost than was proposed by industry (Fig. 11). Considering the additional cost to industry between the scenarios of no further closures (i.e., current closure in MPAs) and full MIBA closures (increase of 27.0 cost units), CAF-A and -B require a third of that cost amount (8.4 additional cost units).

Beyond this point, much more increases in cost are required to get increases in penguin benefits, as illustrated by the trendline. Note that although designs can be optimised between the current closure in MPAs and full closure of MIBAs (i.e., there is variability in the possible combinations of costs and benefits between these points), there is no variation at the points on the graph indicating current closure in MPAs, closure of the full MIBA and the full breeding distribution because these are set areas, each with a single benefit and cost value.

The final proposals (Table 2), Industry end, Conservation end, and CAF end (highlighted with black outlines in Fig. 11), are Marxan-informed but with the percentage closures at each colony given by each group in an induced compromise in line with the 50:50 approach that CAF set when it became clear that an agreed compromise seemed unlikely. These are all more efficient than the original proposals by the conservation sector and industry. Of these three proposals (Industry end, Conservation end, and CAF end), the final CAF recommendation (CAF end) is most efficient, delivering the most penguin benefits for a given cost.

Table 2. Proposed percentage of MIBAs for closure to pelagic fishing from final proposals advanced by CAF, the conservation sector and industry. Note that the industry and conservation compromises were induced in line with a 50:50 % approach advanced by CAF when agreed solutions could not be advanced.

	% Marine Important Bird Areas (MIBA) proposed for closure		
Penguin colony and associated foraging area	CAF 07 March 2022	Conservation SG 05 March 2022	Industry 04 March 2022
Dassen Island	84	100	54
Robben Island (41% in Robben Island MPA)	41	41	95
Stony Point (5% in Betty's Bay MPA)	16	5	23
Dyer Island	40	80	20
St Croix (15% in Addo Elephant Park MPA)	27	15	27
Bird Island (45% in MPA)	93	93	93
Total extent (%) in MPAs	106	106	106
Additional % MIBA proposed to be closed	194	228	206
TOTAL	**300***	**334**	**312**

*CAFs framework for compromise at 50:50 which represents 300% of the MIBAs

Conclusions

The 50:50 approach provided a rational way to find a compromise between two positions provided by conservation and industry, respectively. The Marxan analyses helped to improve efficiency in the proposed scenarios, particularly over the initial industry and conservation proposals. Displaying scenarios with a relative measure of benefits to penguins and costs to industry facilitated a robust evidence-based discussion and helped move the debate towards rational and efficient spatial solutions. The results presented here should not be taken to imply that the negotiated or recommended closures are sufficient, and it is highly likely that additional measures will be required to avoid further decline in the African Penguin populations. It is noted that CAF has recommended further work to comprehensively assess the drivers of the decline and to strengthen the African Penguin Biodiversity Management Plan to address those causes effectively. Innovative solutions will be needed, and this report demonstrates the value of decision support tools in resolving complex spatial negotiations. In conclusion, four key reflections emerged from the technical team providing decision support:

1. **Marxan is an excellent decision-support tool** for informing negotiations of this nature, and more time to explore it would be useful for future negotiations.
2. **It would have been more effective if the objective of the negotiation process (and thus, parameters of the optimisation process) could have been established early on**. One could optimise the benefits for a given level of cost; minimise the cost for a given level of benefits; or find the optimal trade-off position between costs and benefits (with or without additional constraints). This would allow a more robust comparison of scenarios on the trade-off plot, and provide all groups with a clear point to aim and progress towards.

3. Of the **final three proposals** by the conservation sector, industry and CAF, the final **CAF recommendation is the most efficient scenario**.
4. Any systematic conservation plan is dependent on its input data. **Improved data on penguin use** of marine space, improved data on **ecological processes** (e.g., movement corridors for small pelagic fish), as well as more **refined fisheries data** (e.g., to better accommodate for closed periods, fuel costs, position of harbours) **would improve the analysis**, though overall trends are likely to be robust.

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10. Appendices

a. Appendix I: List of meeting participants

The CAF members

1. Dr Theressa Frantz (Chairperson)
2. Prof Anesh Govender (Deputy-Chairperson)
3. Prof Jeppe Kolding
4. Prof Kerry Sink
5. Prof Kevern Cochrane
6. Mr. Loyiso Phantshwa
7. Dr Welly Qwabe
8. Mr. Zolani Mbanjwa

Conservation Sector Group observers

9. Dr Lauren Waller – Environmental Wildlife Trust
10. Dr Alistair McInnes – Birdlife SA
11. Mr. Craig Smith – WWF

Fishing industry observers

12. Mr. Mike Copeland – West Coast
13. Dr Mike Bergh – West Coast
14. Mr. Redah De Maine – South Coast

DFFE Officials

15. Dr Azwianewi Makhado
16. Mr Herman Oosthuizen
17. Mr. Makhudu Masotla
18. Ms Janet Coetzee
19. Dr Gerhard Cilliers

SANParks

20. Dr Alison. Kock
21. Dr Cloverley Lawrence
22. Mr Zishan Ebrahim

CapeNature

23. Mr. Pierre De Villiers

b. Appendix II: List of documents presented and tabled at CAF meetings

1. Annexure 1 Consultative Advisory Forum (CAF), Summary Report on the outcomes of the Extended Task Team on Penguin Conservation, August 2021

2. Annexure 1-1: The Synthesis Report, Scientific Information relating to Penguin declines, Small Pelagic Fishery, and Island closures: ANNEXURE A: REPORT TO THE MINISTER, Department of Forestry, Fisheries, and the Environment: A Synthesis of Current Scientific Information Relating to the Decline in the African Penguin Population, the Small Pelagic Fishery and Island Closures.

3. Annexure 1-1-a. Review by Trathan to J Beaumont: Letter to the DDG Judy Beaumont, Oceans and Coasts, DFFE from André E. Punt, Professor and Director (Aquatic and Fishery Sciences), University of Washington Seattle, WA 98195-5020 U.S.A, 1 September 2021

4. Annexure 1-1-b. Review by Punt to J. Beaumont 1110, SA Penguins Synthesis

5. André E. Punt., Professor and Director (Aquatic and Fishery Sciences)

6. Annexure 1-2 PETT 12: Extended Task Team Conservation Sector, 211103, African Penguin Island Closures: Conservation Stakeholder Synthesis Report, 2 November 2021

7. Annexure 1-2 PETT 10b: Penguin colonies: Closure area drafts 1. Dassen 2. Dyer 3. St. Croix, 26 October 2021

8. Draft Terms of reference for the Consultative Advisory Forum for Marine Living Resources - Special Project to review penguin conservation and small pelagic fisheries interactions and recommend fishing limitations from the 2022 fishing season, presented by the Chairperson Theressa Frantz to CAF on the 1 February 2022

9. CAF Draft Road Map, presented by the Chairperson Theressa Frantz to CAF on the 1 February 2022

10. DG briefing: Penguin Conservation and Island Closure, 17January 2022 PowerPoint Presentation of Ashley Naidoo presented by Janet Coetzee to CAF on 1 February 2022.

11. African Penguins: Lessons Learnt, by Alison Kock from SANParks presented to CAF on 3 February 2022.

12. Consultative Advisory Forum for Marine Living Resources (CAFMLR) NGO / Academic Conservation Sector Observers, presented by Lauren Waller to CAF on 3 February 2022.

