26 November 2024

TO:	**Portfolio Committee on Transport, National Assembly** c/o Ms Valerie Carelse (Committee Secretary)	vcarelse@parliament.gov.za sselamolela@parliament.gov.za
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FROM:	**BIODIVERSITY LAW CENTRE**	kate@biodiversitylaw.org nina@biodiversitylaw.org
Total pages:	9 [98 including annexures]	Our ref: BLC/Penguins1/012

Dear Honourable Members

RE: LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF INTENDED RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER AND GAPS IN THE MARITIME REGULATORY FRAMEWORK

INTRODUCTION

1. We address this correspondence on behalf of SANCCOB, BirdLife South Africa (**BLSA**) and the Biodiversity Law Centre (**the BLC**) in respect of our concerns pertaining to ship-to-ship transfer of bunker fuel and offshore bunkering operations (**STS Bunkering**) as well as legislative gaps pertaining to environmental regulation of maritime activity.

2. We have set out our interest in the matter in **Annexure A** as well our most recent correspondence to the Minister of Transport and Minister of Forestry, Fishery and the Environment (**Environment Minister**) as **Annexure B** and **Annexure C** respectively.

3. In summary, we request that the Portfolio Committee for Transport (**Portfolio Committee**):

3.1. investigate the justification, constitutionality and lawfulness of the intended recommencement of STS Bunkering, particularly given the significant environmental impacts associated with this activity; and

3.2. take all necessary steps to address key legislative gaps in the regulation of maritime development and transport (including ensuring the proper domestication of international laws).

4. In doing so, we request that the Portfolio Committee:

4.1. ensure that organs of state within its remit, including the Transport Ministry, Department of Transport (**DoT**), Transnet National Ports Authority (**TNPA**) and South African Maritime Safety Authority (**SAMSA**) adhere to all constitutional and legal requirements in relation to environmental protection of the marine environment;

4.2. ensure that the principles of accountability and transparency are upheld; and

4.3. further the principles of co-operative governance by ensuring proper regulation of STS Bunkering, maritime activities and development and the marine environment with all relevant government departments and oversight committees.

5. In respect of 4.3 above, we have copied in the relevant portfolio and select committees engaged with Transport, Environmental and Fiscal matters. We have included the Finance Standing and Select Committees because of clear legislative gaps pertaining to the tax regime applicable to STS Bunkering operations, highlighted by the limited public data available relating to investigations underway by the South African Revenue Service (**SARS**).

6. **As set out below, it is essential for any investigation into STS Bunkering to consider whether this activity is justified by clear evidence of economic benefit to the fiscus and regional economies, noting both its environmental impacts, and potential harms to other developing local and regional economic activities**.

7. We would welcome the opportunity to engage on the issues addressed in this correspondence both as they pertain to the immediate issue of STS Bunkering and in relation to the Transport clusters' role in protection of the marine environment.

BACKGROUND

Commencement of STS Bunkering and Legal Background

8. STS Bunkering commenced in two Algoa Bay anchorages[1] in 2016. Ultimately, three operators were licenced. Operations continued until during or about September 2023 when, as we understand the situation, the South African Revenue Service (**SARS**) detained various vessels pursuant to an investigation apparently related to customs and excise and loss to the fiscus.[2] Further details are not publicly available.

9. STS Bunkering operators have conducted their activities pursuant to licences granted by TNPA and permission granted by SAMSA.

9.1. SAMSA purports to be authorised to permit STS bunkering in terms of section 21 of the Marine Pollution (Control and Civil Liability) Act, 6 of 1981 (**Control and Civil Liability Act**) read with Marine Notice No. 3 of 2016.

9.2. TNPA ostensibly grants licences pursuant to section 80(2) of the National Ports Act, 12 of 2005 (**Ports Act**) Act read with Rule 148 of the National Ports Rules.[3]

10. The Control and Civil Liability Act is part of the suite of legislation giving effect to South Africa's International Maritime Organisation (**IMO**) obligations including regulation of marine pollution and safety at sea.[4] This legislation falls within the scope of the Transport cluster – as does the Ports Act and the South African Maritime Safety Authority Act, 5 of 1998 which establishes SAMSA.

11. All conduct and decision-making affecting the environment made in terms of this legislation must be consonant with the Constitution (including section 24 addressing everyone's rights to an environment which is not harmful to health and wellbeing and to have the environment protected for the benefit of present and future generations). Moreover, it must adhere to South Africa's international obligations to protect marine biodiversity under the United Nationals Convention on the Law of the Sea (**UNCLOS**) and climate obligations under the United Nations Framework Convention on Climate Change (**UNFCCC**) (read with the Climate Change Act, 22 of 2024).

Environmental impacts and a moratorium on new operator licences

12. To date, STS Bunkering has resulted in four oil spills in Algoa Bay. Due to environmental concerns, a moratorium on the issuing of new STS Bunkering operator licences was

[1] Anchorage 1 is located within the jurisdiction of the Port of Port Elizabeth. Anchorage 2 is located within the jurisdiction of the Port of Ngqura.
[2] See the statements made at paragraph 15 of *Heron Mauritius Limited and Another v Commissioner for the South African Revenue Services* (3929/2023) [2024] ZAECQBHC 19 (27 February 2024), available online < https://www.saflii.org/cgi-bin/disp.pl?file=za/cases/ZAECQBHC/2024/19.html&query=algoa%20bay>, last accessed 21 November 2024.
[3] GN 255 in *GG* 31986 of 6 March 2009.
[4] Also of immediate relevance are the Marine Pollution (Prevention of Pollution from Ships) Act, 2 of 1986 and Merchant Shipping Act, 57 of 1951 as well as the various "Marine Pollution" Acts addressing redress measures relevant to maritime pollution, safety and related accidents.

imposed in April 2019 by the Offshore Operators Stakeholders Forum (**OOSF**)[5] which is convened under the auspices of SAMSA.

13. Moreover, an academic study published in 2022[6] noted that declines in African Penguin populations (particularly on St Croix Island) were correlated with the advent of STS Bunkering activities and the related increased noise levels in the marine environment. We have enclosed the relevant study as **Annexure D**. An 85% decline in the population of African Penguins on St Croix island has been recorded since STS Bunkering commenced.

14. These pollution risks are familiar to the Minister of Transport, TNPA, SAMSA, Environment Minister and DFFE, having been raised through various letters addressed to both Ministries; comments submitted to SAMSA in relation to draft STS Bunkering codes of practice in 2022 and 2024; and in submissions provided to TNPA during the course of their (retrospective) environmental risk assessment of STS Bunkering conducted during the course of 2023 (the **TNPA ERA**) as well as in relation to the Port of Ngqura's Strategic Environmental Assessment (**SEA**) questionnaire and draft scoping report in 2023/2024.

15. Our concerns have also been raised in representations by SANCCOB and others to the Portfolio Committee of the Sixth Parliament and its NCOP counterpart in relation to the Marine Pollution (Preparedness, Response and Cooperation) Bill [B10-2022] currently revived and under consideration by the Select Select Committee on Public Infrastructure & Minister in the Presidency, NCOP.

Conditions for lifting the moratorium

16. According to SAMSA Notice MIN 10-22 dated 6 September 2022, the lifting of the moratorium was contingent on (a) completion of an ERA; and (b) completion of new Codes of Practice for bunkering (**Codes**). These requirements for lifting the moratorium have not been met.

17. TNPA initiated its ERA by way of a tender issued on 15 July 2022.

17.1. Stakeholder engagements were held during the course of 2023 and a draft ERA and Environmental Management Plan were published for comment in November 2023. The comment period (including extensions granted to certain interested and affected parties) closed on 31 January 2024. SANCCOB, BLSA and the BLC all participated in this process.

17.2. The final TNPA ERA has not been formally published, nor circulated to interested and affected parties. However, a copy of the final TNPA ERA report has recently been obtained by members of the Offshore Environmental Working Group (**OEWG**) pursuant to a member's request submitted to SAMSA in terms of the Promotion of Access to Information Act, 2 of 2000 (**PAIA**). The TNPA ERA's findings raise important concerns which we highlight below.

18. Two sets of draft codes have been published by SAMSA to date – neither of them finalised:

[5] Correspondence from TNPA to the BLC dated 25 October 2023.

[6] Pichegru et al (2022) "Maritime Traffic Trends around the Southern Tip of Africa – Did Marine Noise Pollution Contribute to the Local Penguins' Collapse?" *Science of the Total Environment*, 849, 157878, available online <http://dx.doi.org/10.1016/j.scitotenv.2022.157878>, accessed 7 August 2024.

18.1. On 6 September 2022, separate bunkering and ship-to-ship transfer codes of practice were published together with MIN 10-22. Final versions were not published.

18.2. On 19 February 2024, a further draft bunkering code was issued by SAMSA for comment (with no ship-to-ship transfer code published). This draft removed all reference to environmental assessment, risks and protections – despite these falling within SAMSA's remit. We highlighted this in our comments dated 8 March 2024.

18.3. We have received no confirmation of finalisation of this 2024 draft and no finalised bunkering code has been published on the SAMSA website. This requirement for uplifting the moratorium has, accordingly, not been met.

CONCERNING FINDINGS OF THE TNPA ERA

Findings of material environmental risk

19. The final TNPA ERA (based on 11 separate studies) concluded that STS Bunkering increased risk to the marine environment including a high risk posed to seabirds and in respect of noise impacts without mitigation. Our concerns are that mitigation assessment rests on assumptions that do not reflect the current state of regulatory control.

20. Critically:

20.1. The Traffic Noise Technical Study confirmed that STS Bunkering has led to an increase in vessel traffic (which, in turn, increases ambient marine noise in Algoa Bay).[7] There is currently no regulation in place to ensure that ambient noise levels remain within ecologically sustainable limits.

20.2. The Underwater Noise Assessment found that noise generated by transiting vessels and STS Bunkering would likely have negative impacts on seabird and marine mammal behaviour (with potential for at least temporary physical impacts).[8]

20.3. ERA recommendations included:

20.3.1. speed reduction measures for vessels entering and leaving Algoa Bay to reduce underwater noise;[9]

20.3.2. discontinuing STS Bunkering at Anchorage 2 due to the impact on the St Croix Island African Penguin colony;[10]

20.3.3. discontinuing ship-to-ship transfer while both vessels are moving due to safety concerns (and ensure adherence to the highest safety standards based on best international practice and including auditing of operators);[11] and

20.3.4. adopting an Underwater Noise Mitigation and Management Plan.[12]

[7] 39% of the vessel traffic in Algoa Bay between January 2022 and February 2023 was exclusively due to calling at a bunkering facility (with a further 8% of vessel traffic both involved in STS Bunkering and calling at port). This is a significant increase vessel traffic. See TNPA ERA, Traffic Noise Study Technical Note p 5.
[8] TNPA ERA, Underwater Noise Assessment pp 39; 40.
[9] TNPA ERA, Executive Summary p II.
[10] TNPA ERA Executive Summary p II; TNPA ERA, Underwater Noise Assessment pp v; 40.
[11] TNPA ERA, Executive Summary p II.
[12] TNPA ERA, Underwater Noise Assessment pp v; 40.

21. We are not aware of development or consultation regarding an Underwater Noise Mitigation and Management Plan.

22. Of particular concern is the assumption in the ERA's discussion of risk mitigation that South Africa has the framework to enable best international practice. This is not the case.

22.1. The SAMSA Codes have not been finalised while the ERA found that the 2022 and 2024 drafts lacked important operational detail.

22.2. South Africa has not fully domesticated all applicable marine pollution conventions (We draw particular attention to the Marine Pollution (Prevention of Pollution from Ships) Amendment Bill [B5-2022] currently before the President for signature; Marine Oil Pollution (Preparedness, Response and Cooperation) Bill [B10-2022] currently before the NCOP and the Ballast Convention[13]).

22.3. South Africa has not formally adopted the relevant international guidelines regarding noise pollution into domestic law.[14]

23. We seek your intervention to ensure that this framework is put in place – not only for purposes of STS Bunkering regulation, but to ensure that all maritime activity is regulated according to best practice, South Africa's international obligations, and the constitutional obligation to protect the environment by, *inter alia,* securing ecologically sustainable development and use of marine resources.

THE NEED FOR INVESTIGATION

Investigating Environmental oversight

24. We commend TNPA for recognising its environmental obligations by commissioning the ERA – and its consultants for following a process that largely mirrored that of an Environmental Impact Assessment (**EIA**). However, this was not an EIA, and STS Bunkering is not a listed activity as contemplated by the National Environmental Management Act, 107 of 1998 (**NEMA**).

25. We (and others) have drawn this shortcoming to the attention of the DFFE and Environment Minister and called for STS Bunkering to be listed. If anything, the findings of the ERA support the need for this regulatory step.[15] Moreover, it is essential for purposes of co-operative governance that oversight over maritime activities and marine and coastal developments is exercised by those with the necessary expertise. It is thus critical that the DFFE is empowered to support the Transport cluster in its regulation of maritime pollution and safety, and its protection of the coastal and marine environment.

26. In this regard we encourage the Committee to engage with its environmental counterparts to investigate why this has not been actioned (and to assist with this engagement we have copied in the relevant Portfolio and Select Committees). We further draw attention to the

[13] International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004. A draft Ballast Water Management Bill was first gazetted on 3 April 2013 (GG 36330). To date, it has not been finalised.
[14] *Revised Guidelines for the Reduction of Underwater Radiated Noise from Shipping to Address Adverse Impacts on Marine Life* (MEPC.1/Circ.906) of 22 August 2023.
[15] We also draw attention to the scheme of the Marine Pollution (Prevention of Pollution from Ships) Amendment Bill [B5-2022] which integrates oil risk assessments and contingency planning into EIA processes – and, according to DoT responses to previous parliamentary submissions is drafted to include STS Bunkering operations within its scope.

exchange of correspondence between ourselves and the Environment Minister under the sixth administration which form attachments to both **Annexures B and C**.

Investigating the economic justification for STS Bunkering

27. We draw the Portfolio Committee's attention to the constitutional requirement that legislation and other measures to protect the environment must, *inter alia*, secure the ecologically sustainable use and development of natural resources while also promoting justified social and economic development. No economic development may be supported without proper justification based on sound data. The TNPA ERA raises significant concerns that any economic stimulus lent to the regional economy of the Eastern Cape by STS Bunkering may be undermined by the destruction of other economic sectors, in addition to proving unstainable in terms of the ecological carrying capacity and sensitivities the ERA highlights.

28. The TNPA ERA found that the primary STS Bunkering value chain lay outside South Africa's borders (from the Bunkering operators themselves being foreign entities, to the source of fuel being foreign).[16] Moreover, it found that potential value to the fiscus had not been realised (as reflected in the SARS dispute).[17] Significant questions regarding benefit to the national economy have thus been raised.

29. We note that on 22 November 2024, amendments to the rules under sections 21(1), 60 and 64DA of the Customs and Excise Act were gazetted.[18] However, it remains unclear whether this intervention resolves the constitutionality of the decision to recommence STS Bunkering (set out below). Similarly, whether this intervention will entirely remedy the difficulty with economic justification for this activity is unclear. This is because the TNPA ERA has raised significant questions regarding the knock-on effects of developing economic activity linked to STS Bunkering on other critical regional economic activities.

29.1. While the TNPA ERA found that there was evidence of regional economic stimulus linked to secondary industries (i.e. chandlery services and logistics linked to crew changes),[19] the study also cautioned that figures pertaining to stimulus of chandlery services should be treated with caution, indicating only a 60% accuracy of financial estimates.[20] Moreover, it identified that STS Bunkering may harm tourism, fisheries and aquaculture industries (which it was tasked with examining) unless "stringent" rules and regulations were in place to address environmental harms.[21]

29.2. In sum, it found that negative socio-economic impacts associated with STS Bunkering (including pollution, oil spill cleanup costs, impacts on fishing, aquaculture, water-based tourism)[22] may outweigh economic stimulus.[23]

30. We note the critical importance of ensuring that any economic stimulus passes constitutional muster. This means that government initiatives to develop any new industry must be economically justified but also ensure that the right to have the environment

[16] TNPA ERA, Socio-Economic Assessment Study pp 24; 53; 54.
[17] TNPA ERA, Socio-Economic Assessment Study p 31.
[18] GNR5562 in GG51627 on 22 November 2024 (effective 30 November 2024).
[19] TNPA ERA, Socio-Economic Assessment Study pp 31-32
[20] TNPA ERA, Socio-Economic Assessment Study pp 30; 59.
[21] TNPA ERA, Socio-Economic Assessment Study pp 43-44; 46-47; 49-50; 61-65. See also the extent of mitigation measures and assumptions at pp 48-49 of the Oil Spill Modelling Specialist Study.
[22] TNPA ERA, Socio-Economic Assessment Study p 43.
[23] See TNPA ERA, Socio-Economic Assessment Study pp 61-65 compared to pp 65-67.

protected is respected, protected, promoted and fulfilled. For this reason, an investigation remains warranted – and should consider government efforts to promote other regional industries as well as scope for social and economic development generated by initiatives such as crime prevention in the Nelson Mandela Bay Municipality, public works and potential for eco-tourism development in respect of Algoa Bay and links with the Addo Elephant Park and MPA.

31. We note also that South Africa's Natural Capital Accounting system should be considered in relation to the risk of environmental harms from this activity as part of a comprehensive consideration of whether the development of an STS Bunkering industry is constitutionally justified. Similarly, the impacts of development on South Africa's climate obligations and emissions should be part of such consideration – noting that central to a "just transition" is the development of economic activity that is compatible with low emissions as well as protection and preservation of biodiversity which itself mitigates climate effects.

Investigating SAMSA and TNPA's Intention to recommence STS Bunkering

32. Despite requests for clarification that we have sent to both TNPA and its environmental consultants, there has been no formal notification of next steps. It is of particular concern that there has been no indication of publication or updating of standard operating procedures by TNPA, finalisation of SAMSA's codes, nor publication of an Underwater Noise Mitigation and Management Plan. Similarly, there has been no engagement with the OOWG and OEWG as contemplated in their terms of reference.

33. However, it appears that SAMSA and TNPA have recommenced processing STS Bunkering licences as confirmed at a stakeholder consultation convened by SAMSA on 30 April 2024 and in various media statements.

34. According to an explanation provided at the roundtable, the lifting of the moratorium appears to have been at the instance of the erstwhile Minister of Transport. We have drawn this to the attention of the current Minister as a potential irregularity requiring clarification and remedy as a matter of urgency. We similarly draw this to your attention as an irregularity warranting investigation.

CONCLUSION

35. As set out above, we request that the Portfolio Committee investigate the constitutionality of the intended recommencement of STS Bunkering including whether it is in fact economically justified; why SAMSA and TNPA appear to have lifted the moratorium on processing new operator licences given the absence of full regulation; and whether STS Bunkering can proceed absent listing for purposes of application of the EIA Regulations and a proper regulatory framework considering both stringent environmental oversight and proper financial accountability.

36. In addition, we request that the Portfolio Committee take all necessary steps to address key legislative gaps in the regulation of maritime development and transport (including ensuring the proper domestication of international laws). In particular, we encourage the Portfolio Committee to:

36.1. support the finalisation of the legislative process pertaining to the Marine Pollution (Prevention of Pollution from Ships) Amendment Bill [B5-2022] and Marine Pollution (Preparedness, Response and Cooperation Bill) [10B-2022];

36.2. engage with the Minister of Transport to ensure that the Revised Guidelines for the Reduction of Underwater Radiated Noise from Shipping to Address Adverse Impacts on Marine Life (MEPC.1/Circ.906) of 22 August 2023 are incorporated into South African law by way of regulation under the Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986 or the Merchant Shipping Act, 57 of 1951;

36.3. ensure proactive regulation of noise pollution within marine spaces within the jurisdiction of TNPA, SAMSA and the DoT (particularly given the recommendations of the TNPA ERA but also with regard to planned port expansion); and

36.4. ensure the domestication and implementation of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.

37. We would welcome the opportunity to answer questions regarding our requests above mindful of the wider implications for South Africa's maritime industry and unique coastal and marine environment.

Yours faithfully,

BIODIVERSITY LAW CENTRE NPC

***Per* Nina Braude**

ANNEXURE A

THE INTEREST OF SANCCOB, BLSA AND THE BLC IN STS BUNKERING

1. The Biodiversity Law Centre (**BLC**) is a non-profit organization and law clinic, registered in 2021. Our vision is flourishing indigenous species and ecosystems that support sustainable livelihoods in Southern Africa while our mission is to use the law to protect, restore and preserve indigenous ecosystems and species in the region.

1.1. Since inception, the BLC has engaged the DFFE, TNPA and SAMSA regarding the impacts of STS Bunkering in Algoa Bay.

1.2. We have highlighted the fragility and stressed nature of this ecosystem[24] which under growing pressure from maritime and coastal development in the bay. We have also drawn attention to the specific impacts on the African Penguin breeding colonies in Algoa Bay – and particular St Croix Island.

2. SANCCOB is a registered non-profit organisation with the primary objective to reverse the decline of seabird populations through the rescue, rehabilitation and release of ill, injured, abandoned and oiled seabirds particularly endangered species such as the African Penguin.

2.1. SANCCOB has responded to every oil spill affecting seabirds along the South African coastline since 1968, and is the mandated organisation to respond to oiled seabirds as per the National Oil Spill Contingency Plan.

2.2. Moreover, SANCCOB is a member of both the Offshore Environmental Working Group (**OEWG**) and Offshore Operators Stakeholders Forum (**OOSF**).