13. Anchovy and sardine catch maps: total catch per 2nm 2011-2019 presented by Janet Coetzee to CAF on the 3 February 2022

14. Rationale for SAPFIA and ESCPA's Position and Proposals on Island Closures presented by Mike Bergh to CAF on 3 February 2022

15. The best scientific evidence: FISHERIES/2022/SEP/SWG-PEL/59 tabled by Mike Bergh in the continuation of his presentation with extra slides to CAF on 9 February 2022

16. Presentation of ESCPA Proposals for Island closures: St Croix presented by Redah de Maine to CAF on the 9 February 2022

17. Consultative Advisory Forum (CAF) for Marine Living Resources Special Project: Penguin and small pelagic fishery interactions, Proposed process for the way forward presented by CAF Chairperson, Theressa Frantz on 9 February 2022

18. Table 2 of the Synthesis Report presented by Lauren Waller to CAF on the 15 February 2022

19. Further economic Information: anchovy and sardine catches from 2001 to 2020 presented by Craig Smith to CAF on the 15 February 2022

20. African Penguin Biodiversity Management Plan presented by Millicent Makoala to CAF on the 15 February 2022

21. Penguin and small pelagic fishery interactions: A systematic approach to decision support by Dr Linda Harris & Dr Stephen Holness, Nelson Mandela University, presented to CAF on 24 February 2022

22. SAPFIA/ESCPA Proposal: Presentation to CAF by Mike Bergh on 24 February 2022

23. Estimated Socio-economic Impact of Island Closures. Document submitted to CAF by SAPFIA on 4 March 2022

24. Conservation Sector Group (CSG) concerns regarding recent developments in the CAFMLR deliberations on proposed island closures compromise metrics and recommendations for a more balanced approach presented by Alistair McInnes to CAF on the 8 March 2022

25. Comments on the CAFMLR process taken leading to the CAFs recommendations on island closures by SAPFIA submitted to CAF on Wednesday 9 March 2022 (This document was supported by the ESCPA)

26. Recommendations proposed by SAPFIA, 8 March 2022, submitted to CAF on 9 March 2022.

27. Recommendations from Conservation Sector Group, submitted to CAF on 9 March 2022.

c. Appendix III: Recommendations from the Fishing Industry Observers

Recommendations proposed by SAPFIA, 8 March 2022

A scientific evaluation of ICE

Given that CAFMLR have stated that they did not have the time nor the expertise to evaluate the science around the Island Closure Experiment, CAFMLR should recommend to the minister that a structured international scientific evaluation process be planned and prosecuted during the next 12 months. The terms of reference for this scientific evaluation panel should be carefully structured to maximise the benefit that will be derived from this exercise. SAPFIA can provide details about appropriate ToRs for this process.

The evaluation process referred to should return its evaluation within the next 12 months and a further decision making process should then be run, most likely via CAFMLR, to recommend whether the continuation of the closures are appropriate, and if not what changes should be enacted.

Facilitation of MICE modeling work

Since fishing closures will have very little if any benefit for penguins, it is a matter of urgency that the mechanisms underlying the steep decline in the penguin population be determined. Models of Intermediate Complexity for Ecosystem Assessment (MICE) are a promising and the leading contender for multispecies approaches which would provide insights into these mechanisms. CAFMLR should recommend that the Minister give the execution of these MICE models impetus by requiring DFFE to make the necessary data available, and by stipulating a timeframe of 12 months for the return of initial results from MICE models.

Experimental Design

There have been suggestions for the timeframe of island closures ranging between 1 and 10 years. However, the nature of proposed closures has been informed by considerations of sufficient contrast in order to detect meaningful effects. This is an experimental design problem that requires the application of suitable scientific and statistical methods, and should not be based on qualitative commentary.

16 Mile Beach MPA

CAFMLR have mentioned that they do not have jurisdiction over 16 Mile Beach MPA, in order to provide an option for mitigation of the costs of closures on industry. SAPFIA therefore requests CAFMLR to recommend that the Minister provides access to the 2 km seaward portion of the MPA to small pelagic fishing.

Duration of Closures and Socio-Economic Studies

A short-term proposal should be introduced now which will allow area closures for penguins but minimize economic impact on industry so that proper independent socio-economic studies be completed in parallel to the scientific evaluation and MICE and which will all feed into a solution within 12 months.

d. Appendix IV: Recommendations from the Conservation Sector Group Observers

Recommendations from Punt:

- More details on the economic analysis is warranted as fisheries are well known to be able to modify their behavior to some extent. Simply summing lost revenue (or lost revenue multiplied by an economic multiplier; presumably from an input-output model of some sort) is insufficient

- Need understanding of the movement dynamics of anchovy and sardine; for example, how recruitment of anchovy which occurs north of the major colonies eventually "feeds" the colonies. Fig. 5 could be annotated by the feeding range from each colony (if this is known)

- Lost revenue is multiplied by an economic multiplier and then divided by wholesale catch value. This seems inappropriate because the denominator does not account for the economic multiplier effects. It is appropriate to refer to "whole of economy" effects but the analysis needs to be based on comparable metrics.

- The economic analysis of both the fishery and eco-tourism should account for opportunity costs, which appears not to be the case at present.

- The Ginsburg (2019) analysis seems to be very relevant but is criticized by Bergh (2020a) for being "too simplistic". It would seem appropriate to update this analysis. It is well-known that that fishers are innovative and can modify behavior in response to management actions such as time-area closures.

- It would seem from Table 2 that a key conclusion is that island closures would constitute more than half of the reduction due to food abundance and availability, but this but this (perhaps naïve) conclusion should be stated and discussed.

General recommendations:

- **The design of the island closures should consider differences in foraging ecology, both within and between sites**
- **The spatial radial extent and temporal seasonal duration of the island closures should be redesigned around the seasonal foraging behaviour of African penguins, based on an agreed distance quantile; this is best if island specific.**
- **Implementation of low-impact buffer zones around each island closure would prevent industry 'fishing the line'.**
- With 13 years of preliminary results, **an agreed analysis framework should be developed and implemented.** Experience to date should help dictate the necessary framework and sample sizes. The analysis framework should be internationally peer-reviewed prior to implementation
- Consideration is necessary with regard to **spatial management or zoning of the stock within its geographic distribution, including spatial and temporal catch limits, and/ or individual vessel quotas.**

- **Mapping of the spatial distribution of spawning areas, or other areas critical to particular life history stages is necessary, and if appropriate, protected.**
- **Incentives to reduce aggregation of harvesting in coastal locations, and reduce the race to fish, may help avoid competition with dependent predators.**
- **Risk Assessments that evaluate spatial/ temporal estimates of stock, consumption by dependent predators, and removals by the fishery will identify areas of critical concern.**
- **Conduct Fine-scale studies of prey availability**
    - understanding the mobility
        - understanding the mobility of the stock, and its ability to replenish a geographic area through local movement will be key for understanding rates of biomass depletion (and replenishment), whether by dependent predators or by harvesting. Also important, will be to understand whether the fishery operates directly outside the closed areas, 'fishing the line', reducing movement of stock into the island closures. Low-impact buffer zones with reduced catch limits around each closed area would reduce the impact of vessels congregating close to each closed area.
- **Understand why the fishery preferentially operates in coastal waters**, rather than further offshore
    - "Interestingly, the fishery aggregates in near shore areas, close to penguin breeding sites, even though the stock(s) appears widely distributed across the shelf (bathymetric depths more shallow than 200 m). These plots mask variability that is undoubtedly critical to ecosystem function and fishery operation. Inevitably, coastal habitats are key for land-based dependent predators such as the African penguin, so conflicts are bound to arise."
    - Understanding the reasons why harvesting preferentially operates close to shore, whether it is because of logistic constraints, more predictable stock biomass, or elevated stock biomass is important. The near shore focus of the fishery is marked, and needs to be justified given apparent stock availability further offshore and the importance of coastal waters for many predators
    - It is important to understand whether South Africa utilizes smaller scale management units with individual catch allocations for the small pelagics fisheries, or whether the fishery is able to aggregate wherever it prefers
        - DFFE (2021) does not answer this issue. Figures and maps showing the annual/ seasonal stock distribution and the annual/ seasonal catch distribution would be helpful, plotted at scales relevant to predator requirements. Management of harvesting to avoid fishing aggregations is not only precautionary, but also probably vital for near shore predators. This requires information about temporal and spatial prey availability, predator consumption and fishery demand.