2.3. In addition, SANCCOB has previously engaged with the Portfolio Committee in relation to adoption of the Marine Pollution (Prevention of Pollution from Ships) Amendment Bill [B5-2022] (since passed by the National Assembly on 7 March 2023 and National Council of Provinces on 16 May 2024, and currently before the President, awaiting assent). It has also appeared before the Transport Portfolio Committee in relation to the Marine Oil Pollution (Preparedness, Response and Cooperation) Bill [B10-2022], currently before the National Council of Provinces (**NCOP**).

3. BLSA is a registered non-profit organisation, the mission of which is to conserve birds, their habitats and biodiversity through scientifically-based programmes, through supporting the sustainable and equitable use of natural resources, and by encouraging people to enjoy and value nature.

3.1. BLSA has been engaging with the DFFE, TNPA and SAMSA in relation to STS Bunkering in Algoa Bay since at least 2021.

[24] Algoa Bay includes the Addo Elephant Marine Protected Area, declared in 2019 for purposes, *inter alia,* of linking the system of shore, estuarine, bay, island and shore ecosystems and their associated biodiversity and ecosystem processes; the Amathole (Offshore of Port Elizabeth) Ecologically and Biologically Significant Area, designated due to its unique ecological features including rare habitat types, an important benthic and pelagic area that supports ecological processes, seabird breeding and foraging areas, fish spawning and nursery areas used by endangered leatherback turtles; includes the Algoa Bay Islands and Addo Elephant National Park Important Bird Area which are key breeding areas for seabird, shorebird and terrestrial birds; and has been declared a Hope Spot by Dr Sylvia Earle in 2014 and a Whale Heritage Site in 2021.

3.2. BLSA, together with SANCCOB, is working with scientists and engineers at Nelson Mandela University, the University of Paris, and the University of Cape Town to develop technologies to monitor the impacts of marine noise pollution on coastal and seabirds, including African Penguins, in Algoa Bay. In addition, BLSA is engaged with an Automated Penguin Monitoring System to gauge the response of penguins to human activities in the bay.

Annexure B

1 October 2024

TO:	**Minister of Transport** Honourable Barbara Creecy	TransportMinistry@dot.gov.za BuitendagJ@dot.gov.za JacobsL@dot.gov.za ChiloaneI@dot.gov.za
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Total pages:	9 [41 including annexures]	Our ref: BLC/Penguins1/010

Dear Minister Creecy

RE: LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF INTENDED RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER

1. We address this correspondence on behalf of SANCCOB, BirdLife South Africa (**BLSA**) and the Biodiversity Law Centre.

2. We refer to our correspondence dated 16 May 2024, addressed to the office of the Minister of Forestry, Fisheries and Environment (**Environment Minister**) and copied, *inter alia*, to the Minister of Transport. We refer further to the response signed by yourself, in your capacity as the Environment Minister, dated 18 June 2024 (**Response**). We attach both letters for ease of reference as "**Annexure 1**" and "**Annexure 2**" respectively.

3. As you will recall in our letter, we urged you, in your capacity as Minister responsible for environmental affairs to "*immediately engage with the Minister of Transport regarding the imperatives of ensuring that STS Bunkering does not breach the State's constitutional and international obligations regarding environmental protection; the prevention of environmental degradation and pollution; and ensuring that use of the environment is consistently ecologically sustainable"*.

4. In the Response, we were advised, *inter alia*, that the Department of Forestry, Fisheries and the Environment (**DFFE**) would further engage on bunkering-related issues with the Transnet National Ports Authority (**TNPA**) and the South African Maritime Safety Authority (**SAMSA**). No mention was made of engagement with the Minister of Transport.

5. We now address you in your capacity as Minister of Transport, with responsibility for maritime transport and pollution control and as the designated executive member under the National Ports Act, 12 of 2005 (**Ports Act**), South African Maritime Safety Authority Act, 5 of 1998 (**SAMSA Act**) and the suite of legislation giving effect to the South Africa's International Maritime Organisation obligations, including the Marine Pollution (Control and Civil Liability) Act, 6 of 1981 (**Control and Civil Liability Act**), Marine Pollution (Prevention of Pollution from Ships) Act, 2 of 1986 (**Prevention of Pollution Act**) and Merchant Shipping Act, 57 of 1951 (**Merchant Shipping Act**).

6. While cognisant of your familiarity with much of the history of ship-to-ship fuel transfer and offshore bunkering (collectively, **STS Bunkering**) and the related environmental concerns, we repeat some of this background below in order to formally bring it to the attention of the office of your current Ministry. Accordingly, we have copied this correspondence to the Deputy Minister of Transport, the Honourable Mkhuleko Hlengwa, as well as Director General Advocate James Mlawua and the Deputy Director General of the Maritime Branch, Mr Mthunzi Madiya.

7. In doing so, we are mindful of the economic importance and scope of the Transport portfolio and the particular role that it plays in relation to maritime regulation and protection of the marine environment. This requires a high degree of expertise as well as inter-governmental co-operation, accountability and transparency. For this reason,

and in the interests of ensuring that all government stakeholders are aware of our engagement with your office, we have copied this correspondence to the Honourable Minister of Forestry, Fisheries and the Environment, Dr Dion George as well as the Chief Executive Officers and key representatives of SAMSA and TNPA.

8. In sum:

8.1. We request that your ministry, together with the Department of Transport, SAMSA and TNPA (collectively, **the Transport Cluster**) take all necessary steps to investigate whether STS Bunkering is in fact a justified economic activity and can withstand constitutional scrutiny in terms of its environmental impacts and the obligations imposed on the state in relation to the environmental rights expressed in section 24 of the Constitution.

8.2. We call upon the Transport Cluster to engage pro-actively with Honourable Minister George and the Department of Forestry, Fisheries and the Environment (**DFFE**) to ensure that proper environmental regulation, assessments and protections are pursued in relation to all maritime activities – including STS Bunkering and the related activities of port and maritime industry expansion.

8.3. We further call upon your Ministry and the Transport Cluster as a whole to ensure that all international maritime environmental obligations are properly domesticated, implemented and enforced.

9. Below, we provide the background of our interest in the matter as well as a brief history of STS Bunkering in Algoa Bay. Thereafter, we outline certain of the key constitutional and legal obligations informing our engagements with your office and the Transport Cluster. We conclude by setting out our requests for intervention and critical actions by your office to further the interests of all South Africans and those engaging with our marine spaces and maritime sector. These requests are made in the context of furthering the constitutional values of accountability, transparency and co-operation and fulfilling the guarantee of environmental rights to everyone, both now and in the future.

A) Background

Our interest in STS Bunkering

10. The Biodiversity Law Centre (**BLC**) is a non-profit organization and law clinic, registered in 2021. Our vision is flourishing indigenous species and ecosystems that support sustainable livelihoods in Southern Africa and our mission is to use the law to protect, restore and preserve indigenous ecosystems and species in the region. Since the year of our inception, the BLC has been engaging with the DFFE, TNPA and SAMSA in relation to the impacts of STS Bunkering in Algoa Bay with particular regard to the fragility and stressed nature of this ecosystem,[1] increasing development and maritime pressure

[1] Algoa Bay includes the Addo Elephant Marine Protected Area, declared in 2019 for purposes, *inter alia,* of linking the system of shore, estuarine, bay, island and shore ecosystems and their associated biodiversity and ecosystem processes; the Amathole (Offshore of Port Elizabeth) Ecologically and Biologically Significant Area, designated due to its unique ecological features including rare habitat types, an important benthic and pelagic area that supports ecological processes, seabird breeding and foraging areas, fish spawning and nursery areas used by

in the bay, and the specific impacts on the two key African Penguin breeding colonies at St Croix and Bird Islands.

11. SANCCOB is a registered non-profit organisation with the primary objective to reverse the decline of seabird populations through the rescue, rehabilitation and release of ill, injured, abandoned and oiled seabirds particularly endangered species such as the African Penguin. SANCCOB has responded to every oil spill affecting seabirds along the South African coastline since 1968, and is the identified and mandated organisation to respond to oiled seabirds as per the National Oil Spill Contingency Plan. Moreover, SANCCOB is a member of both the Offshore Environmental Working Group (**OEWG**) and Offshore Operators Stakeholders Forum (**OOSF**).

12. BLSA is a registered non-profit organisation, the mission of which is to conserve birds, their habitats and biodiversity through scientifically-based programmes, through supporting the sustainable and equitable use of natural resources, and by encouraging people to enjoy and value nature. BLSA has been engaging with the DFFE, TNPA and SAMSA in relation to STS Bunkering in Algoa Bay since at least 2021. BLSA, together with SANCCOB, is working with scientists and engineers at Nelson Mandela University, the University of Paris, and the University of Cape Town to develop technologies to monitor the impacts of marine noise pollution on coastal and seabirds, including African Penguins, in Algoa Bay. In addition, BLSA is engaged with an Automated Penguin Monitoring System to gauge the response of penguins to human activities in the bay.

STS Bunkering in Algoa Bay

13. As you are aware, STS Bunkering commenced in Algoa Bay in 2016. Three operators were ultimately licenced and continued to operate until during or about September 2023 when, we understand, the South African Revenue Service (**SARS**) detained various vessels pursuant to an investigation – the details of which are not publicly available.

14. To date, STS Bunkering has resulted in four oil spills in Algoa Bay. Moreover, a study published in 2022[2] noted that declines in African Penguin populations (particularly that of St Croix Island) were correlated with the advent of STS Bunkering activities and the related increased noise levels in the marine environment. These environmental impacts are familiar to the DFFE and Environment Minister, SAMSA and TNPA, having been raised through various letters addressed to the Environment Minister, comments submitted to SAMSA in relation to draft codes relating to STS Bunkering in 2022 and 2024; and in submissions provided to TNPA during the course of their (retrospective) environmental risk assessment focused on STS Bunkering which was conducted during the course of 2023 (the **TNPA ERA**) as well as in relation to the Port of Ngqura's Strategic Environmental Assessment (**SEA**) questionnaire and draft scoping report in 2023/2024.

15. STS Bunkering operators have conducted their activities pursuant to a licence granted by TNPA and permission granted by SAMSA.

endangered leatherback turtles; includes the Algoa Bay Islands and Addo Elephant National Park Important Bird Area which are key breeding areas for seabird, shorebird and terrestrial birds; and has been declared a Hope Spot by Dr Sylvia Earle in 2014 and a Whale Heritage Site in 2021.

[2] Pichegru et al (2022) "Maritime Traffic Trends around the Southern Tip of Africa – Did Marine Noise Pollution Contribute to the Local Penguins' Collapse?" *Science of the Total Environment*, 849, 157878, available online <http://dx.doi.org/10.1016/j.scitotenv.2022.157878>, accessed 7 August 2024.

15.1. SAMSA purports to be authorised to permit STS bunkering in terms of section 21 of the Control and Civil Liability Act read with Marine Notice No. 3 of 2016.

15.2. TNPA ostensibly grants permits pursuant to section 80(2) of the Ports Act read with Rule 148 of the National Ports Rules.[3]

16. We have been advised by TNPA and SAMSA that new operator licences were not granted subsequent to the imposition of a moratorium imposed by the OOSF on 9 April 2019.[4] The moratorium appears to have been imposed specifically due to environmental concerns. This was conveyed in SAMSA Notice MIN 10-22 dated 6 September 2022 which indicated that the lifting of the moratorium was contingent on (a) completion of an ERA; and (b) completion of new Codes of Practice for bunkering (**Codes**). Neither of these requirements for lifting the moratorium has been met.

16.1. TNPA initiated its ERA by way of a tender issued on 15 July 2022.

16.1.1. During the course of 2023, a number of stakeholder engagements were held. A draft ERA and Environmental Management Plan were published for comment in November 2023. The comment period (including extensions granted to certain interested and affected parties) closed on 31 January 2024.

16.1.2. In the Response, you indicated that the DFFE had received a final version of the TNPA ERA on 11 April 2024. However, to date the final TNPA ERA has not been published, nor circulated to interested and affected parties. Further, and despite requests for clarification that we have sent to both TNPA and its environmental consultants, there has been no formal notification of next steps.

16.1.3. Accordingly, it is not clear that the ERA is in fact final.

16.2. Two sets of draft codes have been published to date – neither of them finalized:

16.2.1. On 6 September 2022, separate bunkering and ship-to-ship transfer codes of practice were published together with MIN 10-22. Final versions were not published.

16.2.2. On 19 February 2024, a further draft bunkering code was issued by SAMSA for comment (with no ship-to-ship transfer code published). The draft bunkering code had removed all reference to environmental assessment, risks and protections – despite these falling within the ambit of SAMSA. We made this clear in our comments dated 8 March 2024.

16.2.3. We have received no confirmation of finalization of this 2024 draft and no finalised bunkering code has been published on the SAMSA website.

16.2.4. Accordingly, the requirement of publication of Codes has not been met.

17. Notwithstanding the TNPA ERA and Codes not being final, it appears that SAMSA and TNPA have recommenced processing STS Bunkering licences.

[3] GN 255 in *GG* 31986 of 6 March 2009.
[4] Correspondence from TNPA to the BLC dated 25 October 2023.

17.1. This process was anticipated in SAMSA's Notice of 19 February 2024. It was subsequently confirmed at a stakeholder consultation convened by SAMSA on 30 April 2024 as well as a series of media reports published during the same period.

17.2. There has been no formal communication regarding the recommencement of STS Bunkering to the OOSF, nor to the OEWG. As you acknowledged in the Response both groups had their most recent meetings (scheduled for 8 March 2024) cancelled with no indication of rescheduling.

17.3. Similarly, there has been no communication to interested and affected parties involved in the TNPA ERA, nor to those commenting on the Codes.

17.4. SAMSA's approach is contrary to the intergovernmental co-operation required of organs of state – and also fails to reflect the constitutional standards of accountability and transparency to which organs of state are bound.

18. According to an explanation provided at a roundtable of bunkering stakeholders on 30 April 2024, the lifting of the moratorium appears to have been at the instance of the Minister of Transport.

19. If this is, in fact, the position, we draw this to your attention as a potential irregularity which requires rapid clarification and remedy by your office.

B) The critical importance of the constitutional principles of co-operative governance and environmental rights

20. As you are aware, the Transport Cluster is bound by the principles of cooperative government set out in section 41(1) of the Constitution as well as those applicable to the public administration in section 195. These include the principles of lawfulness and constitutionality, as well as those of co-operation, accountability and transparency.

21. The Transport Cluster also bears the obligations articulated in section 7(2) of the Constitution to respect, protect, promote and fulfil the Bill of Rights – including everyone's right to an environment that is not harmful to health and well-being expressed in section 24(a) and everyone's right to have the environment protected for the benefit of present and future generations expressed in section 24(b).

22. Section 24(b) imposes specific obligations on the Transport Cluster to:

22.1. prevent pollution and ecological degradation (for example, through measures that, *inter alia,* prevent pollution of the marine environment by oil, other polluting chemical agents, air emissions, noise and light; prevent degradation of marine ecosystems and habitats through introduction of algal blooms; ensure marine space is not used beyond the limits of its ecological carrying capacity; and protect the integrity of the inter-tidal and coastal zones falling with the Transport Cluster's jurisdiction);

22.2. promote conservation (for example by, *inter alia,* respecting limits imposed by conservation measures such as marine protected areas and the identification of Critical Biodiversity and Ecological Support Areas in the National Coastal and Marine Spatial Biodiversity Plan, and Ecologically or Biologically Significant Marine Areas[5] and by pro-actively incorporating international best practice and guidelines pertaining

[5] https://www.cbd.int/ebsa/.

to maritime trade and traffic into domestic plans, guidelines and legislation within the Transport Portfolio); and

22.3. secure ecologically sustainable development and use of natural resources while promoting justified social and economic development.

23. Given the economic and social importance of the Transport Cluster and your portfolio, this last obligation, articulated in section 24(b)(iii) of the Constitution, is particularly critical. When considered with reference to maritime activity, it includes two primary sets of obligations:

23.1. First, it is essential that all economic and social development initiated or overseen by the Transport Cluster is fully justified, properly reasoned, proportionate and founded in sound evidence. In relation to maritime transport, such justification must have regard to the standard of best available science which is integral to relevant international conventions by which South Africa is bound, including those administered by the International Maritime Organisation (**IMO**), the United Nations Law of the Sea Convention (**UNCLOS**) and United Nations Framework Convention on Climate Change (**UNFCCC**). The best available science standard, not only requires that economic and social data is robust and well-founded, but also supports incorporation of the tools and data of South Africa's Natural Capital Accounting system[6] into the Transport Cluster's assessment of whether particular development initiatives are properly "justified" as required by section 24(b)(iii) of the Constitution.

23.2. Second, no development (however justified) can lawfully proceed if doing so means that the ecologically sustainable development and use of natural resources is not "secured". This obligation does not rest solely on the DFFE. It also binds the Transport Cluster and means that maritime development initiatives cannot be promoted, implemented or operated if they fail to fully safeguard the long-term integrity of marine and coastal ecosystems.

23.2.1. This is a critical consideration in relation to the development of measures such as SAMSA's Codes and standard operating procedures developed on the basis of the TNPA ERA or port expansion.

23.2.2. It also provides a Constitutional context for the environmental obligations under the IMO treaties which are assigned to the Transport Cluster as well as those cross-sectoral obligations arising from UNCLOS and the UNFCCC.

23.2.3. In this regard, we note that there is a constitutional imperative for the Transport Cluster ensuring proper domestication of the international treaty regime applicable to the maritime sector.

[6] Department of Statistics South Africa (2021) *National Natural Capital Accounting Strategy: A ten-year strategy for advancing Natural Capital Accounting in South Africa*, available online < https://www.statssa.gov.za/publications/04-01-00/04-01-002021.pdf>, accessed 6 August 2024. Note in particular the importance of Goal 1 ("*NCA is used for integrated planning, decision-making, monitoring and evaluation across a range of sectors"*) .

23.2.4. There is also a sound constitutional basis for incorporating voluntary guidelines supporting ecological sustainability into regulation within Transport's functional area such as the *Revised Guidelines for the Reduction of Underwater Radiated Noise from Shipping to Address Adverse Impacts on Marine Life* (MEPC.1/Circ.906) of 22 August 2023 (**IMO Noise Guidelines**).

24. It is with this constitutional framework in mind, which is recognised in the White Paper on National Transport Policy 2021,[7] that we turn specific interventions relating to STS Bunkering and our request that you take action.

C) Our request for action in respect of STS Bunkering

25. As indicated above, in our most recent correspondence to the Environment Minister, we enjoined that office to engage with the Minister of Transport to ensure that STS Bunkering was in fact properly regulated. We now request that you, in your capacity as Minister of Transport take the initiative to engage with the Environment Minister, mindful of your familiarity with the history of STS Bunkering and the need for proper environmental assessment and regulation.

26. In presenting this request, we are mindful of the urgent need for co-operation between the Ministries responsible for transport and environmental affairs. This is necessary to expedite the process of closing the regulatory gaps surrounding STS Bunkering (a process already initiated, but apparently not concluded, by SARS within its functional area). It is also essential for purposes of ensuring proper regulation of maritime pollutants which is an imperative in terms of protecting marine ecological processes as well as marine ecological services (including those relevant to climate mitigation and adaptation).

27. For this reason, we urge the Transport Cluster to co-operate with the Environment Minister and DFFE in undertaking a nation-wide SEA to consider the impacts of proposed port expansion activities and plans for expansions in maritime trade and traffic with particular regard to the ecological carrying capacity of South Africa's coastal zones, the impacts of increased maritime activity of marine noise pollution, and South Africa's international obligations in respect of biodiversity conservation, migratory species, maritime pollution, climate change and the law of the sea.

28. In the short term, we request that you confirm:

28.1. whether your office has been briefed regarding the conduct and outcomes of the TNPA ERA (and if not, to request such briefing);

28.2. what engagements, if any, you have had with SAMSA regarding its decision to lift the moratorium on the issuance of new STS Bunkering operator licences and to remedy the irregularity that appears to have arisen in this regard;

28.3. what engagements, if any, you have had with TNPA regarding STS Bunkering, beyond the TNPA ERA; and

[7] GN1050 in *GG* 46422 of 27 May 2022.

28.4. whether the Department of Transport has a policy on STS Bunkering (and if so, if this can be provided).

29. Finally, we draw attention to specific interventions which fall within the functional area of the Transport Cluster and which require urgent attention in respect of closing regulatory gaps pertaining to STS Bunkering as well as marine pollution control more generally. In this regard, we call upon you to:

29.1. engage with the office of the President to ensure that the Marine Pollution (Prevention of Pollution from Ships) Amendment Bill [B5-2022] is signed into law and commences;

29.2. take the necessary steps to ensure that all support is provided to parliament as the Marine Pollution (Preparedness, Response and Cooperation Bill) [10B-2022] is revived and taken through the parliamentary process;

29.3. ensure that the Revised Guidelines for the Reduction of Underwater Radiated Noise from Shipping to Address Adverse Impacts on Marine Life (MEPC.1/Circ.906) of 22 August 2023 are incorporated into South African law by way of regulation under the Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986 or the Merchant Shipping Act, 57 of 1951;

29.4. proactively regulate marine noise pollution within marine spaces within the jurisdiction of TNPA, SAMSA and the Department of Transport; and

29.5. ensure the domestication and implementation of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.

D) Conclusion

30. We trust that you will receive our correspondence in the spirit in which it is sent, namely, as a call upon you to employ your knowledge and expertise accrued during your tenure of Minister responsible for environmental affairs, to ensure that the critical Transport portfolio gives effect to everyone's rights to an environment that is not harmful to health and well-being as well as to have the environment protected for the benefit of present and future generations.

31. We would welcome engagement with you and your Department to discuss practical measures through which this can be achieved in the biodiversity space.

Yours faithfully,

BIODIVERSITY LAW CENTRE NPC

***Per* Nina Braude**

Annexure 1

Date: 16 May 2024

TO:	**Minister of Forestry, Fisheries and the Environment**	
	Honourable Barbara Creecy	Minister@dffe.gov.za BMbuli@dffe.gov.za LLevendal@dffe.gov.za
AND TO:	**Deputy Director-General: Regulatory Compliance and Sector Monitoring**	
	Ms Vanessa Bendeman	VBendeman@dffe.gov.za MSeptember@dffe.gov.za
AND TO:	**Deputy Director-General: Oceans and Coasts**	
	Dr Lisolomzi Fikizolo	LFikizolo@dffe.gov.za NMhlahlo@dffe.gov.za
COPY TO:	**Minister of Transport**	
	Honourable Sindisiwe Chikunga	TransportMinistry@dot.gov.za MthembuZ@dot.gov.za ItumelengL@dot.gov.za
COPY TO:	**Transnet National Ports Authority**	
	c/o Captain Thulani Dibeko and Ms Zimasa Sani	Thulani.Dubeko@Transnet.net Zimasi.Sani@transnet.net
COPY TO:	**South African Maritime Safety Authority**	
	c/o Chief Executive Officer	tsu@samsa.org.za
FROM:	**BIODIVERSITY LAW CENTRE**	kate@biodiversitylaw.org nina@biodiversitylaw.org
Total pages:	5 [30 including annexures]	Our ref: BLC/Penguins1/010 Your ref: MCE 222068; MCE231641

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Biodiversity Law Centre NPC
Reg No. 2021/631341/08
NPO No. 264 246 NPO
PBO No. 930072892
Law Clinic registered with the Legal Practice Council

Dear Minister Creecy

RE: LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER

1. We refer to your correspondence dated 1 November 2022 (**November Letter**) and 6 February 2024 (**February Letter**) as well as our correspondence dated 5 June 2023 and 20 September 2023 and address this response on behalf of the Biodiversity Law Centre, SANCCOB and BirdLife South Africa.

2. As we pointed out in our previous correspondence:

    2.1. Your November Letter indicated that the Department of Forestry, Fisheries and the Environment (**DFFE**) was investigating the desirability of listing offshore bunkering and ship-to-ship transfer (collectively, **STS Bunkering**) as an activity which may not commence without authorisation pursuant to section 24(2) of the National Environmental Act, 107 of 1998 (**NEMA**), in addition to considering whether a strategic environmental assessment was an appropriate tool for site selection.

    2.2. In this same correspondence, you indicated that the DFFE had been working with the South African Maritime Safety Authority (**SAMSA**) and Transnet National Ports Authority (**TNPA**) "*to ensure the veracity of the [TNPA] risk assessment as well as to ensure that SAMSA's Codes of Practice, as a minimum incorporate certain environmental aspects of the activity"*.

    2.3. You again indicated in the "*Note to Editors*" accompanying publication of your statement issued on 4 August 2023 in respect of release of the "*Report of the International Review Panel Regarding Fishing Closures Adjacent to South African Penguin Breeding Colonies and Declines in the Penguin Population"* that you were undertaking a risk assessment of oil bunkering in Algoa Bay by DFFE and its "conservation partners".

3. In our September correspondence we sought clarification, *inter alia*, regarding whether this "risk assessment" was the study currently being undertaken by the TNPA and the DFFE's role in this process. To date, we have not received the clarification requested.

4. In your February Letter, you responded to our letter addressed on 5 June 2023 (without reference to our September correspondence), indicating, *inter alia*, that:

    4.1. the DFFE was "*engaging with other role-players… on an approach to mitigate the potential impact of bunkering operations, beyond what is already in place or being developed, such as the SAMSA Bunker Codes of Practice and the TNPA Environmental Risk Assessment"*;

4.2. the DFFE would be in a "*better position to consider the measures"* of issuance of a coastal protection notice in terms of section 59 of the National Environmental Management Integrated Coastal Management Act, 24 of 2008 and section 57(2) of NEMA (as well as other potential measures) once the TNPA Environmental Risk Assessment (**TNPA ERA**) had been finalised; and

4.3. it would be "premature" *to take such measures "without being in possession of all the relevant facts and information"*.

5. Accordingly, we have received no response regarding whether the DFFE has commenced the process of examining whether STS Bunkering should be included as a Listed Activity, as contemplated by the EIA Regulations, 2014, nor any clarification regarding engagements between the DFFE and other stakeholders, including SAMSA, TNPA and the consultants engaged with the TNPA ERA.

6. This non-response and the apparent inaction of the DFFE is of increasing concern, given that:

6.1. On 13 February 2024, TNPA's environmental consultants indicated that comments on the draft Environmental Risk Assessment were still being collated; that the comments and updated ERA Report had not yet been provided to TNPA; and that TNPA had not yet clarified next step. By 10 May 2024, it appears that comments had been collated, however, there was no further clarity regarding updating of the draft ERA Report or next steps. The relevant chain of correspondence is attached, marked "**1**".

6.2. On 16 February 2024, SAMSA issued notice MN 01-24(C) entitled "*SAMSA Bunkering Code of Practise [sic]"* and confirmed SAMSA's intention to "*release the procedures and requirements wrt the implementation of the Code of Practice for Bunkering in South African waters"* together with a draft SAMSA Bunkering Code of Practice (**2024 Code**) for comment.

6.3. As indicated in our comments submitted to SAMSA on 8 March 2024 (attached marked "**2**"), the 2024 Code significantly rolled back on the inclusion of environmental considerations which had been apparent in earlier draft codes dated 2022; appeared to ignore the conduct of the TNPA ERA (or its findings); did not appear consonant with representations from your office regarding the co-operative process that was underway; and was in other material respects not fit for purpose.

6.4. The Offshore Environmental Working Group meeting scheduled for 8 March 2024 was cancelled on 4 March 2024, while the Offshore Operators Stakeholders Forum (**OOSF**) scheduled for 22 March 2024 was initially rescheduled for 8 March 2004 and then abruptly cancelled on 7 March 2024. In neither case were reasons provided for the cancellations, and neither meeting has been rescheduled. Both meetings were to have provided updates

on the TNPA ERA while the OOSF was to specifically discuss the status of the moratorium. The cancellation of these meetings deviates markedly from the approach to co-operative governance and emphasis on stakeholder participation which has been pursued to date and, once again, runs contrary to your office's emphasis on co-operation.

6.5. At a roundtable convened by SAMSA on 30 April 2024, and including representations from various government stakeholders, including SAMSA, TNPA and the DFFE, the SAMSA CEO confirmed that the moratorium on new STS Bunkering licences had been lifted pursuant to a decision of the SAMSA Board and, it appears, at the instance of the Minister of Transport – and that two new licences were being processed.

6.6. In a news report dated 13 May 2024, marked "**3**", "spokespeople from SAMSA and TNPA both confirmed the processing of new bunkering licences

7. In the circumstances, it appears that notwithstanding the indication from your offices that it is premature to implement measures to ensure that environmental safeguards are in place to mitigate against harms of STS Bunkering, this is not the case: SAMSA and the Minister of Transport have clearly determined that STS Bunkering will recommence, notwithstanding the finalisation or otherwise of the TNPA ERA.

8. This is particularly so given the evidence available regarding the impacts of oil and noise pollution on the sensitive Algoa Bay environment – information which is already available (and acknowledged) by the DFFE and not subject to doubt. Also beyond doubt is the critical status of the African Penguin – which has two of its seven largest remaining breeding colonies in Algoa Bay. As pointed out in our September Letter, it was confirmed that in 2023, there were only 783 breeding pairs of African Penguins on St Croix Island – in other words a 38% decrease since the 2022 count and below the critical threshold of 1,000 breeding pairs.[1] The African Penguin is already classified as Endangered by the International Union for Conservation of Nature (**IUCN**) and Threatened or Protected Marine Species Regulations (**TOPSM**).[2] The African Penguin is subject to international protections in terms of various treaties, including CITES, the Convention on Migratory Species Convention and the African Eurasian Waterbird Agreement and its threatened status requires heightened conservation obligations in terms of the National Environment Management: Biodiversity Act, 10 of 2004 (**NEM:BA**).

9. In the of context of these legal obligations – as well as the state of knowledge regarding the impact of STS Bunkering on the African Penguin and SAMSA's recommencement of STS Bunkering activities, it is certainly <u>not</u> premature to take steps to institute measures in terms of either section 59 of the National Environmental Management: Integrated Coastal Management Act, 2008 (**NEM:ICMA**) or section 57(2) of NEM:BA.

[1] DFFE: Unpublished data.
[2] GN 476 in *Government Gazette* 40875 of 30 May 2017.

It is, similarly, not premature to initiate the process regarding declaring STS Bunkering to be a Listed Activity as contemplated by the EIA Regulations, 2014. This is particularly so, given the risk averse and cautious approach required under NEMA.

10. We would also urge your office to immediately engage with the Minister of Transport regarding the imperatives of ensuring that STS Bunkering does not breach the State's constitutional and international obligations regarding environmental protection; the prevention of environmental degradation and pollution; and ensure that use of the environment is consistently ecologically sustainable.

11. We look forward to your response regarding:

    11.1. the involvement of the DFFE and your office in the TNPA ERA process;

    11.2. your engagements with SAMSA and the Minister of Transport regarding the recommencement of STS Bunkering activities; and

    11.3. the immediate steps to be taken by your office and the DFFE in terms of the powers afforded under NEM:ICMA, NEM:BA and NEMA to intervene to ensure that South Africa's international and constitutional obligations are maintained and the right to have an environment that is protected for present and future generations is upheld.

Yours faithfully,

BIODIVERSITY LAW CENTRE NPC

***Per* Nina Braude**

From: Nina Braude
Sent: Friday, 10 May 2024 14:55
To: 'Donavan Henning'
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ; Kate Handley
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Tracking:

Recipient	Delivery	Read
'Donavan Henning'		
mdelarue@prdw.com		
Zimasa.Sani@transnet.net		
Thulani Dubeko Transnet National Ports Authority NGQ		
Kate Handley	Delivered: 2024/05/10 14:56	Read: 2024/05/11 13:55

Dear Donavan

Many thanks for your prompt response which we appreciate.

Could you confirm whether the draft ERA was amended in light of the comments received and, if so, when this will be made available?

In addition, could you confirm the next steps with TNPA and revert to all stakeholders who, we are sure like us, would appreciate an update.

Kind Regards
Nina

From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Friday, May 10, 2024 1:12 PM
To: Nina Braude <nina@biodiversitylaw.org>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: Re: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

Thank you for your email.

The Comments and Responses Report was updated with all comments received on the draft Environmental Risk Assessment and Management Plan.

TNPA will need to advise on the status and way forward.

Regards

Donavan Henning

Nemai Consulting

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Address : 147 Bram Fischer Drive Ferndale, 2194, South Africa

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From: Nina Braude <nina@biodiversitylaw.org>
Sent: 10 May 2024 08:49
To: Donavan Henning <DonavanH@nemai.co.za>
Cc: mdelarue@prdw.com <mdelarue@prdw.com>; Zimasa.Sani@transnet.net <Zimasa.Sani@transnet.net>; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Further to your update sent below on 13 February 2024, we would appreciate your confirming whether all comments have been captured and the document submitted to TNPA. In addition, could you let us know the status of the ERA and the "way forward" contemplated by TNPA.

We would very much appreciate your assistance.

Kind Regards
Nina

NINA BRAUDE | ATTORNEY
nina@biodiversitylaw.org
079 248 5663
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From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Tuesday, February 13, 2024 2:21 PM
To: Nina Braude <nina@biodiversitylaw.org>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

We are in the process of capturing all comments received on the draft Environmental Risk Assessment and Management Plan in a Comments and Responses Report and updating the overall document, which will be submitted to TNPA.

TNPA is to advise on the way forward thereafter.

Regards
Donavan Henning

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From: Nina Braude <nina@biodiversitylaw.org>
Sent: Monday, February 12, 2024 10:05 AM
To: Donavan Henning <DonavanH@nemai.co.za>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Following the submission of our comments on 31 January 2024 and your acknowledgment of receipt, we would appreciate your confirming the next steps in the ERA process as well as the relevant timelines.

Kind Regards
Nina Braude

From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Thursday, February 1, 2024 7:26 AM
To: Nina Braude <nina@biodiversitylaw.org>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ

<Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

Thank you very much. We acknowledge receipt of your comments.

Regards
Donavan Henning

Nemai Consulting
Tel : +27 11 781 1730
Fax : +27 11 781 1731
Mobile : +27 82 891 0604
Email : donavanh@nemai.co.za
Address : 147 Bram Fischer Drive Ferndale, 2194, South Africa
Postal Address : PO Box 1673, Sunninghill, 2157

From: Nina Braude <nina@biodiversitylaw.org>
Sent: Wednesday, January 31, 2024 3:00 PM
To: Donavan Henning <DonavanH@nemai.co.za>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Please see attached the Biodiversity Law Centre's comments on the TNPA ERA for your consideration.

Kind Regards
Nina

NINA BRAUDE | ATTORNEY
nina@biodiversitylaw.org
079 248 5663
www.biodiversitylaw.org

A non-profit company with registration number 2021/631341/08 PBO No.930072892,
NPO No.264-246 and a Law Clinic registered with the Legal Practice Council
Centre for Biodiversity Conservation, Kirstenbosch, Newlands, 7735

From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Thursday, January 11, 2024 5:02 PM
To: Nina Braude <nina@biodiversitylaw.org>; mdelarue@prdw.com; Zimasa.Sani@transnet.net
Cc: Kate Handley <kate@biodiversitylaw.org>; Nicky Stander <Nicky@sanccob.co.za>; Monica Stassen

<monica@sanccob.co.za>; Katta Ludynia <katta@sanccob.co.za>; Melissa Lewis <Melissa.Lewis@birdlife.org.za>; Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

Thank you for your well wishes. Also hope that you have a wonderful 2024.

We had a team meeting this afternoon with TNPA and it was confirmed that you can receive an extension until 31 January 2024. This is to allow for the subsequent completion of the project within the contract period.

Regards
Donavan Henning

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From: Nina Braude <nina@biodiversitylaw.org>
Sent: Wednesday, January 10, 2024 4:11 PM
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Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Happy New Year! We hope you had a restful break.

Many thanks for confirming receipt. We wondered whether you had received feedback from the project team in respect of our request (sent on behalf of ourselves as well as SANCCOB and BirdLife South Africa) to provide comments by 9 February 2024.

Kind Regards
Nina

From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Thursday, January 4, 2024 12:39 PM
To: Nina Braude <nina@biodiversitylaw.org>; mdelarue@prdw.com; Zimasa.Sani@transnet.net
Cc: Kate Handley <kate@biodiversitylaw.org>; Nicky Stander <Nicky@sanccob.co.za>; Monica Stassen <monica@sanccob.co.za>; Katta Ludynia <katta@sanccob.co.za>; Melissa Lewis <Melissa.Lewis@birdlife.org.za>;

Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

We take note of your request to provide comments on the draft Environmental Risk Assessment and Management Plan by 9 February 2024. We are awaiting feedback on this matter from the project team and will advise in due course.

Regards
Donavan Henning

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From: Nina Braude <nina@biodiversitylaw.org>
Sent: Tuesday, December 12, 2023 10:48 AM
To: Donavan Henning <DonavanH@nemai.co.za>; mdelarue@prdw.com; Zimasa.Sani@transnet.net
Cc: Kate Handley <kate@biodiversitylaw.org>; Nicky Stander <Nicky@sanccob.co.za>; Monica Stassen <monica@sanccob.co.za>; Katta Ludynia <katta@sanccob.co.za>; Melissa Lewis <Melissa.Lewis@birdlife.org.za>; Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Subject: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Please find the attached correspondence for your attention.

Kind Regards
Nina

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BIODIVERSITY LAW CENTRE
LAW FOR NATURE

Date: 8 March 2024

TO: **South African Maritime Safety Authority**

Chairman of the Board submissions@samsa.org.za

FROM: **BIODIVERSITY LAW CENTRE** kate@biodiversitylaw.org
nina@biodiversitylaw.org

Total pages: 11 Our ref: BLC/Penguins1/009

COMMENTS: BUNKERING CODE OF PRACTICE

1. **Introduction**

1.1. We refer to the South African Maritime Safety Authority's (**SAMSA**) notice MN 01-24(C) issued on 16 February 2024 which is entitled "*SAMSA Bunkering Code of Practise* [sic]" and which states SAMSA's intention "*to release the procedures and requirements wrt the implementation of the Code of Practice for Bunkering in South African waters*" and the draft SAMSA Bunkering Code of Practice dated February 2024 (**2024 Code**).

1.2. The Biodiversity Law Centre (**BLC**) is a public interest law centre focused on protection of biodiversity and has been engaging with the Transnet National Ports Authority (**TNPA**), Minister for Forestry, Fisheries and the Environment (**Minister**) as well as SAMSA regarding its concerns about the impacts that offshore bunkering and ship-to-ship transfers have on marine ecosystems – in particular the sensitive Algoa Bay habitat and African Penguins which have been shown to be adversely affected by the impacts of offshore bunkering (**Bunkering**) and ship-to-ship fuel transfer activities (**STS Transfer**). We have previously made submissions regarding:

1.2.1. SAMSA's draft Bunkering Code dated September 2022 (**2022 Code**) (BLC comments dated 22 September 2022 referred to below as the "**2022 Submissions**"); and

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1.2.2. the TNPA's draft *Provisional of Specialist Services for Offshore Bunkering and Ship to Ship Transfer of Liquid Bulk in the Nelson Mandela Bay Ports: Environmental Risk Assessment & Management Plan* dated November 2023 (**TNPA ERA**) (BLC comments dated 31 January 2024).

1.3. This comment on the 2024 Code accordingly has regard to the TNPA ERA, 2022 Code as well as SAMSA's draft Bunkering Code dated October 2021 (**2021 Code**). We note that the 2024 Code deals only with Bunkering and not STS Transfers. At the outset, we flag this as an important omission, as it is clear that the two sets of activities are integrated in practice and that both are required for purposes of enabling the full operation of the offshore bunkering supply chain. Similarly, we flag that SAMSA's approach to regulating Bunkering without integration with quayside refuelling and fuel storage regulation, standards and guidelines presents a fragmented approach to regulation which is at odds with the need for integrated environmental management contemplated by South Africa's environmental management framework. We have not elaborated further on this omission but rather restricted the remainder of our submission to SAMSA's approach to Bunkering as expressed in the 2024 Code.

2. Summary of submissions regarding the 2024 Code

2.1. We have far-reaching concerns regarding SAMSA's authority to issue the 2024 Code at this time as well as the manner in which it has done so given the status of, and findings reported in, the TNPA ERA; previous work undertaken by SAMSA, together with the TNPA and Department of Forestry, Fisheries and the Environment (**DFFE**) in relation to the 2021 and 2022 Codes; the environmental management framework and principles governing all environmental decision-making and its effect on how SAMSA carries out its functions and fulfils its regulatory purpose; and the constitutional principles and requirements of co-operative government which bind SAMSA.

2.2. Critically, we note that SAMSA's mandate to "*ensure safety of life and property at seas; to prevent and combat pollution of the marine environment by ships; and to promote the Republic's maritime interests*"[1] necessarily requires its co-operation on environmental regulation with, *inter alia*, TNPA and DFFE. Further, it requires that SAMSA have regard to all international treaties, customary laws and guidelines relevant to South Africa's obligations and best practice in respect of pollution of the marine environment by ships as is consonant with South Africa's constitutional obligation to "*prevent ecological pollution*" as provided by section 24(b)(i) of the Constitution – as well as the additional constitutional obligations to protect the environment for the benefit of present and future generations expressed in section 24(b) through, *inter alia*, the securing of "*ecologically sustainable development*".

2.3. We contend that the 2024 Code does not properly consider the relevant set of principles, norms and obligations. Accordingly, the 2024 Code should be withdrawn

[1] South African Maritime Safety Authority Act, 5 of 1998 (**SAMSA Act**), s 3.

and SAMSA should take no further steps regarding the publication of Bunkering Codes or the lifting of the current moratorium on new bunkering operator licences, until such time as:

2.3.1. it has consulted with, and co-ordinated its regulation of these development activities, with the TNPA, DFFE and any other relevant organs of state;

2.3.2. the TNPA ERA is completed; its findings publicised and subjected to public consultation; confirmation that its findings are environmentally tenable and robust; a comprehensive approach to inter-governmental co-operation resulting from such findings is published, subjected to public consultation and confirmed as constitutionally and scientifically justified; and such inter-governmental co-operation pays specific attention to preventing ecological pollution and securing ecologically sustainable development; and

2.3.3. SAMSA has given proper consideration to whether it is in fact able to grant offshore bunkering permits in terms of the Marine Pollution (Control and Civil Liability) Act, 6 of 1981 (**Civil Liability Act**) when read with the environmental principles in section 2 of the National Environmental Management Act, 107 of 1998 (**NEMA**) which apply to all decisions effecting the environment.

2.4. We urge SAMSA to engage with the DFFE to address the consequences of the failure to have Bunkering and STS Transfer included as listed activities for the purposes of application of Chapter 5 of NEMA and, in particular, the Environmental Impact Assessment Regulations, 2014 (**EIA Regulations**). In this regard, we note that the omission of these development activities from the EIA Listings places an undue burden on SAMSA to adhere to its national and international obligations to prevent and combat pollution from ships while leaving it at risk of authorising activities which are a breach of everyone's environmental rights to have the environment protected for the benefit of present and future generations.