- **Management efforts should attempt to build population resilience in the face of harvesting, other threats, and climate change.**

- Although dependent species consume more sardines and anchovies than those harvested by industry, and although the absolute amount taken is important, a critical issue is the location of harvesting which is primarily coastally concentrated.

- The dichotomy of views surrounding the island closures study requires immediate resolution. Only through common enterprise will a result emerge that leads to consensus. Ignoring legitimate stakeholder concerns makes it difficult to build trust and move towards consensus. NEMA (Act 107 of 1998) requires cooperative governance and intergovernmental relations and a holistic approach to ensure environmental protection.

Trathan:

Highlights important considerations for an EAF:

- The ecosystem approach to fisheries management requires consideration of target species, dependent species and environmental variability, including ecological interactions and processes
- Understanding anthropogenic drivers of change is also important, including how and which stakeholders accrue benefits.
- Ecological models that reflect the complexity of the Benguela system (Travers-Trolet et al. 2014; Shannon et al. 2020) show promise in unravelling the observed dynamics of the upwelling ecosystem and highlight the importance of exploring spatially disaggregated approaches.
- Understanding the spatial-temporal dynamics of ecosystems is key, as ecosystems rarely, if ever, operate through average states
- Management models need to be robust to different states of the ecosystem, including depleted stock states, or reduced productivity. In the context of climate change, stock recruit relationships also need to be robust to changing oceanographic conditions, reflecting altered levels of uncertainty associated with the changing climate. Management models that do not adequately conceptualise an ecosystem and its dynamics must rely upon the precautionary approach.
- The best management scenario is where ecosystem scientists and fisheries scientists cooperate; with an ecosystem approach to management, this should be mandatory
- The congruence between trends in prey abundance and the population sizes of African penguins and two other endangered seabird species, Cape gannets (*Morus capensis*) and Cape cormorants (*Phalacrocorax capensis*), that are endemic to the Benguela ecosystem and that feed primarily on anchovy and sardine, highlights the critical need to understand ecosystem change and predator-prey-fisheries interactions
- It is not credible to delay investigation of resource competition with fisheries, given the ongoing rapid decline in African penguin populations.
- Resilience of individual penguins is likely to increase with abundant prey levels and adequate levels of nutrition, and decrease in conditions of prey depletion. High energetic status may enable penguins to overcome a range of threats (including some included in DFFE 2021, Table 2). In the context of such threats, and including climate change, it would be sensible to enhance the energetic status of individuals in order to build resilience.
- Understanding foraging demands for predators requires information about their population size, individual status and about their prey field, including about prey biomass abundance and distribution. To allow for uncertainty in the prey field, the

amount of prey available to predators must be greater than their energetic requirements. Estimates of prey availability must therefore be at relevant scales. Regional estimates of prey are not appropriate and estimates must be at the scale of predator foraging.

- Competition between different predators, and between various predators and the fishery, requires a more complex model construct. When managing target species that are critical to a wide range of dependent species, models incorporating wider ecological interactions would be beneficial.
- Overharvesting of small pelagic fish can have detrimental effects on dependent predator populations. When stock population sizes, or productivity levels are low, as is now the case for stocks in the Benguela system (DFFE 2021), high harvest levels are especially concerning. As such, yield estimators and decision rules used in the operational management procedure would bear further scrutiny given the depleted status of sardine stocks and the apparent recently increased exploitation rate post 2000 (DFFE 2021, Figures 3 and 14).
- If government sources of funding are not available, and based upon the 'polluter pays principle', it would be sensible to facilitate adequate research funding through a research levy on the fishery (Coffey and Newcombe 2001). For an industry where, according to DFFE (2021), the estimated wholesale catch value was R2.4 billion in 2014, a reasonable research levy should be feasible.
-

Recommendations from Team Chat

- The small pelagic permit conditions makes provision for industry to provide socio economic data to DFFE on request. Is this something that the department can follow up on?
- Recognising the worrying state of many threatened marine top predators, such as the listing of 3 Benguela endemic seabird species (that are all forage fish specialists) to endangered during this century, that a forum be developed with a focus on integrating ecosystem concerns into decisions around fisheries resource management with clear ToR and balanced representation with the goal of implementing an effective Ecosystem Based Management approach – provision and justification for this is recommendation is stipulated in the Marine Living Resources Act and the growing concern for the state of our ecosystem.
- Recommendation: Management of the small pelagic fishery needs to be done in a manner that takes top predator needs into account (both in time and space)
- Closure design should also be representative of meaningful biological criteria

- Request DFFE to use provisions in permit conditions to request socio-economic data from all small pelagic rights holders between 2008 - 2020 (i.e. the Island Closure Period) to compare actual impact comparisons to industry between open and closed years

- Assess how representative the SPSWG annual summary documents are in terms of the ecosystem based concerns raised during these proceedings and - where there are specific ecosystem-based requests for consideration in management decisions during these meetings – assess how were these reflected in terms of recommendations to management and subsequently acted on? How can we learn from this and advance a more representative approach and process?

1138
"SFA24"

Workflow Details

⊟ 217434 Gazette on the Draft Report on Special Project on Penguin and Small Pelagic Fishery Interactions

Date Initiated:	Initiator:	Current Performer:	Due Date:	Done Date	Workflow Status:
09 May 2022 12:08 PM	Millicent Makoala	Ashley Naidoo	28 June 2022 10:37 AM		Executing

Initiator Comments:

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
Step 05 - Director	Moses Ramakulukusha	Forward to CD	11 May 2022 12:08 PM	13 May 2022 04:49 PM	
Step 06 - Chief Director	Lisolomzi Fikizolo	Recommended	01 June 2022 12:03 PM	30 May 2022 05:41 PM	
Step 06D - CD: Budget & FM	veronica steyn	Funds available	01 June 2022 05:41 PM	01 June 2022 11:37 PM	Funds available for publication in Gazette Veronica Steyn CD B&FM
Step 06E - CFO	Andiswa Oyama Jass	Authorised to proceed	03 June 2022 11:37 PM	02 June 2022 05:15 PM	The submission is supported. A. Jass 02/06/2022
Step 07 - O&C Quality Control	Nosiseko Mhlahlo	QA completed-forward to DDG	06 June 2022 05:15 PM	03 June 2022 10:37 AM	Dear ADDG Please find attached for your attention. Thanks Nosiseko
Step 08 - Deputy Director-General	Ashley Naidoo		07 June 2022 10:37 AM		
Step 08B - Print Documents for DDG	WF: DDG:O&C Print Group		09 June 2022 10:37 AM		
Step 09 - Deputy Director-General	WF: DDG:O&C		13 June 2022 10:37 AM		
Step 09B - Print Documents for DDG	WF: DDG:O&C Print Group		15 June 2022 10:37 AM		
Step 11 - Language Practitioner	WF: Language Practitioner		16 June 2022 10:37 AM		
Step 12 - Director-General	WF: DG		20 June 2022 10:37 AM		
Step 12B - Print Documents for DG	WF: ODG Print Group		22 June 2022 10:37 AM		

Step 12C - Scan & Attach Signed Submission	WF: ODG Scan Registry	24 June 2022 10:37 AM	
Step 12D - Print Documents for DG	WF: ODG Print Group	22 June 2022 10:37 AM	
Step 12E - Scan & Attach Signed Submission	WF: ODG Scan Registry	24 June 2022 10:37 AM	
Step 13A - Workflow Complete	WF: D:OCS	28 June 2022 10:37 AM	
Step 13B - Central Registry	WF: Central Registry	28 June 2022 10:37 AM	

217434 Gazette on the Draft Report on Special Project on Penguin and Small Pelagic Fishery Interactions Forwarded to Legal Services

Date Initiated:	Initiator:	Current Performer:	Due Date:	Done Date	Workflow Status:
13 May 2022 04:49 PM	Millicent Makoala	Steps Completed		30 May 2022 12:03 PM	Executing

Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
Step 02A - LR&A Office Admin	Magdeline Ngobe	Forward to relevant Director	16 May 2022 04:49 PM	16 May 2022 06:43 PM	Dear Sibusiso Please find for your attention Maggie
Step 02B - Director	Nicolette Vink	Forward to CD	17 May 2022 06:43 PM	20 May 2022 10:29 AM	Reviewer's Comments Date: 05/18/2022 01:36 PM Step Name: hmuller Performer: Heinrich Muller (hmuller) Dear Nikki I have uploaded new versions of the Gazette notice, submission and newspaper advert. Regards, HS Muller 18.05.2022 Documents vetted and versions uploaded of submission, Gazette and newspaper ad Vetting memo added N Vink 20/5/2022
Step 02I - Chief Director	Koketso Manabile	Back to Line	24 May 2022 10:29 AM	30 May 2022 12:03 PM	

217434 Gazette on the Draft Report on Special Project on Penguin and Small Pelagic Fishery Interactions - Step 08 - Deputy Director-General - Review

Review Title	Reviewer	Review Date Due	Review Date Done	Instructions
217434 Gazette on the Draft Report on Special Project on Penguin and Small Pelagic Fishery Interactions - Step 08 - Deputy Director-General - Review	Millicent Makoala			'Dear Milicent, thank you for preparing both the gazettes, please can you archive / stop this one as per comments we received on

MCE217229. Thank you, Ashley N.'

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
mmakoala	Millicent Makoala				

217434 Gazette on the Draft Report on Special Project on Penguin and Small Pelagic Fishery Interactions Forwarded to Legal Services - Step 02B - Director - Review

Review Title	Reviewer	Review Date Due	Review Date Done	Instructions
217434 Gazette on the Draft Report on Special Project on Penguin and Small Pelagic Fishery Interactions Forwarded to Legal Services - Step 02B - Director - Review	Steps Completed		19 May 2022 12:46 PM	"

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
hmuller	Heinrich Muller			19 May 2022 12:46 PM	

217434 Gazette on the Draft Report on Special Project on Penguin and Small Pelagic Fishery Interactions Forwarded to Legal Services - Step 02B - Director - Review

Review Title	Reviewer	Review Date Due	Review Date Done	Instructions
217434 Gazette on the Draft Report on Special Project on Penguin and Small Pelagic Fishery Interactions Forwarded to Legal Services - Step 02B - Director - Review	Steps Completed		18 May 2022 01:36 PM	"

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
hmuller	Heinrich Muller			18 May 2022 01:36 PM	Dear Nikki I have uploaded new versions of the Gazette notice, submission and newspaper advert. Regards, HS Muller 18.05.2022

1141
"SFA25"

Workflow Details

MCE217229 CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS

Date Initiated:	Initiator:	Current Performer:	Due Date:	Done Date	Workflow Status:
03 May 2022 12:16 PM	Itebogeng Chiloane	Steps Completed		02 June 2022 08:57 AM	Archived

Initiator Comments:
ODG The O&C Branch to draft a letter. Ministry 2022/05/03

Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
Select Action on Incoming Correspondence	Sakhile Shongwe	Action Selected	04 May 2022 12:16 PM	03 May 2022 01:06 PM	Kindly note the content of the correspondence and prepare a formal response for Minister's Consideration. Due On or before 23/05/2022. ODG: Sakhile
Referral	Moses Ramakulukusha	Assignment Completed	04 May 2022 01:06 PM	13 May 2022 05:09 PM	
Reroute	Koketso Manabile	Back to Branch	17 May 2022 11:00 AM	16 May 2022 05:35 PM	
Step 01 - DDG (O&C)	Ashley Naidoo	Recommended	17 May 2022 05:35 PM	19 May 2022 01:06 PM	
Step 02 - Language Practitioners	Tshifhiwa Netshiukhwi	Forward to DG	20 May 2022 01:06 PM	20 May 2022 10:29 AM	DG, for your recommendation. Tshifhiwa
Step 03 - Director General	Nomfundo Tshabalala	Recommended	23 May 2022 10:29 AM	25 May 2022 04:16 PM	ADDG to please provide rationale for the decision/request Reviewer's Comments Date: 05/23/2022 02:36 PM Step Name: anaidoo Performer: Ashley Naidoo (anaidoo) Dear DG, this a submission and response letter to the CEO of Birdlife - SA - Mr Mark Anderson, as representative of the Conservation Sector NGOs. Birdlife and other conservation groups contributed significantly to the discussions on the

					limiting of fishing around penguin colonies. The response letter thanks the Conservation Sector for the work and informs the CEO that the Consultative Advisory Forum for Marine Living Resources (CAFMLR) recommendations and African Penguin Management Plan will be published for comment. Thank you - Ashley N. ---------- Recommended. 25/05/2022
Step 04 - Print Documents for DG	Sabastian Adams	Documents Printed	26 May 2022 04:16 PM	26 May 2022 09:53 AM	
Step 05 - Scan & Attach Signed Submission	Sakhile Shongwe	Scanned docs attached	27 May 2022 09:53 AM	31 May 2022 12:40 PM	Ministerial Comment has been loaded. ODG: Sakhile
Step 06 - Workflow Completed	Sakhile Shongwe	Completion Acknowledged	01 June 2022 12:40 PM	02 June 2022 08:57 AM	Response / Evidence has been loaded on 29/05/2022. ODG: Sakhile

MCE217229 CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS - Step 01 - DDG (O&C) - Review

Review Title	Reviewer	Review Date Due	Review Date Done	Instructions
MCE217229 CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS - Step 01 - DDG (O&C) - Review	Steps Completed		18 May 2022 10:43 AM	'Hi Nosiseko, please correct spelling of BRIEF in opening line, then can you confirm with Moses that this is the response version that he processed - no history in the comments. Thank you, Ashley N'

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
nmhlahlo	Nosiseko Mhlahlo			18 May 2022 10:43 AM	

MCE217229 CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS - Step 03 - Director General - Review

Review Title	Reviewer	Review Date Due	Review Date Done	Instructions
MCE217229 CONSULTATIVE ADVISORY FORUM ON	Steps Completed		23 May 2022 02:36 PM	'ADDG to please provide rationale for the decision/request'

A01

MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS - Step 03 - Director General - Review

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
anaidoo	Ashley Naidoo			23 May 2022 02:36 PM	Dear DG, this a submission and response letter to the CEO of Birdlife - SA - Mr Mark Anderson, as representative of the Conservation Sector NGOs. Birdlife and other conservation groups contributed significantly to the discussions on the limiting of fishing around penguin colonies. The response letter thanks the Conservation Sector for the work and informs the CEO that the Consultative Advisory Forum for Marine Living Resources (CAFMLR) recommendations and African Penguin Management Plan will be published for comment. Thank you - Ashley N.