3. It is premature for SAMSA to be announcing the processing of new bunkering applications given the status of the TNPA ERA

3.1. SAMSA, together with TNPA, DFFE, the Department of Transport (**DoT**) and "industry stakeholders" imposed a moratorium on the issuance of new bunkering licences in 2019.[2] We understand that this moratorium was motivated by concerns regarding the environmental impacts and environmental regulation of Bunkering and STS operations.

[2] Correspondence from TNPA to BLC dated 25 October 2023 including responses from SAMSA regarding the origin of the moratorium and referring to the decision of the Offshore Operators' Stakeholder Forum meeting dated 9 April 2019.

3.1.1. The TNPA ERA records that the moratorium on new bunkering licences will remain in place "*until the completion of the ERA and consideration of the findings"*.[3] (See also the statements regarding the background to the moratorium and 2022 Code reflected in MIN10-22 addressed at paragraph 3.1.1 below).

3.1.2. Subsequent to the provision of the BLC's submissions on 31 January 2024, the BLC followed-up on the next steps and timelines relating to the TNPA ERA process with Nemai Consulting (**Nemai**). On 13 February 2024, Nemai advised that comments received on the TNPA ERA were being compiled and updates being attended to for submission to TNPA. We were further advised that TNPA would advise on next steps once in receipt of this Nemai's update. To date, we have heard nothing further. It thus seems clear that the TNPA ERA remains under consideration and has by no means been "completed".

3.1.3. We note that the TNPA ERA has been commissioned with the recognition that "*STS bunkering operations pose risks different and greater than those normally expected for standard shore-to-ship re-fuelling operations*" and that TNPA commissioned the ERA "*to inform the regulation of STS transfers and bunkering within port limits….".*[4] While we appreciate that these are TNPA's objectives, it is contrary to the principles of co-operative government, and also an approach to effective management of dynamic ecosystems such as ocean spaces, for SAMSA to operate independently of TNPA in considering the appropriate regulatory environment and publishing regulatory guidelines such as the 2024 Code.

3.1.4. In particular, while SAMSA has purported to explain that its jurisdiction over ocean-spaces extends further into South Africa's exclusive economic zone than that of the TNPA, the marine ecosystem pays no regard to such jurisdictional distinctions (to the extent that SAMSA's interpretation of the legal position is correct). It is thus critical that SAMSA and TNPA co-ordinate their regulation of Bunkering and STS Transfer activities to give effect to the imperatives and principles of environmental regulation within the coastal waters, maritime spaces and maritime activities under South Africa's regulatory control. These include the principle in section 2(4)(r) of NEMA which specifies that "*Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure".* Marine areas where offshore Bunkering activities are contemplated are just such ecosystems. This is illustrated by

[3] ERA p 8.
[4] TNPA ERA p 1.

the draft Marine and Coastal Environmental Risk Assessment included with the TNPA ERA (**MCERA**) which acknowledged that Algoa Bay was a formally recognised vulnerable ecosystem, contained a reef system recognised as vulnerable, included important estuaries and was subject to particular development pressure.[5]

3.2. It is in this context that we draw SAMSA's attention to its publication of the draft 2024 Code as premature. It is certainly entirely inappropriate to signal that SAMSA intends to lift the moratorium on bunkering operator licences by processing new bunkering operator applications, as has been suggested by MN 01-24 (C).

4. The 2024 Code is inconsistent with SAMSA's approach to developing codes to regulate Bunkering and STS Transfer since 2021

4.1. By way of example, MIN10-22 which announced the comment period for the 2022 Code, expressly stated that oil spills occurring between 2016 and 2019, resulting from Bunkering activities had led government to decide "*to review all policies, procedures and processes for the application, approval and management of these activities*".[6]

4.2. MIN10-22 also stated that conditions for lifting the moratorium in Algoa Bay were both completion of the TNPA ERA and publication of the Codes of Practice (and that the latter was also a condition for lifting the moratorium on bunkering elsewhere in South Africa).

4.3. The 2022 Code was clearly published in an attempt to address environmental considerations and as a response to the recognition that Bunkering posed significant environmental risks. While the BLC's 2022 Submissions noted critical difficulties with the 2022 Code, this 2022 draft did represent a consistent attempt to meet the objectives articulated by SAMSA. It is thus concerning, that the 2024 Code appears to roll back key aspects of environmental regulation mooted in this earlier draft including the chapters addressing Noise and Environmental Risk Management Plans.

4.4. We draw SAMSA's attention to the requirement that regulatory interventions, such as the 2024 Code, must have a rational connection to the purpose for which they are initiated. It is clear from the text of the 2024 Code that these are a continuation of SAMSA's earlier efforts. Accordingly, they must be read as an attempt to give effect to the purpose of management of the self-same environmental risks previously identified (and which have also given rise to the TNPA ERA). It is simply inconceivable that the 2024 Code could reverse key environmental protections. Removing these sections which appeared in the 2022 Code (rather than refining and improving them) is a clear indication that the 2024 Code is not rationally connected with its environmental risk management purpose.

[5] MCERA, pp 10, 26, 58, 77-78, 78-79.
[6] MIN 10-22, para (1).

4.5. In addition to inconsistency with its purpose, the 2024 Code reflects a departure from the clear approach to co-operative government reflected in previous drafts. We flag that MIN 10-22 and the 2022 Code expressed a clear approach to co-operative government between DFFE, SAMSA, TNPA and the Department of Transport[7] as well as a sound approach to public participation. By way of example, the 2022 Code clearly attempted to consider inputs regarding noise pollution from ships[8] and, in this regard, made significant strides towards proper regulation since publication of the 2021 Code (albeit still reflecting some major difficulties).

4.6. It is concerning that the 2024 Code takes a step backwards. Not only does this undermine the purpose and objects of the very idea of "Codes" themselves, but it also suggests a flawed procedure and raises questions regarding wasted time, effort and expenditure developing the Bunkering guidelines since 2021 (if not earlier). This is contrary to the principles of accountability applicable to all organs of state and is also contrary to the international obligation placed on South Africa in terms of the IMO Instruments Implementation Code (III Code), Part 1, clauses 11 to 14 to continually review and improve South Africa's performance in terms of, *inter alia*, environmental protection.[9]

5. The 2024 Code fails to give effect to SAMSA's constitutional, statutory and treaty obligations pertaining to the environment and prevention and combatting of pollution

5.1. Section 24(b) of the Constitution provides that everyone is entitled to have the environment protected for the benefit of present and future generations through a range of measures, including legislation, which prevent pollution and environmental degradation; promote conservation; and secure ecologically sustainable development. Government has an obligation to respect, protect, promote and fulfil this right – and thus attracts obligations to prevent pollution and ecological degradation; promote conservation and secure ecologically sustainable development. This is an obligation borne by all organs of state, including SAMSA, when engaging in activities affecting the environment. Bunkering is self-evidently such an activity. As indicated above, this is acknowledged by SAMSA.

5.2. The 2024 Code correctly identifies that one of SAMSA's objectives is to "*prevent and combat pollution of the marine environment by ships*".[10] Similarly, the 2024 Code correctly identifies that SAMSA is required to implement the Marine Pollution (Civil and Control Liability) Act, 6 of 1981 (**Civil Liability Act**) and Merchant Shipping (Civil Liability Convention) Act, 25 of 2013 which are relevant to SAMSA's regulation of

[7] See 2022 Code p 7; 14.
[8] MIN10-22, "Draft Codes" para (3)
[9] IMO, Resolution A. 1070(28), *IMO Instruments Implementation Code (III Code*) adopted on 4 December 2013.
[10] SAMSA Act, s 3(b).

maritime oil and hazardous discharge. However, these two statutes are by no means the sole legislation relevant to SAMSA's obligations vis-à-vis Bunkering.

5.3. Most obviously, SAMSA has omitted the Marine Pollution (Prevention of Pollution from Ships) Act, 2 of 1986 (**Prevention of Pollution Act**) and obligations flowing from this Act's domestication of the International Convention for the Prevention from Ships, 1973 as amended by the 1978 Protocol (**MARPOL**). SAMSA, however, is the primary South African implementing authority. While certain of the requirements in the checklists attached to the 2024 Code appear to reflect certain of the domestic and international obligations under the Prevention of Pollution Act, MARPOL and the related International Maritime Organisation (**IMO**) instruments, the 2024 Code would benefit from express reference to these instruments. This would not only ensure that all relevant statutory and international obligations are accounted for and SAMSA itself is held accountable for implementing its mandate, but also so that Bunkering guidelines are properly situated within their legal context and capable of being understood with reference to the various international standards which support the framework of maritime safety and pollution instruments which SAMSA must enforce.

5.4. Critically, however, the 2024 Code omits reference to:

5.4.1. section 24(b) of the Constitution which must provide the interpretive context for the Civil Liability Act, Prevention of Pollution Act and all SAMSA's pollution management objectives; and

5.4.2. NEMA which contains environmental management principles applicable to all environmental management decisions, and definitions of, *inter alia*, "pollution" which must inform SAMSA's interpretation of its powers and duties in relation to Bunkering regulation.

5.5. While the EIA procedures in NEMA do not yet apply to Bunkering activities, the environmental management principles set out in section 2 of NEMA do. These must be used in respect of all environmental decision-making, including decisions which SAMSA purports to make in terms of section 21 of the Control and Civil Liability Act and the decisions made in respect of regulation of Bunkering through instruments such as the 2024 Code. The 2024 Code clearly does not have regard to these principles – including the principle regarding particular consideration of marine ecosystems already referenced above, but also the critically important precautionary principle which is inherent to ensuring that all environmental management decisions are grounded in the best available science and take a risk averse and cautious approach taking into account scientific unknowns.[11] I expand on this below.

5.6. In addition, the definition of "pollution" in NEMA must inform how SAMSA interprets its statutory obligation to *"prevent and combat pollution of the marine environment by ships*". NEMA's definition of "pollution" includes *"noise, odours, dust or heat*" which

[11] NEMA, s 2(4)(a)(vii).

are emitted from any activity which has an impact, *inter alia*, on the *"composition, resilience and productivity of natural or managed ecosystems*".[12] Noise – and particularly underwater noise – therefore must fall within the scope of the "pollution" with which SAMSA is tasked with preventing and combatting. Further, SAMSA is not just tasked with stopping noise pollution. It is enjoined to "combat" or actively fight against it. In this regard, SAMSA

5.7. The 2022 Code acknowledged that prevention and combatting of underwater noise pollution fell within SAMSA's mandate. However, the relevant chapter has now been entirely removed (let alone updated to confirm with subsequent science, international obligations and best practice). In this regard:

5.7.1. We again draw attention to the evidence of significant and detrimental impacts of underwater noise associated with Bunkering on the African Penguin population of Algoa Bay. SAMSA will, by now be familiar with the relevant study led by L Pichegru, entitled *"Maritime traffic trends around the southern tip of Africa: Did marine noise pollution contribute to the local penguins' collapse?"*.[13] This was provided to SAMSA as an annexure to the BLC's 2022 Submissions and has since been provided to both TNPA and the DFFE by the BLC. We do not repeat the details of this study here, however, note that it indicated that the increase of bulk carriers, attracted by offshore Bunkering, had led to a major increase in ocean-based noise. This in turn appeared to be an important contributor to changes in African Penguin behaviour – including their foraging behaviour and these endangered seabirds' ability to forage effectively. This is critical as this has exacerbated difficulties experienced by the Algoa Bay African Penguins' in accessing their prey due to competition with the small pelagic purse-seine fishing industry. Accordingly, Bunkering has had a significant impact on further declines of the already-stressed African Penguin populations of Algoa Bay.[14]

5.7.2. These impacts have been acknowledged in the MCERA which also acknowledges a similar concern with behaviour responses to *"the non-impulsive noise emissions from in-transit marine traffic and from stationary bunkering operations"* in relation to the Indian Ocean humpback dolphin.[15] It also acknowledges the impacts of increased maritime-induced noise linked to Bunkering on other species. For example, it highlights that underwater explosions associated with bunkering activities could lead to the injury to fish with swim bladders (causing swim bladders to rupture with resulting damage to kidneys, liver and spleen) and injury to mammals

[12] NEMA, s 1(1).
[13] Pichegru et al "Maritime traffic trends around the southern tip of Africa – Did marine noise pollution contribute to the local penguins' collapse?" Science of the Total Environment 849 (2022) page 1.
[14] Pichegru et al, page 7.
[15] MCERA, p 157. See also TNPA ERA p 65 and 66.

(primarily trauma of various organs such as lungs, ears and the intestinal tract).[16] Despite its various deficiencies, the MCERA in fact indicated that even post-mitigation, underwater noise had a "very high" significance. This should be sufficient to indicate that Bunkering in Algoa Bay should not be permitted at all. It is likely that the same findings would arise in all South Africa's megadiverse coastal waters. Given this position, it is entirely untenable that the 2024 Code should not even contemplate regulation of noise impacts.

5.7.3. SAMSA is the key organ of state in South Africa which implements the various marine pollution and safety instruments associated with the International Maritime Organisation (**IMO**). We have already referred in this regard to MARPOL and SOLAS. The MARPOL annexures go beyond oil pollution and discharge of hazardous substances to expressly contemplate emissions associated with climate change. Similarly, the IMO has taken steps to address ocean-based noise by publishing the IMO Revised Guidelines for the Reduction of Underwater Radiated Noise from Shipping to Address Adverse Impacts on Marine Life.[17] This means, of necessity, that SAMSA must have regard to the developing understanding of pollution in the international legal context in which it operations. The relevant international norms clearly recognise that maritime noise requires regulation. When considered against the background of the domestic environmental principles and definitions which must guide SAMSA's conduct, it is simply inexplicable that noise pollution arising from Bunkering activities should not be addressed in the 2024 Code.

5.7.4. The obligations placed on SAMSA are reinforced by further international commitments made by South Africa under the Convention on the Conservation of Migratory Species of Wild Animals, 1979 (**Bonn Convention**) and Agreement on the Conservation of African-Eurasian Migratory Waterbirds (**AEWA**). The Bonn Convention has developed specific guidelines regarding the impact of marine noise which SAMSA cannot ignore.[18] In addition, the Rolling Work Plan 2021-2025 of the AEWA Benguela Coastal Seabirds International Working Group provides specifically for regulation of noise impacts generated by, *inter alia*, Bunkering.[19]

[16] MCERA pp 101-103.
[17] MEPC.1/Circ 906 of 22 August 2023.
[18] See Resolution 12.14 on the *Adverse Impacts of Anthropegnic Noise on Cetaceans and other Migratory Species*, 2017 and its annex, the *CMS Family Guidelines on Environmental Impact Assessments for Marine Noise generating Activities*, available online <https://www.cms.int/sites/default/files/document/cms_cop12_res.12.14_marine_noise_e.pdf >.
[19] Developed at the first meeting of the Benguela Coastal Seabirds International Working Group held on 3-4 March 2021.

6. **The 2024 Code ignores the regulatory lacunae of an absence of EIA Regulations**

6.1. We have previously raised our concerns regarding the omission of offshore bunkering and STS Transfer activities from inclusion as Listed Activities for purposes of the Environmental Impact Assessment Regulations, 2014 (**EIA Regulations**). In our 2022 Submission, we indicated that SAMSA should be engaging with the DFFE in this regard, rather than seeking to regulate offshore bunkering through the 2024 Code. We remain of the view that should Bunkering be permitted at all, the proper regulatory mechanism is an Environmental Authorisation, issued by the DFFE, preceded by an Environmental Impact Assessment (**EIA**).

6.2. We emphasise that the draft TNPA ERA (together with its annexures) reflected a number of flaws which the BLC pointed out in our comments. These issues notwithstanding, the draft TNPA ERA strongly indicated that the detrimental impacts on the marine environment rendered the continuation of Bunkering and STS Transfer unlawful in the absence of EIA – and potentially entirely unviable in the context of the constitutional requirement that all development is "justified" and ecologically sustainable. To date, no such justification, within the meaning of the law, has been publicized with the socio-economic benefits of offshore bunkering and STS transfer remaining opaque.

6.3. In this context, and noting the mandate, purpose and functions of SAMSA, it is concerning that references to "EIA where applicable" which appeared in the 2022 Code have been omitted. This means that the 2024 Code does not cater for the possibility of Bunkering being listed for purposes of the EIA Regulations in the future (including if this is indicated by the results of the TNPA ERA). We repeat our view that this is an eventuality that must happen if the regulation of marine shipping activities is to remain consonant with constitutional requirements. SAMSA's ignoring of this eventuality is thus inconsistent with a proper interpretation of the law.

6.4. We would contend that, to the extent that SAMSA (and TNPA) have identified the difficulties with the non-regulation of Bunkering by the DFFE, this is a legislative gap which leaves both SAMSA and TNPA vulnerable. For this reason alone, we would urge SAMSA (together with the TNPA) to engage with the DFFE to ensure that Bunkering is properly regulated by those authorities with the proper authority to administer the appropriate regulatory instruments.

6.5. This does not preclude SAMSA from co-ordinating a process of drafting and gazetting codes of good practice in conjunction with other relevant regulatory authorities. It is in the interests of transparent and accountable regulation, to have gazetted procedures in place confirming the various obligations to imposed on any bunkering operator. The expressed attempt to do so in the 2022 Code, with reference to the separate mandates of SAMSA, the TNPA and DFFE was laudable. This is now entirely absent from the 2024 Code which seem to assume for SAMSA a core regulatory function – including outside port limits. This approach is not aligned with

the obligations placed on SAMSA to engage in co-operative government and appears to be an instance of over-reach in terms of the scope of SAMSA's powers.

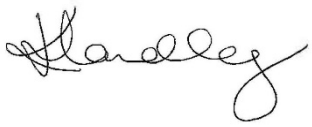
7. Conclusion

7.1. The BLC has pointed out a number of key legislative – and particularly important constitutional – obligations placed on SAMSA that require that it regulate Bunkering with regard to principles of co-operative government and environmental management applicable to all organs of state. These mean that it is not authorised to publish unilateral guidelines to address Bunkering – particularly in the context of previous drafts having expressly acknowledged these constitutional and legislative obligations. What is more, the 2024 Code omits regulation of critical pollutants such as noise and fails to make it clear whether SAMSA has in fact considered the integration of all legal requirements imposed by domestic and treaty law, for which it is responsible and which apply to Bunkering.

7.2. In addition, SAMSA appears to have issued the 2024 Code prematurely and without regard to the procedures and outcomes of the TNPA ERA. In this regard, and given the links between publication of Bunkering "Codes" and the implementation of an ERA to address historic environmental concerns, the 2024 Code is unrelated to its purpose and thus irrational.

7.3. Finally, we acknowledge the difficulty faced by SAMSA in seeking to regulate Bunkering within the scope of its objects, powers and functions and in the absence of EIA Regulation. Accordingly, we urge SAMSA to address this issue with the DFFE and Minister and seek to have Bunkering (as well as STS Transfer) listed for the purpose of appropriate environmental oversight. It is only if this is done that SAMSA can ensure that it does not commit a breach of section 24(b) of the Constitution in its attempt to regulate Bunkering.

Yours faithfully,



BIODIVERSITY LAW CENTRE NPC

***Per* Kate Handley and Nina Braude**

https://www.news24.com/fin24/economy/months-after-sars-detained-bunkering-vessels-uncertainty-about-refueling-still-prevails-20240513

Na'ilah Ebrahim

Months after SARS detained bunkering vessels, uncertainty about refueling still prevails

08:33

(Getty Images/Pablo Blazquez Dominguez)

- **Despite new tax rules for offshore bunkering not yet being finalised, SA's maritime authority says bunkering activity in Algoa Bay can continue.**
- **Last year, numerous vessels were detained by SARS for violating tax laws related to offshore bunkering, amid a gap in the rules.**
- **Port operator Transnet has also said it is busy processing for pending and new applications for bunkering.**
- **For more financial news, go to the News24 Business front page.**

The South African Revenue Services (SARS) has said it is still finalising legislation for tax rules related to ship-to-ship refuelling or offshore bunkering, months after it detained vessels off the Eastern Cape coast in Algoa Bay.

The service detained four bunker tankers and an oil drilling ship belonging to Minerva Bunkering and Heron Marine last year for violating tax rules of the Customs and Excise Act.

While bunkering services have halted at the bay since the detention and caused a R7 billion loss to the fiscus, the South African Maritime Safety Authority (Samsa) recently said it is open to reopening bunkering services. Transnet National Ports Authority (TNPA) is also open to issuing new licences for operators.

Prevailing 'uncertainty'

At a recent briefing hosted by Samsa, SARS chief litigation officer Wayne Broughton said it was willing to engage with maritime stakeholders to amend the provisions of the act to "provide certainty and clarity" related offshore bunkering tax rules.

This includes providing licensing and monitoring of barges (vessels used to store and transport fuel), vessels for controlled storage areas, special sea-based storage warehouses, and the use of marine removers of fuel-levy goods.

Broughton said the deadline for public comments on the amendments had been postponed to 10 May, after it previously closed in January this year.

The comments by Broughton came after the Eastern Cape High Court acknowledged the "uncertainty" around bunkering tax laws in March this year in a novel case that utilised tankers as floating storage facilities for fuel stocks. These were sold to foreign-going vessels and supplied through ship-to-ship transfers within ports.

READ | Fears about fuel crunch after SARS impounds ships

In an urgent application to the court, Heron Marine had applied for an amendment of SARS's detention notice and the release of their three vessels, *MT Avatar*, *MT Vemadignity*, and the *MT Vemaharmony*.

According to the judgment, the bunkering service company failed to register its bunkering operations in Algoa with SARS for two years since it began bunkering in the region in 2020.