MCE217229 CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS Submission Workflow

Date Initiated:	Initiator:	Current Performer:	Due Date:	Done Date
13 May 2022 05:09 PM	Itebogeng Chiloane	Steps Completed	27 May 2022 11:00 AM	16 May 2022 11:00 AM

⊟ Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
Step 02 - Select Managers	Moses Ramakulukusha	Forward Submission	16 May 2022 05:09 PM	13 May 2022 05:11 PM	
Step 03 - Chief Director	Lisolomzi Fikizolo	Recommended	16 May 2022 05:11 PM	16 May 2022 09:42 AM	
Step 04 - DDG Quality Control	Nosiseko Mhlahlo	QA Completed-forward to DDG	17 May 2022 09:42 AM	16 May 2022 11:00 AM	Dear ADDG Please see attached for your attention. Thanks Nosiseko

MINISTRY
FORESTRY, FISHERIES AND THE ENVIRONMENT

INTERNAL MEMO

Date:	03 May 2022	**Ref no.**	**MCE217229**
To:	Director-General	**From:**	Ministry
		Contacts	012 399 8515
Subject	Consultative Advisory Forum On Marine Living Resources (CAFMLR) Recommendations On The African Penguin Crisis		

Dear Director-General

Please receive correspondence pertaining to the above - mentioned subject, addressed to Minister Creecy by BirdLife South Africa, Endangered Wildlife Trust, SANCCOB & WWF-SA for your attention.

The O&C Branch to draft a letter.

Kindly prepare a formal response for Minister's signature.

Best regards

MS LIESL JACOBS
ADMINISTRATION
DATE: 03/05/2022

Consultative Advisory Forum on Marine Living Resources (CAFMLR) Recommendations on the African Penguin Crisis

Dear Minister

The attached correspondence received on behalf of *BirdLife SA; Endangered Wildlife Trust; SANCCOB and WWF-SA*, **proposes a way forward on the African Penguin crisis, by recommending the appointment of an Independent Panel to review the recommendations of the CAFMLR and make a recommendation on the future of island closures,** content of which can be summarised as follows:

- In a meeting between the CEO of WWF-SA and CEO of Birdlife SA; the Chairman of the South African Pelagic Fishing Industry Association, and the Chairman of the Eastern Cape Small Pelagic Association held on 13 April 2022, it became apparent **that the Fisheries Sector and the Conservation Sector are unable to reach agreement on the way forward.**

- While food availability was agreed to as is a critical factor in the decline of the African Penguin; the Fisheries Sector disputed that the fishing activities are responsible for this. A meeting which was subsequently convened by the Conservation Sector Group (CSG), recommended as follows:

  - To implement **interim closures** to fishing around all six colonies that support more than 1000 breeding pairs as soon as possible, i.e. Dassen Island, Robben Island, Dyer Island, Stony Point, St Croix Island and Bird Island.

  - To appoint an Independent Panel to undertake **an international review of the CAFMLR recommendations** and make recommendations on the future of the island closures.

  - To frame the Terms of Reference [ToR] around the clear objective of implementing meaningful benefits for African Penguins through island closures, while minimising costs to the fishing industry.

  - To ensure that both groups, in advance, agree on the (ToR) and the scientists to undertake the review; and commit to abide by the outcome of this process.

Minister to advise	DDG: O+C

Regards

Janine
2904

Draft a letter that
① Thanks them for their letter
② Notes their proposals
③ Notes that both CAF report a Penguin Management Plan will go out for 30 days public comment -

BirdLife SOUTH AFRICA
Giving Conservation Wings

ENDANGERED WILDLIFE TRUST
Protecting forever, together.

SANCCOB
saves seabirds

WWF

27 April 2022

Minister Barbara Creecy
Minister of Forestry, Fisheries and the Environment
Private Bag X447
Pretoria
0001

Per e-mail: minister@dffe.gov.za; fshaik@dffe.gov.za

Dear Minister Creecy

CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS

We refer to our meeting with you on 28 March 2022, as well as our letter dated 5 April 2022.

Two of us, Morné du Plessis and Mark Anderson, met with Mike Copeland (Chairman, South African Pelagic Fishing Industry Association) and Redah de Maine (Chairman, Eastern Cape Small Pelagic Association) on 13 April 2022. It was a useful meeting, as it provided an opportunity to further interrogate the fisheries' perspective of the African Penguin crisis.

In essence, they agree that food availability is a critical factor in the precipitous decline of the African Penguin, but dispute that their fishing activities are responsible for any part of this.

The Conservation Sector Group (CSG) has subsequently convened a meeting and proposes the following:

1. As the African Penguin is in a dire position, with its population declining at between 5-10% per annum, we believe that urgent measures are needed to support this embattled species. Therefore, and as the precautionary approach forms a key principle of the Marine Living Resources Act of South Africa (MLRA; Section 2c), we

recommend that you implement interim closures to fishing around all six colonies that support more than 1000 breeding pairs, i.e. Dassen Island, Robben Island, Dyer Island, Stony Point, St Croix Island and Bird Island. These interim closures should be implemented as soon as possible and then revised or reinforced based on the recommendations of an international review by an Independent Panel (see below).

2. As the Fisheries Sector and the Conservation Sector are unable to reach agreement on the way forward, we propose that an independent international review of the CAFMLR's recommendations (and the subsidiary reports that were provided to the CAFMLR proceedings) be undertaken. The panel that undertakes the review can, after evaluating the relevant information, make a recommendation on the future of the island closures. It would be essential for both groups to reach agreement on the Terms of Reference (ToR) for this review, as well as the scientists who will undertake the review, in advance of this work taking place, and to commit (in advance) to abide by the outcome of this process. The ToR should be explicitly framed around the clear objective of implementing meaningful benefits for African Penguins through island closures, while minimising costs to the fishing industry.

As always, we stand ready to provide any further information that might assist you in taking this important matter forward.

Yours sincerely

Mr Mark D. Anderson
Chief Executive Officer
BirdLife South Africa

Mrs Yolan Friedmann
Chief Executive Officer
Endangered Wildlife Trust

Mrs Natalie Maskell
Chief Executive Officer
SANCCOB

Dr Morné du Plessis
Chief Executive Officer
WWF-SA

Itebogeng Chiloane

From:	Sylvester Pandelane
Sent:	Thursday, 28 April 2022 13:14
To:	ceo@birdlife.org.za
Cc:	Janine Buitendag; Liesl Jacobs; Itebogeng Chiloane; Buchule Mbuli; Feroze Shaik
Subject:	FW: CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS
Attachments:	CSG letter to Minister Barbara Creecy regarding island closures_27 April 2022.pdf

Good day

On behalf of the Minister of Forestry, Fisheries and the Environment, Ms B D Creecy, MP, I acknowledge with thanks receipt of your correspondence, in the above regard.

Regards

Liesl Jacobs
Assistant Appointment Secretary and Administration
Department of the Environment, Forestry and Fisheries
Ministry
012 399 8515
066 143 8855

From: Mark Anderson <ceo@birdlife.org.za>
Date: Wednesday, 27 April 2022 at 13:17
To: Barbara Creecy <Minister@dffe.gov.za>
Cc: Feroze Shaik <fshaik@dffe.gov.za>, Morné Plessis <mduplessis@wwf.org.za>, Natalie Maskell <Natalie@sanccob.co.za>, Yolan Friedmann <yolanf@ewt.org.za>
Subject: CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS

Dear Minister Creecy

Please see attached letter for your attention.

Regards
Mark

Mark D. Anderson
Chief Executive Officer

BirdLife SOUTH AFRICA
Giving Conservation Wings

Isdell House, 17 Hume Road (cnr Hume Road/Jan Smuts Drive), Dunkeld West 2196, Gauteng
Private Bag X16, Pinegowrie 2123, Johannesburg, Gauteng, South Africa
Tel: +27 (0)11 789 1122

1149
"SFA27"

Reference: **EDMS MCE217229**
Enquiries: **Dr Lisolomzi Fikizolo**
Telephone: **021 819 2410**
Cellphone: **084 625 1333**

MINISTER

SUBMISSION TO BRIEF MINISTER ON CORRESPONDENCE RECEIVED FROM THE CONSERVATION SECTOR GROUP (BIRDLIFE SA, ENDANGERED WILDLIFE TRUST, SANCCOB AND WWF-SA) ON THE CONSULTATIVE ADVISORY FORUM FOR MARINE LIVING RESOURCES RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS

1. PURPOSE

To request Minister to –

1.1 note the briefing on the correspondence received on the African Penguin crisis by the Conservation Sector Group on the Consultative Advisory Forum (CAF) for Marine Living Resources; and

1.2 sign the letter to the Conservation Sector Group in this regard.

2 BACKGROUND AND DISCUSSION

2.1 On 27 April 2022; the Conservation Sector Group (CSG) comprised of the Birdlife, Endangered Wildlife Trust (EWT), World Wide Fund for Nature (WWF) – SA and the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) submitted representation to the Minister, referencing the meeting of 28 March 2022. The CSG also reported on the further engagements of 13 April 2022 held with the Chairmen of the South Africa Pelagic Association and of the Eastern Cape Small Pelagic Association. In its submission, the CSG raised concerns of the

fisheries sector, disputing fisheries activities as responsible for the lack of food availability, which is a critical factor in the precipitous decline of the African Penguin. Upon realising this "*fisheries' perspectives*"; the CSG engaged and collectively submitted a request for the Minister to consider implementing, as soon as possible, the interim closure to fishing around all six major African penguin colonies, particularly as these colonies are known to support more than 1000 breeding pairs.

2.2 Extensive work has been undertaken by the colleagues from the Branch: Fisheries Management, Branch: Oceans and Coast and the Consultative Advisory Forum (CAF) for Marine Living Resources. In its effort to encourage transparency, the engagements held by the Consultative Advisory Forum (CAF) for Marine Living Resources included academia, non-government organisations (NGOs) (all of which are part of the CSG) and the fisheries representatives. More so, the inputs and recommendations provided in the meetings held by the CAF were negotiated with all parties and have guided the development of the draft report on the Special Project: Penguin and Small Pelagic Fishery Interactions by the Consultative Advisory Forum (CAF) for Marine Living Resources as well as the CAFMLR supported African Penguin Biodiversity Management Plan.

2.3 The Department commends the work of the CAF and its partners in dedicating their time and effort to review the African Penguin BMP and provide recommendations and guidance in an effort to strengthen the document, particularly as it is acknowledged that the implementation experienced challenges with the initial plan published in 2013. The process undertaken by the CAF was an extensive process that took place over twelve (12) meetings with involvement of Government, NGOs, academia, the fisheries and conservation sectors. The Department further acknowledge that the CAF had a difficult objective to satisfy, particularly that of advising the Minister on the island closures so as to inform management decisions to mitigate resource competition around African penguin colonies and to prevent further decline. The skills, competency and technology available to satisfy the objectives of the CAF is also highly appreciated.

2.4 The Department believes that the multi-stakeholder processes facilitated by the CAF encouraged transparency and that it fosters a collaborative approach and participation in the implementation of BMP's action plan. Attached for your consideration is a response letter to the Conservation Sector Group, recognising their contribution to the species recovery. The response letter further details the legal processes required to take the BMP for African penguins and the draft report on special project on penguins and small pelagic fishery interactions forward. Should the Minister consider it productive, and learning from the "*Expert Panel on Sharks to review conservation and management of species by South Africa*" and the "*High Level Panel on the conservation aspects of elephant, lion, leopard and rhinoceros*", processes are in place to establish an independent panel that will identify gaps, seek to understand and make recommendations on the CAFMLR report on penguin and small pelagic fishery interactions and on its implementation. If required, such review may also consider expanding the scope of the proposed panel to include reviewing practices, regulatory measures, reports and policy positions on aspects of conservation that are directly and indirectly related to African penguin. More so, it must be acknowledged that in its revised form, i.e. with the inclusion of the recommendations by the CAF; the reviewed draft BMP for African Penguins will improve the existing structures to implement the actions proposed while allowing for efficient monitoring for species recovery.

3 IMPLICATIONS

Personnel:	None.
Financial:	None.
Communication:	None.
Legal:	Directorate: Law Reform (Cape Town) has vetted the document.
Delegations:	None.

4 OTHER BRANCHES/ CHIEF DIRECTORATES CONSULTED

Directorate: Biodiversity and Coastal Research was consulted.

5. RECOMMENDATIONS

It is recommended that the Minister –

5.1 note the briefing on the correspondence received on the African Penguin crisis by the Conservation Sector Group on the Consultative Advisory Forum (CAF) for Marine Living Resources; and

5.2 sign the letter to the Conservation Sector Group in this regard.

RECOMMENDATION(S) SUPPORTED/NOT SUPPORTED

CHIEF DIRECTOR: LAW REFORM AND COORDINATION

DATE:

RECOMMENDED/RECOMMENDED AS AMENDED/NOT RECOMMENDED

DIRECTOR-GENERAL

DATE:

RECOMMENDATION(S):

5.1 NOTED/NOTED WITH COMMENT(S)

5.2 LETTER SIGNED/SIGNED AS AMENDED/NOT SIGNED

MS B D CREECY

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE:

1153
"SFA28"

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Tel: (012) 399 8743
Private Bag X9052, Cape Town, 8000, Tel: (021) 469 1500, Fax: (021) 465 3362

Ref: Insert EDMS number

Mr Mark D. Anderson
CEO
BirdLife-South Africa
Private Bag X16
PINEGOWRIE
2123

Email: ceo@birdlife.org.za
Cc: mduplessis@wwf.org.za
Natalie@sanccob.co.za
yolanf@ewt.org.za

Commented [NL1]: I would say "copy to" and put in the full addresses.