While the court dismissed the application as moot, Judge Denzil Potgieter said:

> There does appear to be some uncertainty concerning the regulation of the specific bunkering operations conducted by [Heron Marine]. There is a lacuna [meaning gap] in the act, which also appears in the rules, in that neither covers the type of operations conducted by the applications.

Potgieter said while the amendments had been agreed upon in 2014, it had yet to be introduced formally.

"Suffice to say that this unwholesome situation would in all likelihood have been averted if the applicants had approached SARS for clarity and guidance prior to and not two years after the commencement of the bunkering operations," the court noted, however.

Potgieter also said there had been an immense economic loss while the vessels were detained and interrupted.

"The estimated loss presently suffered while the [bunkering] operations are interrupted is stated to amount to approximately R300 million per month. SARS has estimated that the loss of revenue to the fiscus amounts to R7 billion."

News24 previously reported that, since 2021, nearly 6 200 vessels had visited Algoa to refuel their ships. Some 2 million metric tonnes of fuel are sold in the region each year.

Will bunkering continue?

According to Samsa, the resumption of bunkering operations is on track, with applications from Samsa and TNPA open for safety permits and licences. However, interested parties would need to ensure they comply with tax rules.

Samsa CEO Tau Morwe said: "We remind applicants that we are not the only regulator [...] They need to make sure that they are compliant with SARS. If that is in place, nothing prevents applicants or operators from conducting their operations. That is the status [of operations]."

In February, Samsa notified all shipping agents and port authorities that applications for permits were open and said it would process applications without delay.

As the marine authority, Samsa is responsible for issuing permits for offshore bunkering operations outside of port limits and ensuring bunkering operators meet safety standards to prevent pollution.

TNPA executive manager for legal and compliance, Justin Uren, said the ports authority was processing pending and new applications for bunkering operations.

All operators and bunker barges must have a licence from the ports authority for bunkering activities inside of port limits.

This is after a moratorium was placed on all new licences from TNPA pending the findings of an environmental risk assessment released in November last year.

The risk assessment aimed to investigate whether the refuelling will adversely impact the African penguin population on the St Croix Island. The region has had four oil spills related to bunkering since 2016, with three leading to the oiling of birds.

The deadline for public comments on the assessment was 22 January this year.

READ | African penguin under threat due to ship-to-ship refuelling in Algoa Bay, warn conservationists

Speaking about the risk assessment, Uren said TNPA would continue to engage with new operators and stakeholders to mitigate the environmental impact of ship-to-ship refuelling.

However, it is unknown whether the moratorium was lifted.

Maritime Business Chamber executive chairperson Unathi Sonti, meanwhile, is doubtful whether bunkering operations will continue with legislation still being finalised by SARS.

Sonti said that with no operations taking place since the detention of vessels last year, there is still confusion about how authorities will monitor it.

He said:

> The main problem is that offshore bunkering is not [officially] recognised by SARS. Even if they bring in new players and the licensing and permit applications are successful, if the operator does not meet SARS's requirements, they cannot operate.

Sonti also warned that authorising new bunkering operators would be difficult, with the country facing huge "reputational damage" since the SARS crackdown.

He said the country also missed opportunities to exploit the shipping crisis caused by the ongoing conflict in the Red Sea and the recent drought in the Panama Canal, with larger vessels being forced to travel along the Cape of Good Hope.

The number of ships passing the Cape of Good Hope has has nearly doubled, from 3 815 in 2023 to 7 078 this year. By comparison, the country's busiest port in Durban had fewer ships dock there during the same period, according to the Outlier.

Meanwhile, according to Bloomberg, bunker stops at Walvis Bay in Namibia and Port Louis in Mauritius have become increasingly popular for vessels amid the conflict.

Speaking about when there will be certainty for bunkering rules, Sonti said that SARS was only likely to finalise tax rules within four to five months.

Docking in Durban

Durban's port has not experienced an inc
arrivals despite the ongoing crisis in the

Source: **Transnet National Ports Authority Cargo statistics** (monthly)

(Supplied/The Outlier)

Supplied

**Heron Marine and SARS did not comment on questions received by News24.*

**News24 did send questions to TNPA regarding the environmental risk assessment and the moratorium placed on new licences. Their comments will be added once received.*

Annexure 2

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

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Ref: EDMS MCE245325

Ms Nina Braude
Biodiversity Law Centre NPC
18A Ascot Road
KENILWORTH
7708

Email: nina@biodiversitylaw.org

Dear Ms Braude

LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER

I refer to your letter of 16 May 2024.

In your correspondence, you requested information regarding the involvement of the Department of Forestry, Fisheries and the Environment (DFFE) in Transnet National Ports Authority's (TNPA) Environmental Risk Assessment (ERA) process; details on the DFFE's engagements with the South African Maritime Authority (SAMSA); and the steps to be taken by the DFFE to regulate the environmental impacts of bunkering and ship-to-ship transfer (collectively STS bunkering).

In respect of the ERA, this was commissioned by TNPA and the DFFE was a commenting authority in this process. The DFFE provided its comments on numerous occasions. Insofar as you seek clarification that the "risk assessment" to which I referred to in my previous correspondence was the TNPA ERA, I can confirm that this is the case.

The DFFE attended the SAMSA hosted offshore regulators meeting on 21 February 2024. The purpose of this meeting was to engage authorities following its announcement that the SAMSA Board had decided to lift the moratorium and to process applications in terms of section 21(1)(b) of the Marine Pollution (Control and Civil Liability) Act, 1981 (Act No 6 of 1981) pertaining to offshore operations in Algoa Bay and other potential areas. The final ERA Report was thereafter made available to the DFFE on 11 April 2024.

The DFFE will further engage on the bunkering related issue with TNPA and SAMSA. It should, however, be noted that offshore bunkering operations are currently suspended pending investigations

LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER

by the South African Revenue Services (SARS).

As a result of the removal of the environmental aspects from SAMSA's Code of Good Practice, the DFFE is in the process of developing regulations to address the environmental impacts of bunkering which the DFFE intends, in due course, to publish for public comment under the National Environmental Management: Integrated Coastal Management Act, 2008. This decision to develop regulations would have been communicated to stakeholders at the Offshore Environmental Working Group and the Offshore Operators Stakeholders Forum meetings scheduled for March 2024. However, as you are aware, these meetings were cancelled. The listing of bunkering and ship-to-ship transfer as an activity under section 24(2) of the National Environmental Management Act, 1998, is still under consideration.

We look forward to your input on the Draft Regulations once published for public comment.

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT
DATE: 15/6/2024

Annexure C

14 November 2024

TO:	**Minister of Forestry, Fisheries and the Environment** Honourable Dion George	Minister@dffe.gov.za BMbuli@dffe.gov.za LLevendal@dffe.gov.za
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COPY TO:	**Transnet National Ports Authority** Adv Phyllis Difeto, Acting Chief Executive Officer Captain Rufus Lekala Captain Thulani Dubeko Ms Zimasa Sani	Phyllis.Difeto@transnet.net Washiela.Jacobs@transnet.net Nagamso.Nabe@transnet.net Rufus.Lekala@transnet.net Thulani.Dubeko@Transnet.net Zimasi.Sani@transnet.net
COPY TO:	**South African Maritime Safety Authority** Mr Tau Morwe, Chief Executive Officer	tmorwe@samsa.org.za mndlozi@samsa.org.za vkeller@samsa.org.za
FROM:	**BIODIVERSITY LAW CENTRE**	kate@biodiversitylaw.org nina@biodiversitylaw.org

Total pages:	5 [37 including annexures]	Our ref:	BLC/Penguins1/011
		Your ref:	MCE 222068; MCE231641; MCE245325

Dear Minister George

RE: LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER

1. We refer to our correspondence dated 16 May 2024, and the response received from your office dated 18 June 2024 (**Response**). We attach both letters for ease of reference as "**Annexure 1**" and "**Annexure 2**" respectively.

2. In our letter, we set out some of the history of our engagements with your office, the Transnet National Ports Authority (**TNPA**) and the South African Maritime Safety Authority (**SAMSA**) in relation to offshore bunkering and ship-to-ship fuel transfer (referred to here as "**STS Bunkering**"). In doing so:

   2.1. We referred to previous correspondence concerning the absence of proper regulation of STS Bunkering which has been acknowledged, from its inception in 2016, as having significant environmental impacts in terms of oil and other contaminants, and since at least 2022[1] as having significant impacts on noise pollution in Algoa Bay with consequent negative impacts on the African Penguin breeding colonies within this sensitive environment.

   2.2. We also referred to developments during the period February to April 2024 which indicated that SAMSA (and TNPA) appear to have lifted the moratorium on the issuance of new STS Bunkering operator licences. In this regard, we noted that the moratorium had been imposed in April 2019 due to environmental concerns and that pre-conditions for it being lifted were (a) completion of an environmental risk assessment (**ERA**); and (b) publication of codes of practice by SAMSA. We noted that neither the TNPA's STS Bunkering ERA, nor SAMSA's codes of practice had been finalised, which meant the pre-conditions for lifting the moratorium had not been met at the time of SAMSA's announcement.

   2.3. We referred to the specific obligations placed on your office under domestic and international law regarding the protection of threatened species, which include the African Penguin.

   2.4. Finally, we called upon the incumbent of your office to engage with the Minister of Transport to ensure that STS Bunkering did not breach the State's constitutional and international obligations regarding environmental protection, the prevention of pollution and environmental degradation, and ecologically sustainable development and use of natural resources.

<u>Potential interventions and remedies discussed to date</u>

3. To date, we have called upon your office to employ the following regulatory tools to address the environmental risks posed by STS Bunkering:

   3.1. listing STS Bunkering as an activity which may not commence without authorisation pursuant to section 24(2) of the National Environmental Act, 107 of 1998 (**NEMA**);

   3.2. issuing a coastal protection notice in terms of section 59 of the National Environmental Management: Integrated Coastal Management Act, 24 of 2008 (**NEM:ICMA**),

[1] Pichegru *et al*.

alternatively, listing STS Bunkering as a prohibited activity in terms of section 57(2) of the National Environmental Management: Biodiversity Act, 10 of 2004 (**NEM:BA**) with particular regard to the risks to the endangered African Penguin breeding colonies of St Croix and Bird Islands as well as the sensitivity of the Algoa Bay ecosystem;

3.3. co-operating with SAMSA and TNPA to ensure that:

3.3.1. TNPA's environmental risk assessment (**ERA**) into STS Bunkering which was conducted during 2023 is robust, publicly available and results in meaningful management outcomes; and

3.3.2. SAMSA's STS Bunkering Codes of Practice appropriately include environmental checks, requirements for environmental monitoring, mitigation measures and reflected best international practice in respect of maritime regulation.

4. Your office has also mooted the options of conducting a strategic environment assessment (**SEA**) for purposes of STS Bunkering site selection and the development of norms and standards applicable to STS Bunkering. Moreover, the Response indicated that:

4.1. the TNPA ERA had been finalised and made available to the DFFE on 11 April 2024;

4.2. the DFFE would engage further with TNPA and SAMSA in relation to STS Bunkering; and

4.3. the DFFE is developing regulations under NEM:ICMA to address the environmental impacts of STS Bunkering.

5. To date, while noise pollution generated as a consequence of STS Bunkering has been raised as an important environmental issue, there has been no specific attention paid to the proper regulation of marine noise pollution. We draw your attention to the significant regulatory gaps pertaining to marine noise pollution – one of the key consequences of increased use of the maritime zone highlighted by the issues relating to STS Bunkering – and an area requiring your urgent intervention.

6. We note further, that subsequent to our previous exchange of correspondence:

6.1. On 1 October 2024, we addressed correspondence to the office of the Minister of Transport, in which you were copied, addressing various concerns pertaining to STS Bunkering. Our correspondence, *inter alia,* called upon the Honourable Minister of Transport to engage with yourself and the DFFE to ensure proper environmental regulation, assessments and protections were pursued in relation to all maritime activities – including STS Bunkering and the related activities of port and maritime industry expansion.

6.2. A copy of the final TNPA ERA was obtained in early October 2024 pursuant to a request by a member of the Offshore Environmental Working Group to SAMSA under the Promotion of Access to Information Act, 2 of 2000. We draw your attention to the summary findings which, *inter alia*, recommend discontinuing STS Bunkering at Anchorage 2 due to the impact of underwater noise on the African Penguin population of St Croix Islands; a general speed limitation for vessels entering and leaving Algoa Bay

and a host of critical measures to ensure the adequacy of safety and emergency response. We note that the TNPA ERA has, to date, not been formally circulated to interested and affected parties.

6.3. On 28 October 2024, the conservation status of the African Penguin was uplisted from Endangered to Critically Endangered by the International Union for the Conservation of Nature.

Request for Confirmation

7. We now request an update regarding the above and would appreciate specific confirmation of the following:

7.1. What engagements the DFFE has had with TNPA and SAMSA regarding STS Bunkering during the course of 2024;

7.2. Whether the DFFE will encourage TNPA to formally publish the ERA and ensure it is circulated to all interested and affected parties as required by the constitutional principles of accountability and transparency as well as the environmental management principles relevant to all environmental decision-making which are articulated in section 2 of NEMA (and if not, why not);

7.3. The reasons for addressing environmental impacts of STS Bunkering by means of regulations under NEM:ICMA;

7.4. What progress has been made towards developing regulations under NEM:ICMA and the timing of publication of such regulations for comment;

7.5. Whether the DFFE is still considering the possibility of listing STS Bunkering as an activity requiring environmental authorisation in terms of the EIA Regulations, 2014, and NEMA (and if not, the reasons for excluding this possibility);

7.6. Whether the DFFE is still considering the possibility of conducting a SEA for purposes of STS Bunkering site selection (and if not, the reasons for excluding this possibility);

7.7. Whether your office is considering the issuance of a coastal protection notices in terms of section 59 of NEM:ICMA (and if not, the reasons for excluding this possibility);

7.8. Whether the DFFE is considering the issuance of a notice in terms of section 57(2) to declare STS Bunkering a prohibited activity in light of the endangered status of the African Penguin and Algoa Bay's sensitive ecosystem (and if not, the reasons for excluding this possibility); and

7.9. What steps your office and the DFFE are taking to regulate the harmful impacts of noise pollution of the marine and coastal environment.

Co-operation required to realise State's international and constitutional obligations

8. Finally, we call upon you to engage with the Minister of Transport, TNPA and SAMSA in line with the principles of co-operative governance to address the environmental impacts associated, not only with STS Bunkering, but with maritime transport and protection of our marine and coastal zones more generally.

9. In this regard, we note that the assignment of the suite of legislation giving effect to the various conventions pertaining to maritime activity issued by the International Maritime Organisation is assigned by domestic legislation to the Transport Portfolio. In this regard, the Transport cluster (including TNPA and SAMSA) has certain overlapping competences with your own portfolio and the work of your Department in ensuring protection of the maritime and coastal environment.

10. Moreover, the obligations to address climate mitigation and adaption measures under the United Nations Climate Change Convention and Climate Change Act, 22 of 2024 as well as pursuant to the United Nations Law of the Sea[2] must inform the manner in which both the Forestry, Fisheries and Environment portfolio and its Transport counterpart address matters such as securing ecologically sustainable development and use of the coastal and maritime zones and the constitutional obligations placed on your departments to prevent pollution of our seas and coasts, degradation of our marine and coastal ecosystems, to promote conservation of our marine environment as a whole – and to ensure the protection of our marine and coastal environment for the benefit of present and future generations.

11. We trust that you will engage with our queries in paragraph 7 above as a matter of urgency, noting the actions of SAMSA and TNPA which appear to contemplate recommencement of STS Bunkering.

12. We look forward to your response and to engaging constructively with you further in ensuring our marine and coastal environment is protected.

Yours faithfully,

BIODIVERSITY LAW CENTRE NPC

***Per* Nina Braude**

[2] See in particular, International Tribunal for the Law of the Sea, *Advisory Opinion on Request submitted to the Tribunal by the Commission of Small Island States on Climate Change and International Law* (Case No. 31), 21 May 2024, available online <https://www.itlos.org/fileadmin/itlos/documents/cases/31/Advisory_Opinion/C31_Adv_Op_21.05.2024_orig.pdf> accessed 7 August 2024.

Annexure 1

Date: 16 May 2024

TO:	**Minister of Forestry, Fisheries and the Environment**	
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AND TO:	**Deputy Director-General: Regulatory Compliance and Sector Monitoring**	
	Ms Vanessa Bendeman	VBendeman@dffe.gov.za MSeptember@dffe.gov.za
AND TO:	**Deputy Director-General: Oceans and Coasts**	
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COPY TO:	**South African Maritime Safety Authority**	
	c/o Chief Executive Officer	tsu@samsa.org.za
FROM:	**BIODIVERSITY LAW CENTRE**	kate@biodiversitylaw.org nina@biodiversitylaw.org
Total pages:	5 [30 including annexures]	Our ref: BLC/Penguins1/010 Your ref: MCE 222068; MCE231641

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Dear Minister Creecy

RE: LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER

1. We refer to your correspondence dated 1 November 2022 (**November Letter**) and 6 February 2024 (**February Letter**) as well as our correspondence dated 5 June 2023 and 20 September 2023 and address this response on behalf of the Biodiversity Law Centre, SANCCOB and BirdLife South Africa.

2. As we pointed out in our previous correspondence:

    2.1. Your November Letter indicated that the Department of Forestry, Fisheries and the Environment (**DFFE**) was investigating the desirability of listing offshore bunkering and ship-to-ship transfer (collectively, **STS Bunkering**) as an activity which may not commence without authorisation pursuant to section 24(2) of the National Environmental Act, 107 of 1998 (**NEMA**), in addition to considering whether a strategic environmental assessment was an appropriate tool for site selection.

    2.2. In this same correspondence, you indicated that the DFFE had been working with the South African Maritime Safety Authority (**SAMSA**) and Transnet National Ports Authority (**TNPA**) "*to ensure the veracity of the [TNPA] risk assessment as well as to ensure that SAMSA's Codes of Practice, as a minimum incorporate certain environmental aspects of the activity"*.

    2.3. You again indicated in the "*Note to Editors*" accompanying publication of your statement issued on 4 August 2023 in respect of release of the "*Report of the International Review Panel Regarding Fishing Closures Adjacent to South African Penguin Breeding Colonies and Declines in the Penguin Population"* that you were undertaking a risk assessment of oil bunkering in Algoa Bay by DFFE and its "conservation partners".

3. In our September correspondence we sought clarification, *inter alia*, regarding whether this "risk assessment" was the study currently being undertaken by the TNPA and the DFFE's role in this process. To date, we have not received the clarification requested.

4. In your February Letter, you responded to our letter addressed on 5 June 2023 (without reference to our September correspondence), indicating, *inter alia*, that:

    4.1. the DFFE was "*engaging with other role-players… on an approach to mitigate the potential impact of bunkering operations, beyond what is already in place or being developed, such as the SAMSA Bunker Codes of Practice and the TNPA Environmental Risk Assessment"*;

4.2. the DFFE would be in a "*better position to consider the measures"* of issuance of a coastal protection notice in terms of section 59 of the National Environmental Management Integrated Coastal Management Act, 24 of 2008 and section 57(2) of NEMA (as well as other potential measures) once the TNPA Environmental Risk Assessment (**TNPA ERA**) had been finalised; and

4.3. it would be "premature" *to take such measures "without being in possession of all the relevant facts and information"*.

5. Accordingly, we have received no response regarding whether the DFFE has commenced the process of examining whether STS Bunkering should be included as a Listed Activity, as contemplated by the EIA Regulations, 2014, nor any clarification regarding engagements between the DFFE and other stakeholders, including SAMSA, TNPA and the consultants engaged with the TNPA ERA.

6. This non-response and the apparent inaction of the DFFE is of increasing concern, given that:

6.1. On 13 February 2024, TNPA's environmental consultants indicated that comments on the draft Environmental Risk Assessment were still being collated; that the comments and updated ERA Report had not yet been provided to TNPA; and that TNPA had not yet clarified next step. By 10 May 2024, it appears that comments had been collated, however, there was no further clarity regarding updating of the draft ERA Report or next steps. The relevant chain of correspondence is attached, marked "**1**".

6.2. On 16 February 2024, SAMSA issued notice MN 01-24(C) entitled "*SAMSA Bunkering Code of Practise [sic]"* and confirmed SAMSA's intention to "*release the procedures and requirements wrt the implementation of the Code of Practice for Bunkering in South African waters"* together with a draft SAMSA Bunkering Code of Practice (**2024 Code**) for comment.

6.3. As indicated in our comments submitted to SAMSA on 8 March 2024 (attached marked "**2**"), the 2024 Code significantly rolled back on the inclusion of environmental considerations which had been apparent in earlier draft codes dated 2022; appeared to ignore the conduct of the TNPA ERA (or its findings); did not appear consonant with representations from your office regarding the co-operative process that was underway; and was in other material respects not fit for purpose.

6.4. The Offshore Environmental Working Group meeting scheduled for 8 March 2024 was cancelled on 4 March 2024, while the Offshore Operators Stakeholders Forum (**OOSF**) scheduled for 22 March 2024 was initially rescheduled for 8 March 2004 and then abruptly cancelled on 7 March 2024. In neither case were reasons provided for the cancellations, and neither meeting has been rescheduled. Both meetings were to have provided updates

on the TNPA ERA while the OOSF was to specifically discuss the status of the moratorium. The cancellation of these meetings deviates markedly from the approach to co-operative governance and emphasis on stakeholder participation which has been pursued to date and, once again, runs contrary to your office's emphasis on co-operation.

6.5. At a roundtable convened by SAMSA on 30 April 2024, and including representations from various government stakeholders, including SAMSA, TNPA and the DFFE, the SAMSA CEO confirmed that the moratorium on new STS Bunkering licences had been lifted pursuant to a decision of the SAMSA Board and, it appears, at the instance of the Minister of Transport – and that two new licences were being processed.

6.6. In a news report dated 13 May 2024, marked "**3**", "spokespeople from SAMSA and TNPA both confirmed the processing of new bunkering licences

7. In the circumstances, it appears that notwithstanding the indication from your offices that it is premature to implement measures to ensure that environmental safeguards are in place to mitigate against harms of STS Bunkering, this is not the case: SAMSA and the Minister of Transport have clearly determined that STS Bunkering will recommence, notwithstanding the finalisation or otherwise of the TNPA ERA.

8. This is particularly so given the evidence available regarding the impacts of oil and noise pollution on the sensitive Algoa Bay environment – information which is already available (and acknowledged) by the DFFE and not subject to doubt. Also beyond doubt is the critical status of the African Penguin – which has two of its seven largest remaining breeding colonies in Algoa Bay. As pointed out in our September Letter, it was confirmed that in 2023, there were only 783 breeding pairs of African Penguins on St Croix Island – in other words a 38% decrease since the 2022 count and below the critical threshold of 1,000 breeding pairs.[1] The African Penguin is already classified as Endangered by the International Union for Conservation of Nature (**IUCN**) and Threatened or Protected Marine Species Regulations (**TOPSM**).[2] The African Penguin is subject to international protections in terms of various treaties, including CITES, the Convention on Migratory Species Convention and the African Eurasian Waterbird Agreement and its threatened status requires heightened conservation obligations in terms of the National Environment Management: Biodiversity Act, 10 of 2004 (**NEM:BA**).

9. In the of context of these legal obligations – as well as the state of knowledge regarding the impact of STS Bunkering on the African Penguin and SAMSA's recommencement of STS Bunkering activities, it is certainly <u>not</u> premature to take steps to institute measures in terms of either section 59 of the National Environmental Management: Integrated Coastal Management Act, 2008 (**NEM:ICMA**) or section 57(2) of NEM:BA.

[1] DFFE: Unpublished data.
[2] GN 476 in *Government Gazette* 40875 of 30 May 2017.

It is, similarly, not premature to initiate the process regarding declaring STS Bunkering to be a Listed Activity as contemplated by the EIA Regulations, 2014. This is particularly so, given the risk averse and cautious approach required under NEMA.

10. We would also urge your office to immediately engage with the Minister of Transport regarding the imperatives of ensuring that STS Bunkering does not breach the State's constitutional and international obligations regarding environmental protection; the prevention of environmental degradation and pollution; and ensure that use of the environment is consistently ecologically sustainable.

11. We look forward to your response regarding:

    11.1. the involvement of the DFFE and your office in the TNPA ERA process;

    11.2. your engagements with SAMSA and the Minister of Transport regarding the recommencement of STS Bunkering activities; and

    11.3. the immediate steps to be taken by your office and the DFFE in terms of the powers afforded under NEM:ICMA, NEM:BA and NEMA to intervene to ensure that South Africa's international and constitutional obligations are maintained and the right to have an environment that is protected for present and future generations is upheld.

Yours faithfully,

BIODIVERSITY LAW CENTRE NPC

***Per* Nina Braude**

From: Nina Braude
Sent: Friday, 10 May 2024 14:55
To: 'Donavan Henning'
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ; Kate Handley
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Tracking:

Recipient	Delivery	Read
'Donavan Henning'		
mdelarue@prdw.com		
Zimasa.Sani@transnet.net		
Thulani Dubeko Transnet National Ports Authority NGQ		
Kate Handley	Delivered: 2024/05/10 14:56	Read: 2024/05/11 13:55

Dear Donavan

Many thanks for your prompt response which we appreciate.

Could you confirm whether the draft ERA was amended in light of the comments received and, if so, when this will be made available?

In addition, could you confirm the next steps with TNPA and revert to all stakeholders who, we are sure like us, would appreciate an update.

Kind Regards
Nina

From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Friday, May 10, 2024 1:12 PM
To: Nina Braude <nina@biodiversitylaw.org>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: Re: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

Thank you for your email.

The Comments and Responses Report was updated with all comments received on the draft Environmental Risk Assessment and Management Plan.

TNPA will need to advise on the status and way forward.

Regards

Donavan Henning

Nemai Consulting

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Mobile : +27 82 891 0604

Email : donavanh@nemai.co.za

Address : 147 Bram Fischer Drive Ferndale, 2194, South Africa

Postal Address : PO Box 1673, Sunninghill, 2157

From: Nina Braude <nina@biodiversitylaw.org>
Sent: 10 May 2024 08:49
To: Donavan Henning <DonavanH@nemai.co.za>
Cc: mdelarue@prdw.com <mdelarue@prdw.com>; Zimasa.Sani@transnet.net <Zimasa.Sani@transnet.net>; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Further to your update sent below on 13 February 2024, we would appreciate your confirming whether all comments have been captured and the document submitted to TNPA. In addition, could you let us know the status of the ERA and the "way forward" contemplated by TNPA.

We would very much appreciate your assistance.

Kind Regards
Nina

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From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Tuesday, February 13, 2024 2:21 PM
To: Nina Braude <nina@biodiversitylaw.org>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

We are in the process of capturing all comments received on the draft Environmental Risk Assessment and Management Plan in a Comments and Responses Report and updating the overall document, which will be submitted to TNPA.

TNPA is to advise on the way forward thereafter.

Regards
Donavan Henning

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Address : 147 Bram Fischer Drive Ferndale, 2194, South Africa
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From: Nina Braude <nina@biodiversitylaw.org>
Sent: Monday, February 12, 2024 10:05 AM
To: Donavan Henning <DonavanH@nemai.co.za>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Following the submission of our comments on 31 January 2024 and your acknowledgment of receipt, we would appreciate your confirming the next steps in the ERA process as well as the relevant timelines.

Kind Regards
Nina Braude

From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Thursday, February 1, 2024 7:26 AM
To: Nina Braude <nina@biodiversitylaw.org>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ

<Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

Thank you very much. We acknowledge receipt of your comments.

Regards
Donavan Henning

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From: Nina Braude <nina@biodiversitylaw.org>
Sent: Wednesday, January 31, 2024 3:00 PM
To: Donavan Henning <DonavanH@nemai.co.za>
Cc: mdelarue@prdw.com; Zimasa.Sani@transnet.net; Thulani Dubeko Transnet National Ports Authority NGQ <Thulani.Dubeko@transnet.net>; Kate Handley <kate@biodiversitylaw.org>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Please see attached the Biodiversity Law Centre's comments on the TNPA ERA for your consideration.

Kind Regards
Nina

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NPO No.264-246 and a Law Clinic registered with the Legal Practice Council
Centre for Biodiversity Conservation, Kirstenbosch, Newlands, 7735

From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Thursday, January 11, 2024 5:02 PM
To: Nina Braude <nina@biodiversitylaw.org>; mdelarue@prdw.com; Zimasa.Sani@transnet.net
Cc: Kate Handley <kate@biodiversitylaw.org>; Nicky Stander <Nicky@sanccob.co.za>; Monica Stassen

<monica@sanccob.co.za>; Katta Ludynia <katta@sanccob.co.za>; Melissa Lewis <Melissa.Lewis@birdlife.org.za>; Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

Thank you for your well wishes. Also hope that you have a wonderful 2024.

We had a team meeting this afternoon with TNPA and it was confirmed that you can receive an extension until 31 January 2024. This is to allow for the subsequent completion of the project within the contract period.

Regards
Donavan Henning

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Postal Address : PO Box 1673, Sunninghill, 2157

From: Nina Braude <nina@biodiversitylaw.org>
Sent: Wednesday, January 10, 2024 4:11 PM
To: Donavan Henning <DonavanH@nemai.co.za>; mdelarue@prdw.com; Zimasa.Sani@transnet.net
Cc: Kate Handley <kate@biodiversitylaw.org>; Nicky Stander <Nicky@sanccob.co.za>; Monica Stassen <monica@sanccob.co.za>; Katta Ludynia <katta@sanccob.co.za>; Melissa Lewis <Melissa.Lewis@birdlife.org.za>; Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Happy New Year! We hope you had a restful break.

Many thanks for confirming receipt. We wondered whether you had received feedback from the project team in respect of our request (sent on behalf of ourselves as well as SANCCOB and BirdLife South Africa) to provide comments by 9 February 2024.

Kind Regards
Nina

From: Donavan Henning <DonavanH@nemai.co.za>
Sent: Thursday, January 4, 2024 12:39 PM
To: Nina Braude <nina@biodiversitylaw.org>; mdelarue@prdw.com; Zimasa.Sani@transnet.net
Cc: Kate Handley <kate@biodiversitylaw.org>; Nicky Stander <Nicky@sanccob.co.za>; Monica Stassen <monica@sanccob.co.za>; Katta Ludynia <katta@sanccob.co.za>; Melissa Lewis <Melissa.Lewis@birdlife.org.za>;

Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Subject: RE: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Nina

We take note of your request to provide comments on the draft Environmental Risk Assessment and Management Plan by 9 February 2024. We are awaiting feedback on this matter from the project team and will advise in due course.

Regards
Donavan Henning

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From: Nina Braude <nina@biodiversitylaw.org>
Sent: Tuesday, December 12, 2023 10:48 AM
To: Donavan Henning <DonavanH@nemai.co.za>; mdelarue@prdw.com; Zimasa.Sani@transnet.net
Cc: Kate Handley <kate@biodiversitylaw.org>; Nicky Stander <Nicky@sanccob.co.za>; Monica Stassen <monica@sanccob.co.za>; Katta Ludynia <katta@sanccob.co.za>; Melissa Lewis <Melissa.Lewis@birdlife.org.za>; Alistair McInnes <alistair.mcinnes@birdlife.org.za>
Subject: Nelson Mandela Bay Offshore Bunkering and Ship to Ship Transfer Environmental Risk Assessment

Dear Donavan

Please find the attached correspondence for your attention.

Kind Regards
Nina

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BIODIVERSITY LAW CENTRE
LAW FOR NATURE

Date: 8 March 2024

TO: **South African Maritime Safety Authority**

Chairman of the Board submissions@samsa.org.za

FROM: **BIODIVERSITY LAW CENTRE** kate@biodiversitylaw.org
nina@biodiversitylaw.org

Total pages: 11 Our ref: BLC/Penguins1/009

COMMENTS: BUNKERING CODE OF PRACTICE

1. **Introduction**

1.1. We refer to the South African Maritime Safety Authority's (**SAMSA**) notice MN 01-24(C) issued on 16 February 2024 which is entitled "*SAMSA Bunkering Code of Practise* [sic]" and which states SAMSA's intention "*to release the procedures and requirements wrt the implementation of the Code of Practice for Bunkering in South African waters*" and the draft SAMSA Bunkering Code of Practice dated February 2024 (**2024 Code**).

1.2. The Biodiversity Law Centre (**BLC**) is a public interest law centre focused on protection of biodiversity and has been engaging with the Transnet National Ports Authority (**TNPA**), Minister for Forestry, Fisheries and the Environment (**Minister**) as well as SAMSA regarding its concerns about the impacts that offshore bunkering and ship-to-ship transfers have on marine ecosystems – in particular the sensitive Algoa Bay habitat and African Penguins which have been shown to be adversely affected by the impacts of offshore bunkering (**Bunkering**) and ship-to-ship fuel transfer activities (**STS Transfer**). We have previously made submissions regarding:

1.2.1. SAMSA's draft Bunkering Code dated September 2022 (**2022 Code**) (BLC comments dated 22 September 2022 referred to below as the "**2022 Submissions**"); and

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1.2.2. the TNPA's draft *Provisional of Specialist Services for Offshore Bunkering and Ship to Ship Transfer of Liquid Bulk in the Nelson Mandela Bay Ports: Environmental Risk Assessment & Management Plan* dated November 2023 (**TNPA ERA**) (BLC comments dated 31 January 2024).

1.3. This comment on the 2024 Code accordingly has regard to the TNPA ERA, 2022 Code as well as SAMSA's draft Bunkering Code dated October 2021 (**2021 Code**). We note that the 2024 Code deals only with Bunkering and not STS Transfers. At the outset, we flag this as an important omission, as it is clear that the two sets of activities are integrated in practice and that both are required for purposes of enabling the full operation of the offshore bunkering supply chain. Similarly, we flag that SAMSA's approach to regulating Bunkering without integration with quayside refuelling and fuel storage regulation, standards and guidelines presents a fragmented approach to regulation which is at odds with the need for integrated environmental management contemplated by South Africa's environmental management framework. We have not elaborated further on this omission but rather restricted the remainder of our submission to SAMSA's approach to Bunkering as expressed in the 2024 Code.

2. Summary of submissions regarding the 2024 Code

2.1. We have far-reaching concerns regarding SAMSA's authority to issue the 2024 Code at this time as well as the manner in which it has done so given the status of, and findings reported in, the TNPA ERA; previous work undertaken by SAMSA, together with the TNPA and Department of Forestry, Fisheries and the Environment (**DFFE**) in relation to the 2021 and 2022 Codes; the environmental management framework and principles governing all environmental decision-making and its effect on how SAMSA carries out its functions and fulfils its regulatory purpose; and the constitutional principles and requirements of co-operative government which bind SAMSA.

2.2. Critically, we note that SAMSA's mandate to "*ensure safety of life and property at seas; to prevent and combat pollution of the marine environment by ships; and to promote the Republic's maritime interests*"[1] necessarily requires its co-operation on environmental regulation with, *inter alia*, TNPA and DFFE. Further, it requires that SAMSA have regard to all international treaties, customary laws and guidelines relevant to South Africa's obligations and best practice in respect of pollution of the marine environment by ships as is consonant with South Africa's constitutional obligation to "*prevent ecological pollution*" as provided by section 24(b)(i) of the Constitution – as well as the additional constitutional obligations to protect the environment for the benefit of present and future generations expressed in section 24(b) through, *inter alia*, the securing of "*ecologically sustainable development*".

2.3. We contend that the 2024 Code does not properly consider the relevant set of principles, norms and obligations. Accordingly, the 2024 Code should be withdrawn

[1] South African Maritime Safety Authority Act, 5 of 1998 (**SAMSA Act**), s 3.

and SAMSA should take no further steps regarding the publication of Bunkering Codes or the lifting of the current moratorium on new bunkering operator licences, until such time as:

2.3.1. it has consulted with, and co-ordinated its regulation of these development activities, with the TNPA, DFFE and any other relevant organs of state;

2.3.2. the TNPA ERA is completed; its findings publicised and subjected to public consultation; confirmation that its findings are environmentally tenable and robust; a comprehensive approach to inter-governmental co-operation resulting from such findings is published, subjected to public consultation and confirmed as constitutionally and scientifically justified; and such inter-governmental co-operation pays specific attention to preventing ecological pollution and securing ecologically sustainable development; and

2.3.3. SAMSA has given proper consideration to whether it is in fact able to grant offshore bunkering permits in terms of the Marine Pollution (Control and Civil Liability) Act, 6 of 1981 (**Civil Liability Act**) when read with the environmental principles in section 2 of the National Environmental Management Act, 107 of 1998 (**NEMA**) which apply to all decisions effecting the environment.

2.4. We urge SAMSA to engage with the DFFE to address the consequences of the failure to have Bunkering and STS Transfer included as listed activities for the purposes of application of Chapter 5 of NEMA and, in particular, the Environmental Impact Assessment Regulations, 2014 (**EIA Regulations**). In this regard, we note that the omission of these development activities from the EIA Listings places an undue burden on SAMSA to adhere to its national and international obligations to prevent and combat pollution from ships while leaving it at risk of authorising activities which are a breach of everyone's environmental rights to have the environment protected for the benefit of present and future generations.

3. It is premature for SAMSA to be announcing the processing of new bunkering applications given the status of the TNPA ERA

3.1. SAMSA, together with TNPA, DFFE, the Department of Transport (**DoT**) and "industry stakeholders" imposed a moratorium on the issuance of new bunkering licences in 2019.[2] We understand that this moratorium was motivated by concerns regarding the environmental impacts and environmental regulation of Bunkering and STS operations.

[2] Correspondence from TNPA to BLC dated 25 October 2023 including responses from SAMSA regarding the origin of the moratorium and referring to the decision of the Offshore Operators' Stakeholder Forum meeting dated 9 April 2019.

3.1.1. The TNPA ERA records that the moratorium on new bunkering licences will remain in place "*until the completion of the ERA and consideration of the findings"*.[3] (See also the statements regarding the background to the moratorium and 2022 Code reflected in MIN10-22 addressed at paragraph 3.1.1 below).

3.1.2. Subsequent to the provision of the BLC's submissions on 31 January 2024, the BLC followed-up on the next steps and timelines relating to the TNPA ERA process with Nemai Consulting (**Nemai**). On 13 February 2024, Nemai advised that comments received on the TNPA ERA were being compiled and updates being attended to for submission to TNPA. We were further advised that TNPA would advise on next steps once in receipt of this Nemai's update. To date, we have heard nothing further. It thus seems clear that the TNPA ERA remains under consideration and has by no means been "completed".

3.1.3. We note that the TNPA ERA has been commissioned with the recognition that "*STS bunkering operations pose risks different and greater than those normally expected for standard shore-to-ship re-fuelling operations*" and that TNPA commissioned the ERA "*to inform the regulation of STS transfers and bunkering within port limits….".*[4] While we appreciate that these are TNPA's objectives, it is contrary to the principles of co-operative government, and also an approach to effective management of dynamic ecosystems such as ocean spaces, for SAMSA to operate independently of TNPA in considering the appropriate regulatory environment and publishing regulatory guidelines such as the 2024 Code.

3.1.4. In particular, while SAMSA has purported to explain that its jurisdiction over ocean-spaces extends further into South Africa's exclusive economic zone than that of the TNPA, the marine ecosystem pays no regard to such jurisdictional distinctions (to the extent that SAMSA's interpretation of the legal position is correct). It is thus critical that SAMSA and TNPA co-ordinate their regulation of Bunkering and STS Transfer activities to give effect to the imperatives and principles of environmental regulation within the coastal waters, maritime spaces and maritime activities under South Africa's regulatory control. These include the principle in section 2(4)(r) of NEMA which specifies that "*Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure".* Marine areas where offshore Bunkering activities are contemplated are just such ecosystems. This is illustrated by

[3] ERA p 8.
[4] TNPA ERA p 1.

the draft Marine and Coastal Environmental Risk Assessment included with the TNPA ERA (**MCERA**) which acknowledged that Algoa Bay was a formally recognised vulnerable ecosystem, contained a reef system recognised as vulnerable, included important estuaries and was subject to particular development pressure.[5]

3.2. It is in this context that we draw SAMSA's attention to its publication of the draft 2024 Code as premature. It is certainly entirely inappropriate to signal that SAMSA intends to lift the moratorium on bunkering operator licences by processing new bunkering operator applications, as has been suggested by MN 01-24 (C).

4. The 2024 Code is inconsistent with SAMSA's approach to developing codes to regulate Bunkering and STS Transfer since 2021

4.1. By way of example, MIN10-22 which announced the comment period for the 2022 Code, expressly stated that oil spills occurring between 2016 and 2019, resulting from Bunkering activities had led government to decide "*to review all policies, procedures and processes for the application, approval and management of these activities*".[6]

4.2. MIN10-22 also stated that conditions for lifting the moratorium in Algoa Bay were both completion of the TNPA ERA and publication of the Codes of Practice (and that the latter was also a condition for lifting the moratorium on bunkering elsewhere in South Africa).

4.3. The 2022 Code was clearly published in an attempt to address environmental considerations and as a response to the recognition that Bunkering posed significant environmental risks. While the BLC's 2022 Submissions noted critical difficulties with the 2022 Code, this 2022 draft did represent a consistent attempt to meet the objectives articulated by SAMSA. It is thus concerning, that the 2024 Code appears to roll back key aspects of environmental regulation mooted in this earlier draft including the chapters addressing Noise and Environmental Risk Management Plans.

4.4. We draw SAMSA's attention to the requirement that regulatory interventions, such as the 2024 Code, must have a rational connection to the purpose for which they are initiated. It is clear from the text of the 2024 Code that these are a continuation of SAMSA's earlier efforts. Accordingly, they must be read as an attempt to give effect to the purpose of management of the self-same environmental risks previously identified (and which have also given rise to the TNPA ERA). It is simply inconceivable that the 2024 Code could reverse key environmental protections. Removing these sections which appeared in the 2022 Code (rather than refining and improving them) is a clear indication that the 2024 Code is not rationally connected with its environmental risk management purpose.

[5] MCERA, pp 10, 26, 58, 77-78, 78-79.
[6] MIN 10-22, para (1).

4.5. In addition to inconsistency with its purpose, the 2024 Code reflects a departure from the clear approach to co-operative government reflected in previous drafts. We flag that MIN 10-22 and the 2022 Code expressed a clear approach to co-operative government between DFFE, SAMSA, TNPA and the Department of Transport[7] as well as a sound approach to public participation. By way of example, the 2022 Code clearly attempted to consider inputs regarding noise pollution from ships[8] and, in this regard, made significant strides towards proper regulation since publication of the 2021 Code (albeit still reflecting some major difficulties).