Dear Mr Anderson et al.

CAFMLR RECOMMENDATION ON THE AFRICAN PENGUIN CRISIS

I refer to your letter of 27 April 2022.

The Department of Forestry, Fisheries and the Environment (DEFFE) wishes to extend gratitude for the expertise that you have provided in the implementation of the current Biodiversity Management Plan for the African Penguin (African Penguin BMP) ~~as well as~~and to the Consultative Advisory Forum for Marine Living Resources (CAFMLR) in respect of the Special Project Report on: Penguin and small pelagic fishery interactions (the Report). I recognisze the extensive hours and engagements that have taken place between the small pelagic fishing industry and yourselves as the conservation sector in ~~reaching~~ an attempt to reacha consensus on how best to mitigate resource competition around African penguin colonies.

~~The Department~~DFFE will consider your request to appoint an independent international panel to review the Report ~~implement the CAFMLR recommendation~~and, as an interim measure and pending the proposed review, to implement the proposed closures around the six African penguin colonies.

It should, ~~with immediate effect. H~~however, be noted that I intend imminently to publish the Report and the amended African Penguin BMP ~~Special Report on the Penguin and Small Pelagic Fishery Interactions and to re-gazette, the draft African Penguin BMP~~ in the *Government Gazette* for a 30 day

Commented [NL2]: Is this the CAFMLR recommendation?

Why is the BMP being re-gazetted? Has it changed?

I need a bit more background in order to vet this response.

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~~for~~ public comment periods~~.~~ This process ~~and~~ will need to be finalised prior to implementing ~~the~~ any closures, even as an interim measure.

I hope that you will find this satisfactory and look forward to further engagement in due course.

~~your request to implement the recommendation immediately may affect the consistent implementation of the recommendations should these be further amended. Furthermore, the Department will also ensure the development of the Terms of Reference for the review of the CAFMLR recommendation as well as the scientist that will undertake this work. Also, as suggested it is envisaged that these TORs will be developed by the small pelagic fishing and the conservation sectors, through the existing CAFMLR platform.~~

Commented [NL3]: Will there definitely be an independent review of the recommendations?

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE:

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Tel: (012) 399 8743
Private Bag X9052, Cape Town, 8000, Tel: (021) 469 1500, Fax: (021) 465 3362

Ref: Insert EDMS number

Mr Mark D. Anderson
CEO
BirdLife-South Africa
Private Bag X16
PINEGOWRIE
2123

Email: ceo@birdlife.org.za
Cc: mduplessis@wwf.org.za
Natalie@sanccob.co.za
yolanf@ewt.org.za

Dear Mr Anderson et al.

CAFMLR RECOMMENDATION ON THE AFRICAN PENGUIN CRISIS

I refer to your letter of 27 April 2022.

The Department of Forestry, Fisheries and the Environment (DEFF) wishes to extend gratitude for the expertise you provide in the implementation of the Biodiversity Management Plan for the African Penguin as well as to the Consultative Advisory Forum for Marine Living Resources (CAFMLR) Special Project: Penguin and small pelagic fishery interactions. I recognize the extensive hours and engagements that have taken place between the small pelagic fishing industry and yourselves as the conservation sector in reaching a consensus to mitigate resource competition around African penguin colonies.

The Department will consider your request to implement the CAFMLR recommendation with immediate effect. However, I intend to publish the Special Report on the Penguin and Small Pelagic Fishery Interactions and to re-gazette, the draft African Penguin BMP for public comments and your request to implement the recommendation immediately may affect the consistent implementation of the recommendations should these be further amended. Furthermore, the Department will also ensure the development of the Terms of Reference for the review of the CAFMLR recommendation as well as the scientist that will undertake this work. Also, as suggested it is envisaged that these TORs will be developed by the small pelagic fishing and the conservation sectors, through the existing CAFMLR platform.

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE:

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Tel: (012) 399 8743
Private Bag X9052, Cape Town, 8000, Tel: (021) 469 1500, Fax: (021) 465 3362

Ref: EDMS MCE217229

Mr Mark D Anderson
CEO: BirdLife-South Africa

Email: ceo@birdlife.org.za

Dear Mr Anderson

CONSULTATIVE ADVISORY FORUM FOR MARINE LIVING RESOURCES RECOMMENDATION ON THE AFRICAN PENGUIN CRISIS

I refer to your letter of 27 April 2022.

The Department of Forestry, Fisheries and the Environment (DFFE) wishes to extend its gratitude for the expertise that you have provided in the implementation of the current Biodiversity Management Plan (BMP) for the African Penguin and to the Consultative Advisory Forum for Marine Living Resources (CAFMLR) in respect of the Special Project Report on Penguin and Small Pelagic Fishery Interactions (the report).

The DFFE recognises and appreciates the extensive hours and engagements that have taken place among various stakeholders, including yourselves, in an attempt to reach consensus on how best to mitigate resource competition around the major African penguin colonies. The DFFE will consider your request to appoint an independent panel to review the report.

As you may be aware, certain challenges were experienced in the implementation of the initial BMP for African Penguin published in 2013. Robust implementation of the revised BMP for African Penguin will be vital to the recovery of the species, and to prevent further decline, particularly because it is noted that the strength of the BMP lies in its implementation, which requires a collaborative effort by all partners – including the conservation sector and the small pelagic fishery sector.

It should be noted that I, imminently, intend to publish the report and the amended BMP on African Penguin in the *Government Gazette* for a 30-day public comment period. This process will enable the public to input into both documents so as to ensure that the final documents are well grounded and legally defensible. This process will need to be finalised prior to implementing any proposed closures, even as an interim measure.

CONSULTATIVE ADVISORY FORUM FOR MARINE LIVING RESOURCES RECOMMENDATION ON THE AFRICAN PENGUIN CRISIS

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE:

cc **Mrs Yolan Friedmann**
CEO: Endangered Wildlife Trust
Email: yolanf@ewt.org.za

Dr Morne du Plessis
CEO: World Wide Fund for Nature - SA
Email: mduplessis@wwf.org.za

Mrs Natalie Maskell
CEO: The Southern African Foundation for the Conservation of Coastal Birds
Email: Natalie@sanccob.co.za

1159
"SFA31"

Workflow Details

OMCE217229 CONSULTATIVE ADVISORY FORUM ON MARINE LIVING RESOURCES (CAFMLR) RECOMMENDATIONS ON THE AFRICAN PENGUIN CRISIS

Date Initiated:	Initiator:	Current Performer:	Due Date:	Done Date	Workflow Status:
03 May 2022 12:16 PM	Itebogeng Chiloane	WF: ODG Print Group	30 May 2022 04:16 PM		Executing

Initiator Comments:
ODG The O&C Branch to draft a letter, Ministry 2022/05/03

Step Details...