4.6. It is concerning that the 2024 Code takes a step backwards. Not only does this undermine the purpose and objects of the very idea of "Codes" themselves, but it also suggests a flawed procedure and raises questions regarding wasted time, effort and expenditure developing the Bunkering guidelines since 2021 (if not earlier). This is contrary to the principles of accountability applicable to all organs of state and is also contrary to the international obligation placed on South Africa in terms of the IMO Instruments Implementation Code (III Code), Part 1, clauses 11 to 14 to continually review and improve South Africa's performance in terms of, *inter alia*, environmental protection.[9]

5. The 2024 Code fails to give effect to SAMSA's constitutional, statutory and treaty obligations pertaining to the environment and prevention and combatting of pollution

5.1. Section 24(b) of the Constitution provides that everyone is entitled to have the environment protected for the benefit of present and future generations through a range of measures, including legislation, which prevent pollution and environmental degradation; promote conservation; and secure ecologically sustainable development. Government has an obligation to respect, protect, promote and fulfil this right – and thus attracts obligations to prevent pollution and ecological degradation; promote conservation and secure ecologically sustainable development. This is an obligation borne by all organs of state, including SAMSA, when engaging in activities affecting the environment. Bunkering is self-evidently such an activity. As indicated above, this is acknowledged by SAMSA.

5.2. The 2024 Code correctly identifies that one of SAMSA's objectives is to "*prevent and combat pollution of the marine environment by ships*".[10] Similarly, the 2024 Code correctly identifies that SAMSA is required to implement the Marine Pollution (Civil and Control Liability) Act, 6 of 1981 (**Civil Liability Act**) and Merchant Shipping (Civil Liability Convention) Act, 25 of 2013 which are relevant to SAMSA's regulation of

[7] See 2022 Code p 7; 14.
[8] MIN10-22, "Draft Codes" para (3)
[9] IMO, Resolution A. 1070(28), *IMO Instruments Implementation Code (III Code*) adopted on 4 December 2013.
[10] SAMSA Act, s 3(b).

maritime oil and hazardous discharge. However, these two statutes are by no means the sole legislation relevant to SAMSA's obligations vis-à-vis Bunkering.

5.3. Most obviously, SAMSA has omitted the Marine Pollution (Prevention of Pollution from Ships) Act, 2 of 1986 (**Prevention of Pollution Act**) and obligations flowing from this Act's domestication of the International Convention for the Prevention from Ships, 1973 as amended by the 1978 Protocol (**MARPOL**). SAMSA, however, is the primary South African implementing authority. While certain of the requirements in the checklists attached to the 2024 Code appear to reflect certain of the domestic and international obligations under the Prevention of Pollution Act, MARPOL and the related International Maritime Organisation (**IMO**) instruments, the 2024 Code would benefit from express reference to these instruments. This would not only ensure that all relevant statutory and international obligations are accounted for and SAMSA itself is held accountable for implementing its mandate, but also so that Bunkering guidelines are properly situated within their legal context and capable of being understood with reference to the various international standards which support the framework of maritime safety and pollution instruments which SAMSA must enforce.

5.4. Critically, however, the 2024 Code omits reference to:

5.4.1. section 24(b) of the Constitution which must provide the interpretive context for the Civil Liability Act, Prevention of Pollution Act and all SAMSA's pollution management objectives; and

5.4.2. NEMA which contains environmental management principles applicable to all environmental management decisions, and definitions of, *inter alia*, "pollution" which must inform SAMSA's interpretation of its powers and duties in relation to Bunkering regulation.

5.5. While the EIA procedures in NEMA do not yet apply to Bunkering activities, the environmental management principles set out in section 2 of NEMA do. These must be used in respect of all environmental decision-making, including decisions which SAMSA purports to make in terms of section 21 of the Control and Civil Liability Act and the decisions made in respect of regulation of Bunkering through instruments such as the 2024 Code. The 2024 Code clearly does not have regard to these principles – including the principle regarding particular consideration of marine ecosystems already referenced above, but also the critically important precautionary principle which is inherent to ensuring that all environmental management decisions are grounded in the best available science and take a risk averse and cautious approach taking into account scientific unknowns.[11] I expand on this below.

5.6. In addition, the definition of "pollution" in NEMA must inform how SAMSA interprets its statutory obligation to *"prevent and combat pollution of the marine environment by ships*". NEMA's definition of "pollution" includes *"noise, odours, dust or heat*" which

[11] NEMA, s 2(4)(a)(vii).

are emitted from any activity which has an impact, *inter alia*, on the *"composition, resilience and productivity of natural or managed ecosystems*".[12] Noise – and particularly underwater noise – therefore must fall within the scope of the "pollution" with which SAMSA is tasked with preventing and combatting. Further, SAMSA is not just tasked with stopping noise pollution. It is enjoined to "combat" or actively fight against it. In this regard, SAMSA

5.7. The 2022 Code acknowledged that prevention and combatting of underwater noise pollution fell within SAMSA's mandate. However, the relevant chapter has now been entirely removed (let alone updated to confirm with subsequent science, international obligations and best practice). In this regard:

5.7.1. We again draw attention to the evidence of significant and detrimental impacts of underwater noise associated with Bunkering on the African Penguin population of Algoa Bay. SAMSA will, by now be familiar with the relevant study led by L Pichegru, entitled *"Maritime traffic trends around the southern tip of Africa: Did marine noise pollution contribute to the local penguins' collapse?"*.[13] This was provided to SAMSA as an annexure to the BLC's 2022 Submissions and has since been provided to both TNPA and the DFFE by the BLC. We do not repeat the details of this study here, however, note that it indicated that the increase of bulk carriers, attracted by offshore Bunkering, had led to a major increase in ocean-based noise. This in turn appeared to be an important contributor to changes in African Penguin behaviour – including their foraging behaviour and these endangered seabirds' ability to forage effectively. This is critical as this has exacerbated difficulties experienced by the Algoa Bay African Penguins' in accessing their prey due to competition with the small pelagic purse-seine fishing industry. Accordingly, Bunkering has had a significant impact on further declines of the already-stressed African Penguin populations of Algoa Bay.[14]

5.7.2. These impacts have been acknowledged in the MCERA which also acknowledges a similar concern with behaviour responses to *"the non-impulsive noise emissions from in-transit marine traffic and from stationary bunkering operations"* in relation to the Indian Ocean humpback dolphin.[15] It also acknowledges the impacts of increased maritime-induced noise linked to Bunkering on other species. For example, it highlights that underwater explosions associated with bunkering activities could lead to the injury to fish with swim bladders (causing swim bladders to rupture with resulting damage to kidneys, liver and spleen) and injury to mammals

[12] NEMA, s 1(1).
[13] Pichegru et al "Maritime traffic trends around the southern tip of Africa – Did marine noise pollution contribute to the local penguins' collapse?" Science of the Total Environment 849 (2022) page 1.
[14] Pichegru et al, page 7.
[15] MCERA, p 157. See also TNPA ERA p 65 and 66.

(primarily trauma of various organs such as lungs, ears and the intestinal tract).[16] Despite its various deficiencies, the MCERA in fact indicated that even post-mitigation, underwater noise had a "very high" significance. This should be sufficient to indicate that Bunkering in Algoa Bay should not be permitted at all. It is likely that the same findings would arise in all South Africa's megadiverse coastal waters. Given this position, it is entirely untenable that the 2024 Code should not even contemplate regulation of noise impacts.

5.7.3. SAMSA is the key organ of state in South Africa which implements the various marine pollution and safety instruments associated with the International Maritime Organisation (**IMO**). We have already referred in this regard to MARPOL and SOLAS. The MARPOL annexures go beyond oil pollution and discharge of hazardous substances to expressly contemplate emissions associated with climate change. Similarly, the IMO has taken steps to address ocean-based noise by publishing the IMO Revised Guidelines for the Reduction of Underwater Radiated Noise from Shipping to Address Adverse Impacts on Marine Life.[17] This means, of necessity, that SAMSA must have regard to the developing understanding of pollution in the international legal context in which it operations. The relevant international norms clearly recognise that maritime noise requires regulation. When considered against the background of the domestic environmental principles and definitions which must guide SAMSA's conduct, it is simply inexplicable that noise pollution arising from Bunkering activities should not be addressed in the 2024 Code.

5.7.4. The obligations placed on SAMSA are reinforced by further international commitments made by South Africa under the Convention on the Conservation of Migratory Species of Wild Animals, 1979 (**Bonn Convention**) and Agreement on the Conservation of African-Eurasian Migratory Waterbirds (**AEWA**). The Bonn Convention has developed specific guidelines regarding the impact of marine noise which SAMSA cannot ignore.[18] In addition, the Rolling Work Plan 2021-2025 of the AEWA Benguela Coastal Seabirds International Working Group provides specifically for regulation of noise impacts generated by, *inter alia*, Bunkering.[19]

[16] MCERA pp 101-103.
[17] MEPC.1/Circ 906 of 22 August 2023.
[18] See Resolution 12.14 on the *Adverse Impacts of Anthropegnic Noise on Cetaceans and other Migratory Species*, 2017 and its annex, the *CMS Family Guidelines on Environmental Impact Assessments for Marine Noise generating Activities*, available online <https://www.cms.int/sites/default/files/document/cms_cop12_res.12.14_marine_noise_e.pdf >.
[19] Developed at the first meeting of the Benguela Coastal Seabirds International Working Group held on 3-4 March 2021.

6. **The 2024 Code ignores the regulatory lacunae of an absence of EIA Regulations**

6.1. We have previously raised our concerns regarding the omission of offshore bunkering and STS Transfer activities from inclusion as Listed Activities for purposes of the Environmental Impact Assessment Regulations, 2014 (**EIA Regulations**). In our 2022 Submission, we indicated that SAMSA should be engaging with the DFFE in this regard, rather than seeking to regulate offshore bunkering through the 2024 Code. We remain of the view that should Bunkering be permitted at all, the proper regulatory mechanism is an Environmental Authorisation, issued by the DFFE, preceded by an Environmental Impact Assessment (**EIA**).

6.2. We emphasise that the draft TNPA ERA (together with its annexures) reflected a number of flaws which the BLC pointed out in our comments. These issues notwithstanding, the draft TNPA ERA strongly indicated that the detrimental impacts on the marine environment rendered the continuation of Bunkering and STS Transfer unlawful in the absence of EIA – and potentially entirely unviable in the context of the constitutional requirement that all development is "justified" and ecologically sustainable. To date, no such justification, within the meaning of the law, has been publicized with the socio-economic benefits of offshore bunkering and STS transfer remaining opaque.

6.3. In this context, and noting the mandate, purpose and functions of SAMSA, it is concerning that references to "EIA where applicable" which appeared in the 2022 Code have been omitted. This means that the 2024 Code does not cater for the possibility of Bunkering being listed for purposes of the EIA Regulations in the future (including if this is indicated by the results of the TNPA ERA). We repeat our view that this is an eventuality that must happen if the regulation of marine shipping activities is to remain consonant with constitutional requirements. SAMSA's ignoring of this eventuality is thus inconsistent with a proper interpretation of the law.

6.4. We would contend that, to the extent that SAMSA (and TNPA) have identified the difficulties with the non-regulation of Bunkering by the DFFE, this is a legislative gap which leaves both SAMSA and TNPA vulnerable. For this reason alone, we would urge SAMSA (together with the TNPA) to engage with the DFFE to ensure that Bunkering is properly regulated by those authorities with the proper authority to administer the appropriate regulatory instruments.

6.5. This does not preclude SAMSA from co-ordinating a process of drafting and gazetting codes of good practice in conjunction with other relevant regulatory authorities. It is in the interests of transparent and accountable regulation, to have gazetted procedures in place confirming the various obligations to imposed on any bunkering operator. The expressed attempt to do so in the 2022 Code, with reference to the separate mandates of SAMSA, the TNPA and DFFE was laudable. This is now entirely absent from the 2024 Code which seem to assume for SAMSA a core regulatory function – including outside port limits. This approach is not aligned with

the obligations placed on SAMSA to engage in co-operative government and appears to be an instance of over-reach in terms of the scope of SAMSA's powers.

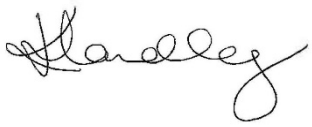
7. Conclusion

7.1. The BLC has pointed out a number of key legislative – and particularly important constitutional – obligations placed on SAMSA that require that it regulate Bunkering with regard to principles of co-operative government and environmental management applicable to all organs of state. These mean that it is not authorised to publish unilateral guidelines to address Bunkering – particularly in the context of previous drafts having expressly acknowledged these constitutional and legislative obligations. What is more, the 2024 Code omits regulation of critical pollutants such as noise and fails to make it clear whether SAMSA has in fact considered the integration of all legal requirements imposed by domestic and treaty law, for which it is responsible and which apply to Bunkering.

7.2. In addition, SAMSA appears to have issued the 2024 Code prematurely and without regard to the procedures and outcomes of the TNPA ERA. In this regard, and given the links between publication of Bunkering "Codes" and the implementation of an ERA to address historic environmental concerns, the 2024 Code is unrelated to its purpose and thus irrational.

7.3. Finally, we acknowledge the difficulty faced by SAMSA in seeking to regulate Bunkering within the scope of its objects, powers and functions and in the absence of EIA Regulation. Accordingly, we urge SAMSA to address this issue with the DFFE and Minister and seek to have Bunkering (as well as STS Transfer) listed for the purpose of appropriate environmental oversight. It is only if this is done that SAMSA can ensure that it does not commit a breach of section 24(b) of the Constitution in its attempt to regulate Bunkering.

Yours faithfully,



BIODIVERSITY LAW CENTRE NPC

***Per* Kate Handley and Nina Braude**

https://www.news24.com/fin24/economy/months-after-sars-detained-bunkering-vessels-uncertainty-about-refueling-still-prevails-20240513

Na'ilah Ebrahim

Months after SARS detained bunkering vessels, uncertainty about refueling still prevails

08:33

(Getty Images/Pablo Blazquez Dominguez)

- **Despite new tax rules for offshore bunkering not yet being finalised, SA's maritime authority says bunkering activity in Algoa Bay can continue.**
- **Last year, numerous vessels were detained by SARS for violating tax laws related to offshore bunkering, amid a gap in the rules.**
- **Port operator Transnet has also said it is busy processing for pending and new applications for bunkering.**
- **For more financial news, go to the News24 Business front page.**

The South African Revenue Services (SARS) has said it is still finalising legislation for tax rules related to ship-to-ship refuelling or offshore bunkering, months after it detained vessels off the Eastern Cape coast in Algoa Bay.

The service detained four bunker tankers and an oil drilling ship belonging to Minerva Bunkering and Heron Marine last year for violating tax rules of the Customs and Excise Act.

While bunkering services have halted at the bay since the detention and caused a R7 billion loss to the fiscus, the South African Maritime Safety Authority (Samsa) recently said it is open to reopening bunkering services. Transnet National Ports Authority (TNPA) is also open to issuing new licences for operators.

Prevailing 'uncertainty'

At a recent briefing hosted by Samsa, SARS chief litigation officer Wayne Broughton said it was willing to engage with maritime stakeholders to amend the provisions of the act to "provide certainty and clarity" related offshore bunkering tax rules.

This includes providing licensing and monitoring of barges (vessels used to store and transport fuel), vessels for controlled storage areas, special sea-based storage warehouses, and the use of marine removers of fuel-levy goods.

Broughton said the deadline for public comments on the amendments had been postponed to 10 May, after it previously closed in January this year.

The comments by Broughton came after the Eastern Cape High Court acknowledged the "uncertainty" around bunkering tax laws in March this year in a novel case that utilised tankers as floating storage facilities for fuel stocks. These were sold to foreign-going vessels and supplied through ship-to-ship transfers within ports.

READ | Fears about fuel crunch after SARS impounds ships

In an urgent application to the court, Heron Marine had applied for an amendment of SARS's detention notice and the release of their three vessels, *MT Avatar*, *MT Vemadignity*, and the *MT Vemaharmony*.

According to the judgment, the bunkering service company failed to register its bunkering operations in Algoa with SARS for two years since it began bunkering in the region in 2020.

While the court dismissed the application as moot, Judge Denzil Potgieter said:

> There does appear to be some uncertainty concerning the regulation of the specific bunkering operations conducted by [Heron Marine]. There is a lacuna [meaning gap] in the act, which also appears in the rules, in that neither covers the type of operations conducted by the applications.

Potgieter said while the amendments had been agreed upon in 2014, it had yet to be introduced formally.

"Suffice to say that this unwholesome situation would in all likelihood have been averted if the applicants had approached SARS for clarity and guidance prior to and not two years after the commencement of the bunkering operations," the court noted, however.

Potgieter also said there had been an immense economic loss while the vessels were detained and interrupted.

"The estimated loss presently suffered while the [bunkering] operations are interrupted is stated to amount to approximately R300 million per month. SARS has estimated that the loss of revenue to the fiscus amounts to R7 billion."

News24 previously reported that, since 2021, nearly 6 200 vessels had visited Algoa to refuel their ships. Some 2 million metric tonnes of fuel are sold in the region each year.

Will bunkering continue?

According to Samsa, the resumption of bunkering operations is on track, with applications from Samsa and TNPA open for safety permits and licences. However, interested parties would need to ensure they comply with tax rules.

Samsa CEO Tau Morwe said: "We remind applicants that we are not the only regulator [...] They need to make sure that they are compliant with SARS. If that is in place, nothing prevents applicants or operators from conducting their operations. That is the status [of operations]."

In February, Samsa notified all shipping agents and port authorities that applications for permits were open and said it would process applications without delay.

As the marine authority, Samsa is responsible for issuing permits for offshore bunkering operations outside of port limits and ensuring bunkering operators meet safety standards to prevent pollution.

TNPA executive manager for legal and compliance, Justin Uren, said the ports authority was processing pending and new applications for bunkering operations.

All operators and bunker barges must have a licence from the ports authority for bunkering activities inside of port limits.

This is after a moratorium was placed on all new licences from TNPA pending the findings of an environmental risk assessment released in November last year.

The risk assessment aimed to investigate whether the refuelling will adversely impact the African penguin population on the St Croix Island. The region has had four oil spills related to bunkering since 2016, with three leading to the oiling of birds.

The deadline for public comments on the assessment was 22 January this year.

READ | African penguin under threat due to ship-to-ship refuelling in Algoa Bay, warn conservationists

Speaking about the risk assessment, Uren said TNPA would continue to engage with new operators and stakeholders to mitigate the environmental impact of ship-to-ship refuelling.

However, it is unknown whether the moratorium was lifted.

Maritime Business Chamber executive chairperson Unathi Sonti, meanwhile, is doubtful whether bunkering operations will continue with legislation still being finalised by SARS.

Sonti said that with no operations taking place since the detention of vessels last year, there is still confusion about how authorities will monitor it.

He said:

> The main problem is that offshore bunkering is not [officially] recognised by SARS. Even if they bring in new players and the licensing and permit applications are successful, if the operator does not meet SARS's requirements, they cannot operate.

Sonti also warned that authorising new bunkering operators would be difficult, with the country facing huge "reputational damage" since the SARS crackdown.

He said the country also missed opportunities to exploit the shipping crisis caused by the ongoing conflict in the Red Sea and the recent drought in the Panama Canal, with larger vessels being forced to travel along the Cape of Good Hope.

The number of ships passing the Cape of Good Hope has has nearly doubled, from 3 815 in 2023 to 7 078 this year. By comparison, the country's busiest port in Durban had fewer ships dock there during the same period, according to the Outlier.

Meanwhile, according to Bloomberg, bunker stops at Walvis Bay in Namibia and Port Louis in Mauritius have become increasingly popular for vessels amid the conflict.

Speaking about when there will be certainty for bunkering rules, Sonti said that SARS was only likely to finalise tax rules within four to five months.

Docking in Durban

Durban's port has not experienced an inc
arrivals despite the ongoing crisis in the

Source: **Transnet National Ports Authority Cargo statistics** (monthly)

(Supplied/The Outlier)

Supplied

**Heron Marine and SARS did not comment on questions received by News24.*

**News24 did send questions to TNPA regarding the environmental risk assessment and the moratorium placed on new licences. Their comments will be added once received.*

Annexure 2

MINISTER
FORESTRY, FISHERIES AND THE ENVIRONMENT
REPUBLIC OF SOUTH AFRICA

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Ref: EDMS MCE245325

Ms Nina Braude
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Dear Ms Braude

LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER

I refer to your letter of 16 May 2024.

In your correspondence, you requested information regarding the involvement of the Department of Forestry, Fisheries and the Environment (DFFE) in Transnet National Ports Authority's (TNPA) Environmental Risk Assessment (ERA) process; details on the DFFE's engagements with the South African Maritime Authority (SAMSA); and the steps to be taken by the DFFE to regulate the environmental impacts of bunkering and ship-to-ship transfer (collectively STS bunkering).

In respect of the ERA, this was commissioned by TNPA and the DFFE was a commenting authority in this process. The DFFE provided its comments on numerous occasions. Insofar as you seek clarification that the "risk assessment" to which I referred to in my previous correspondence was the TNPA ERA, I can confirm that this is the case.

The DFFE attended the SAMSA hosted offshore regulators meeting on 21 February 2024. The purpose of this meeting was to engage authorities following its announcement that the SAMSA Board had decided to lift the moratorium and to process applications in terms of section 21(1)(b) of the Marine Pollution (Control and Civil Liability) Act, 1981 (Act No 6 of 1981) pertaining to offshore operations in Algoa Bay and other potential areas. The final ERA Report was thereafter made available to the DFFE on 11 April 2024.

The DFFE will further engage on the bunkering related issue with TNPA and SAMSA. It should, however, be noted that offshore bunkering operations are currently suspended pending investigations

LEGAL INTERVENTIONS TO PREVENT FURTHER DECLINE IN AFRICAN PENGUIN NUMBERS IN ALGOA BAY IN LIGHT OF RECOMMENCEMENT OF OFFSHORE BUNKERING AND SHIP-TO-SHIP TRANSFER

by the South African Revenue Services (SARS).

As a result of the removal of the environmental aspects from SAMSA's Code of Good Practice, the DFFE is in the process of developing regulations to address the environmental impacts of bunkering which the DFFE intends, in due course, to publish for public comment under the National Environmental Management: Integrated Coastal Management Act, 2008. This decision to develop regulations would have been communicated to stakeholders at the Offshore Environmental Working Group and the Offshore Operators Stakeholders Forum meetings scheduled for March 2024. However, as you are aware, these meetings were cancelled. The listing of bunkering and ship-to-ship transfer as an activity under section 24(2) of the National Environmental Management Act, 1998, is still under consideration.

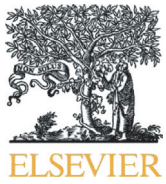
We look forward to your input on the Draft Regulations once published for public comment.

Yours sincerely

MS B D CREECY, MP
MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT
DATE: 15/6/2024

Science of the Total Environment 849 (2022) 157878

Annexure D



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Maritime traffic trends around the southern tip of Africa – Did marine noise pollution contribute to the local penguins' collapse?

Lorien Pichegru [a,*,1], Laëtitia Vibert [a,1], Andréa Thiebault [a,b], Isabelle Charrier [b], Nicky Stander [c], Katta Ludynia [c,d], Melissa Lewis [e], Tegan Carpenter-Kling [a,e], Alistair McInnes [e,f]

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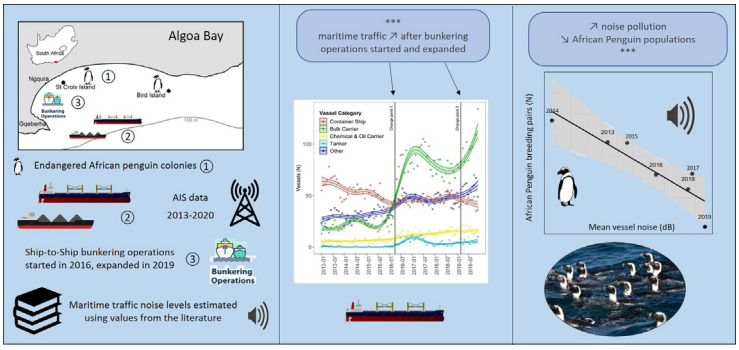
HIGHLIGHTS

- Maritime traffic increases globally, with associated noise pollution.
- Using AIS data, vessel noise emissions estimated in a marine biodiversity hotspot.
- Vessel-derived noise increased after initiation of offshore ship-to-ship bunkering.
- Local endangered African Penguin colony collapsed concomitantly.
- First evidence of impact of maritime traffic noise pollution on seabirds

GRAPHICAL ABSTRACT



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ABSTRACT

The rapid increase in seaborn trade since the 1990s has resulted in an increase in vessel-derived noise pollution, yet there is little evidence linking these activities to a decline in many marine taxa, such as seabirds. Algoa Bay, South Africa, is a marine biodiversity hotspot, providing habitats for the largest populations of endangered African Penguins (*Spheniscus demersus*), as well as other endangered seabirds, cetaceans and seals. The bay is situated on a major shipping route and since 2016 has hosted the first offshore ship-to-ship (STS) bunkering operations in the country, i.e. the supplying of fuel from one ship to another outside of harbours. Using Automatic Identification System (AIS) data, we estimated noise emissions from vessels as a proxy for underwater ambient noise levels within the core penguin utilisation area. Frequency of vessels using the bay doubled during our study, with numbers of bulk carriers increasing ten-fold. Ambient underwater noise levels were generally high in the bay (ca 140 dB re 1 μPa since 2015) but significantly increased by 2 dB SPL after the initiation of STS bunkering in 2016, corresponding to double the underwater noise intensity. This increase coincided with a significant and dramatic decline by 85% in penguin numbers from St Croix Island since 2016. Algoa Bay is now one of the noisiest bays in the world. This is the first study to assess the potential impact of vessel-derived underwater noise levels on a seabird population. Penguins, like marine

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Available online 6 August 2022

mammal species, are known to be sensitive to marine noise pollution and urgent management interventions are required to mitigate this recent disturbance, to preserve the remaining stronghold of the African penguin and the marine mammals' populations sharing the penguins' habitat.

1. Introduction

Maritime traffic has increased exponentially since the end of the second world war (Malakoff, 2010) and currently incorporates over 90 % of international trade in terms of volume (UNCTAD, 2019). In 2018, the total volume of merchandise transiting through the sea reached 11 billion tons for a global fleet of almost 92,300 ships (UNCTAD, 2019). Maritime traffic is a major source of pollution. The combustion of heavy fuel oil for maritime transport represents 15 % of world sulphur emissions (Qi et al., 2020), harmful to the health of human populations in ports and coastal cities (Zhen et al., 2019). Oil spills (accidental or illegal discharges, e.g. Polinov et al., 2021) are perhaps the most obvious and well-known pollution risks from sea-going vessels, being the most publicly visual and with often large scale, long-lasting impacts on the environment and communities that depend on healthy marine ecosystems (Chilvers et al., 2021). Less obvious to the public and with infrequent reports recorded, vessel collisions with large marine animals have a clear significant impact on cetacean populations worldwide (Schoeman et al., 2020). In addition, hull fouling and ballast water, as major transport vectors for marine organisms, present a significant threat of biological invasions to marine ecosystems (Sardain et al., 2019). The impacts of anthropogenic noise pollution emitted from vessel activities on a wide range of taxa have only recently been given recognition (Duarte et al., 2021). While environmental sustainability has started to become a major policy concern in global maritime transport in more recent years (e.g., limits to the sulphur content in fuel oil used by ships in 2016 (Lindstad et al., 2017), successful mitigation measures implemented since the 1960s to reduced pollution from shipping and the offshore oil industry (Camphuysen, 2010; Chilvers et al., 2021), and the creation of the International Convention for the Control and Management of Ships' Ballast Water and Sediments in 2004 (see Ji et al., 2021), mitigation of marine noise pollution remains in its infancy. This is despite a range of guidelines for noise measurement and ship design and engineering having been set by the International Maritime Organisation (IMO) in 2014, with the aim of reducing the underwater noise produced by ships (IMO, 2014).

The reason for this lag is likely due to a paucity of research linking specific sources of sound to animal taxa-specific sound thresholds (Popper et al., 2020). There is, however, an abundance of literature linking various noise sources to a diversity of negative direct and indirect impacts associated with a wide range of taxa (Duarte et al., 2021), although research of such impacts on seabirds is limited. Overall low-frequency noise recorded below the surface in major shipping routes has increased 32-fold over the past 50 years (Malakoff, 2010), doubling every decade (Weilgart, 2017) and transforming the underwater soundscape with added anthropophony to the existing natural biophony and geophony (Pijanowski et al., 2011). In areas such as the Arctic, shipping frequency has changed from an occasional disturbance to a dominant noise source, with the potential to impact behavioural responses of animals using these areas (Aulanier et al., 2017). Most marine species, from invertebrates to marine mammals, invariably use underwater auditory cues for crucial biological functions such as foraging, orientation, communication, predator avoidance, mating and care of their young (Au and Hastings, 2008). Anthropogenic noise can thus greatly impact these animals' vital functions, with impacts ranging from low disturbance to lethal injuries (Chou et al., 2021). Calls for measures to address this threat and establish policies to minimise the impacts of marine noise pollution on marine ecosystems are growing world-wide, including by the governing bodies of several conservation treaties such as the Convention on Biological Diversity (CBD, Decision XII/23, 2014), the Convention on the Conservation of Migratory Species of Wild Animals (CMS, Resolution 12.14, 2012), and several of the latter's ancillary Agreements.

In parallel with increased maritime traffic, the demand for refuelling options along major shipping routes has seen a corresponding increase, to save time by avoiding berthing at port and maximising economic profits from the voyage. Consequently, offshore ship-to-ship (STS) bunkering activities, i.e., the supplying of fuel from one ship to another outside of harbours, are rapidly expanding (Credence Research, 2019). STS bunkering operations involve the use of large tankers (mother ships) which replenish the fuel stores of smaller tankers (daughter vessels) which in turn dispense fuel to sea-going vessels at anchor. In addition to these activities presenting a clear risk of oil pollution (Akyuz et al., 2018), with 7 % of the annual global spills originating from bunkering operations (ITOPF, 2020), they are also expected to induce high levels of underwater noise by concentrating additional (and larger) vessels in a specific area, thereby compounding existing levels of shipping and other sources of noise pollution. There is, however, no study to date that has investigated the potential link between STS bunkering operations and underwater ambient noise levels, with associated impacts on the environment.

Algoa Bay, off Gqeberha (formerly known as Port Elizabeth) in South Africa, is located on a major global maritime route and offers since 2016 the first offshore STS bunkering services in the country. It is the largest bay in South Africa providing shelter to anchored ships. The bay also hosts two major commercial and industrial ports, the original port of Port Elizabeth and the deep-water port of Ngqura, which opened in 2008 and which has since seen rapid development and operational expansion. The location of these ports has facilitated the expansion of the ocean economy in this region under the South African government's 'Operation Phakisa', which aims to unlock the marine space for various initiatives, including oil and gas exploration, aquaculture, tourism, and marine conservation (Holness et al., 2022). The bay is a hotspot of marine biodiversity, with large populations of cetaceans and seals (e.g., Bouveroux et al., 2018) and two groups of islands in Algoa Bay falling within a globally Important Bird and Biodiversity Area (Donald et al., 2019): the St Croix Island group and the Bird Island group. These island groups together support globally important populations of the endangered African Penguin (*Spheniscus demersus*) and Cape Gannet (*Morus capensis)* (BirdLife International, 2020). Both species are endemic to southern Africa and have undergone significant declines in their populations (Sherley et al., 2019, 2020) due to various threats, from competition with fisheries, to degradation of their habitat and global climate change (Crawford et al., 2011). As a Contracting Party to the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), South Africa has committed to taking various measures to address the threats facing these species (including both marine pollution and disturbance), with the aim of restoring their populations to a favourable conservation status (AEWA, Annex 3). St Croix Island is located within 5–15 km of the port of Ngqura, in close proximity to the anchorage areas where STS bunkering activities take place (Fig. 1). Since the initiation of STS bunkering, four oil spills have occurred (in 2016, 2019, 2021 and 2022), causing oiling of hundreds of seabirds (Ryan et al., 2019; SANCCOB, 2020).

While an on-going scientific experiment is assessing the benefits of purse-seine fishing exclusion for penguins in Algoa Bay (Pichegru et al., 2010; Sherley et al., 2018), no study has investigated the level of underwater ambient noise in their habitat. African penguins are known to be sensitive to noise disturbance (Pichegru et al., 2017) and have recently been shown to use acoustic communication to increase group foraging efficiency (McInnes et al., 2020). Here, we studied the recent trend (2013 − 2020) of maritime traffic in Algoa Bay and associated noise emissions using the maritime very high frequency (VHF) Universal Automatic Identification System (AIS) data. The system was originally designed for Vessel Traffic

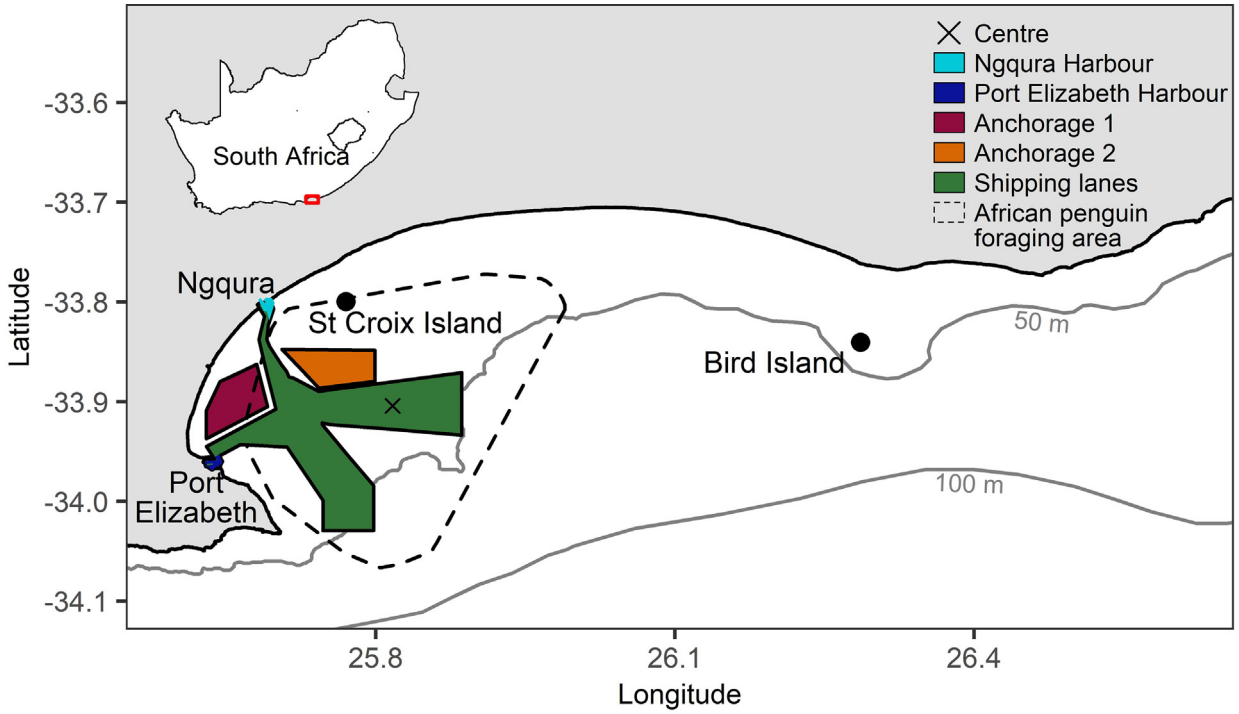

Fig. 1. Map of the study area, showing Ngqura (light blue) and Port Elizabeth (dark blue) harbours, anchorage areas 1 and 2, shipping lanes, as well as the main African penguin foraging area (dotted line) from St Croix Island and its centre (back cross).

Systems (VTS), as a mandatory collision avoidance measure (Robards et al., 2016), but the data are now increasingly used in research for maritime traffic, gas emissions, pollution (oil spills and noise) or interactions with wildlife (Svanberg et al., 2019). From the engine size associated with the different vessel types using data from the literature (Veirs et al., 2016), and the vessel's daily location while transiting in the bay (speed >1 kn.), we estimated the underwater ambient noise levels potentially received by African Penguins in their core foraging area around St Croix Island. We related these noise levels to the penguin population trend on St Croix Island over the same period. We hypothesised that underwater noise levels would intensify after the initiation of STS bunkering operations, with a noticeable negative impact on penguin numbers. This study is the first to explore the impact of maritime traffic noise pollution on a seabird, and the consequence of offshore bunkering activities on underwater noise levels. The outcomes are discussed in the context of South Africa's current legislative framework for ship-to-ship bunkering authorisations.

2. Methods

2.1. Trends in vessel category and zone use in Algoa Bay

AIS information was obtained for vessels transiting within or through Algoa Bay between January 2013 and September 2020 from Clarksons Platou (H. Clarksons & Company Limited). AIS autonomously and hourly transmits messages containing static data (vessel identification data such as name, call sign, IMO number, type, and individual features) and dynamic navigation sensor data (i.e., vessel GPS location, speed over ground, course over ground, heading and rate of turn). As required under SOLAS (the International Convention for the Safety of Life at Sea) since 1 July 2008, all ships ≥300 gross tonnage that undertake international voyages, all cargo ships ≥500 gross tonnage irrespective of travel destination, tankers, and all passenger ships irrespective of size must use AIS. AIS is not required on smaller fishing vessels, recreational boats, inland vessels, warships, and naval auxiliary vessels. Due to the high number of vessel types in the AIS data (N = 105, see Table S1), they were grouped for the purpose of this analysis into five categories: based on a monthly median of ≥5 vessels and a non-zero % change in monthly median vessel numbers during the study period –'Bulk Carrier', 'Container Ship' and 'Chemical and Oil Carriers'; based on ≥400 % increase in monthly median vessels over the study period – 'Tanker'; and, all the other vessel types – 'Other' (Table S1). The maritime areas considered in this study follow the Department of Transport's Transnet jurisdiction, corresponding to the traffic and/or activities herein: the two harbours (Port Elizabeth and Ngqura), anchorage areas 1 and 2 (where STS bunker transfers occur), and shipping lanes used by vessels to enter or leave the harbours (Fig. 1). GPS coordinates of each transiting vessel (with speed over ground >1 kn.) were extracted from the AIS dataset and assigned to one of the five areas. Coordinates were extracted only once a day for each vessel, between 12 pm and 1 pm, corresponding to the African Penguin peak foraging activity (see below, van Eeden et al., 2016).

We used Generalised Additive Models (GAM, Wood, 2000) to assess change over time, at monthly intervals, of the a) number of vessels per type within Algoa Bay (i.e., vessel category) and b) number of vessels present per zone (i.e., vessel zone). GAMs were run separately for vessel category and vessel zone. Due to unprecedented changes to vessel traffic trends in 2020 during the COVID-19 global pandemic, only data until December 2019 were used for these analyses. Specifically, vessel count per month was set as the response variable and date (year-month) with either vessel category or vessel zone included as a categorical variable (using the "by" argument in the gam function in the mgcv R package, Wood, 2017), thus allowing smooths to be generated for each vessel category or zone. Smoothers were fitted to predictors using penalised regression splines with the number of smoothing parameters selected using an Un-Biased Risk Estimator (UBRE). All models were fitted with a Poisson distribution with a log link. Finally, to limit residual autocorrelation, a temporal autoregressive correlation structure of order 1 (CorAR1) was implemented within each model.

To obtain an unbiased estimate of significant change points in the number of vessels in the bay at any given month during the study period, we applied a Bayesian change point analysis (BCPA) using R package bcp (Erdman and Emerson, 2007) following the methods of Wang and Emerson (2015). The BCPA uses the Markov chain Monte Carlo (MCMC)

method to estimate the posterior means of unknown data blocks partitioned in the data series and change points at any given location. We applied the BCPA to a sequential time series of all vessels quantified per month using 500 MCMC samples and discarded the first 50 as burn-in. Change points were selected with posterior probability values >0.5.

2.2. Noise estimates in the African Penguin foraging area

The at-sea distribution of African Penguins rearing chicks on St Croix Island was tracked with GPS loggers as part of a long-term monitoring project (Pichegru et al., 2010, 2012), with relevant ethics clearances (University of Cape Town 2009/V2/LP and Nelson Mandela Metropolitan University NMMU-A15-SCI-ZOO-008) and permit approvals (South African National Parks (PICL578), the South African Department of Forestry, Fishery and the Environment (res2013–05)). Chick-rearing African Penguins were equipped with GPS loggers (earth & OCEAN Technologies™, Germany, or CatTrack™, USA) recording locations every minute at an accuracy of <10 m and weighing <2.5 % of adult body mass (see Pichegru et al., 2010 for details). To estimate the core marine utilisation area for African Penguins breeding on St Croix Island, we used methods developed by BirdLife International (Lascelles et al., 2016; Dias et al., 2018) to identify Marine Important Bird and biodiversity Areas (mIBA). We used complete tracks (n = 46) recorded between 2015 and 2018 and the R package *track2KBA* (Beal et al., 2021) to generate the core marine utilisation areas. The geometric centre of this foraging area was identified using the R package *sf* (Pebesma, 2018).

Due to a lack of referenced conversion factors for noise produced by ships at anchor, underwater noise levels were estimated for transiting vessels only, i.e., for vessels with a speed over ground >1 kn. Estimating noise levels is a challenging and complex task, as vessel noise production depends on intrinsic features (ship shape design, size, engine power, propeller type, etc) and external factors (water depth, wave height, etc) (Abrahamsen, 2012; McKenna et al., 2013; Gaggero et al., 2015). Nevertheless, for containerships for example, the speed as well as the size appear to be the main variables in modelling the resulting noise emitted (Abrahamsen, 2012). We thus estimated noise levels on main vessel types (Table 1) based on reference values (i.e., mean broadband sound pressure levels between 20 and 40,000 Hz) from the literature (Veirs et al., 2016), as the range of speed values of vessels transiting in Algoa Bay approximated the range of values used in this study (Table 1).

While noise is produced throughout the day by vessels transiting the bay, hourly variation was negligible (data not shown). We focused our analyses on the traffic occurring between 12 pm and 1 pm daily, which corresponds to the peak of penguin foraging activity (van Eeden et al., 2016).

Table 1
Sample size and speed values (mean ± SD, in knot) from AIS data for vessels transiting (speed >1 kn) in Algoa Bay between 2013 and 2020, in comparison with speed values considered in Veirs et al. (2016), as well as mean Source Level (SL) values (dB re 1 μPa @ 1 m) emitted by various passing vessel types described in Veirs et al. (2016) and used in the estimate of underwater noise levels in Algoa Bay.

Vessel category	N	Speed (kn)	Speed (kn)	Mean SL
	Algoa Bay	Algoa Bay	(Veirs et al., 2016)	(Veirs et al., 2016)
Bulk carrier	82,788	9.96 ± 3.19	13.7 ± 1.5	173
Containership	46,185	9.73 ± 5.47	19.2 ± 1.9	178
Tug	1629	5.81 ± 3.72	8.2 ± 2.3	170
Cargo	9256	10.80 ± 4.12	14.4 ± 2.3	175
Vehicle carrier	8804	10.10 ± 5.53	16.9 ± 1.8	176
Tanker	25,793	7.03 ± 4.49	13