Step Name	Performer	Task Disposition	Due Date	Done Date	Comments
Select Action on Incoming Correspondence	Sakhile Shongwe	Action Selected	04 May 2022 12:16 PM	03 May 2022 01:06 PM	Kindly note the content of the correspondence and prepare a formal response for Minister's Consideration. Due On or before 23/05/2022. ODG: Sakhile
Referral	Moses Ramakulukusha	Assignment Completed	04 May 2022 01:06 PM	13 May 2022 05:09 PM	
Reroute	Koketso Manabile	Back to Branch	17 May 2022 11:00 AM	16 May 2022 05:35 PM	
Step 01 - DDG (O&C)	Ashley Naidoo	Recommended	17 May 2022 05:35 PM	19 May 2022 01:06 PM	
Step 02 - Language Practitioners	Tshifhiwa Netshiukhwi	Forward to DG	20 May 2022 01:06 PM	20 May 2022 10:29 AM	DG, for your recommendation Tshifhiwa
Step 03 - Director General	Nomfundo Tshabalala	Recommended	23 May 2022 10:29 AM	25 May 2022 04:16 PM	ADDG to please provide rationale for the decision/request Reviewer's Comments Date: 05/23/2022 02:36 PM Step Name: anaidoo Performer: Ashley Naidoo (anaidoo) Dear DG, this a submission and response letter to the CEO of Birdlife - SA - Mr Mark Anderson, as representative of the Conservation Sector NGOs. Birdlife and other conservation groups contributed significantly to the discussions on the limiting of fishing around penguin colonies. The response letter thanks the

At this stage negotiations are taking place between the Fisheries, & Small Pelagic sector & the conservation sector. I do not want to disturb these negotiations so its not opportune to publish CAF report.

However you can submit the revised PBM Plan for my approval & for gazetting since this plan was revised my CAF I have not seen it

forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Reference: **EDMS 227807**
Enquiries: **Dr A Naidoo**
Cell phone: **082 784 7131**

MINISTER

APPOINTMENT OF A MARINE ENVIRONMENTAL ECONOMIST AS AN ADDITIONAL PANEL MEMBER TO THE EXPERT REVIEW PANEL ON FISHERIES AND PENGUIN INTERACTIONS

1. PURPOSE

To request Minister to –

1.1 appoint a marine environmental economist as an additional member to the Expert Review Panel on Fisheries and Penguin Interactions; and

1.2 sign the attached letter of invitation for appointment to Prof Jim Sanchirico.

2. BACKGROUND AND DISCUSSION

2.1 Minister approved the recommendation to appoint the Expert Review Panel on Fisheries and Penguin Interaction on 7 December 2022. The Panel consists of Prof Robert Furness (UK); Dr Ana Parma (Argentina); Dr Éva Plagányi (Australia); Prof André Punt (USA) and Prof Phillip Trathan (UK). The Panel has met and has initiated their work. Prof Andre Punt was nominated and accepted Minister's nomination as Chair of the Panel.

2.2 The Minister met the Panel at an introductory meeting held on the 31st of January 2022. At this meeting, the Panel raised that the composition of the Panel does not include an economics expert. The Chair emphasised that economics science inputs will be required, especially on costs that the fishing industry may incur due to searching for and catching fish away from penguin colonies. The industry and the Department scientists have previously developed some assessment methodologies to calculate these potential costs. Worth noting is that the fishing limitation adjacent to penguin colonies does not seek to lower the Total Annual Allowable Catch but rather to move fishing away from the penguins. Thus, the

costs will relate to any additional fuel and time as well as the impacts on landing and processing the catch at the factories. There is also some argument that fish not caught adjacent to colonies may not be available to the fishing fleet. All of these debates and assessments need to be reviewed by the natural resource economist.

2.3 This submission therefore motivates for a marine resource economics expert to be appointed as an additional special Panel member to review the economic issues specifically. The Panel will consist of the Chair plus 5 members. This addition will not impact any voting aspects, as the Panels Terms of Reference does not allow for any voting, and describes that consensus is preferred, where this is not possible all views must be summarised in the Panel Report.

2.4 In interactions with the Fishery and Conservation sector representatives over the last month, both sectors have informed the Panel Chair that they will be undertaking aspects of economics research to specifically look at the costs that the industry may incur. If available, before the Panel's scheduled meetings in March and June, these will also be reviewed.

2.5 The Panel, after their initial meeting, determined some key review areas for an economics expert. This is needed to review existing and new economic research and data collection proposed by both sectors. The Panel recommended the following areas that can be assessed by an economics expert:

- Comment on the methodology used to quantify lost fishing opportunities and job losses when an area around an island is closed to pelagic fishing and how it relates to similar analyses elsewhere.
- Comment on how the various models could be validated.
- Comment on how the data used to parameterize the model were collected and whether it is consistent with best practice.
- Outline the types of data that should be collected to validate model predictions as well as the associated data collection methods that could be applied.

2.6 The Panel from their collective experience further identified and proposed various economists:

NAME & SURNAME	INSTITUTION	EMAIL ADDRESS
Jim Sanchirico (Prof)	University of California, Davis Campus, USA	jsanchirico@ucdavis.edu
Robert Costanza (Prof)	The Australian National University, Australia	Rober.Costanza@anu.edu.au
Dan Holland (Dr)	National Oceanic and Atmospheric Administration, USA	Dan.Holland@nooa.gov

NAME & SURNAME	INSTITUTION	EMAIL ADDRESS
Sean Pascoe (Dr)	Commonwealth Scientific and Industrial Research Organisation, Australian Government – CSIRO, Australia	Sean.Pascoe@csiro.au
John Lynham (Prof)	University of Hawaii	lynham@hawaii.edu
Martin Smith (Prof)	Duke University, USA	martin.smith@duke.edu
Cameron Speir (Dr)	National Oceanic and Atmospheric Administration, USA	Cameron.Speir@noaa.gov
Matt Reimer (Assoc. Prof)	University of California, Davis Campus, USA	mnreimer@ucdavis.edu.

2.7 All the identified economists are international, and after consultation with the Chair, it is recommended that Prof Sanchirico is approached first to check his availability followed by the other experts in the order that they are listed above. James Sanchirico has specific expertise in economic evaluation of marine ecosystems and the economics associated with marine fisheries and holds a Professorship in the Department of Environmental Science and Policy at University of California, USA. He has more than 100 formal publications with recent publications and projects on marine resource economics and ecosystem evaluation and assessing benefits from ecosystem based fisheries management. Prof Sanchirico is a current elected member of the North American Association of Fishery Economists. The *CV* of Prof Sanchirico is attached as **Annexure 2.**

2.8 A draft letter of invitation to Prof Sanchirico is attached an **Annexure 1**.

3. IMPLICATIONS

Personnel:	None.
Financial:	The Additional Panel Member will be remunerated as the other Panel Members, at the B1 National Treasury approved rate, and the DFFE will cover all travel expenses for the planned June meeting as approved on EDMS 225823.
Communication:	None.
Legal:	None.
Organisational Development:	None.
Policy:	None.
Delegations:	None.

4. OTHER BRANCHES/ CHIEF DIRECTORATES CONSULTED

The staff of the Chief Financial Officer was consulted regarding the payment rates and the Branch: Fisheries Management was also consulted regarding the Panel objectives and operations.

5. RECOMMENDATION(S):

It is recommended that Minister –

5.1 appoint a marine environmental economist expert as an additional member to the Expert Review Panel on Fisheries and Penguin Interactions.

5.2 sign of the attached letter of invitation and appointment to Prof Sanchirico.

FUNDS AVAILABLE/NOT AVAILABLE

CHIEF FINANCIAL OFFICER

DATE:

RECOMMENDED/RECOMMENDED AS AMENDED/NOT RECOMMENDED

DIRECTOR-GENERAL

DATE:

RECOMMENDATION(S):

5.1 APPROVED/APPROVED AS AMENDED/NOT APPROVED

5.2 LETTER SIGNED/SIGNED AS AMENDED/NOT SIGNED

MS B D CREECY

MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT

DATE: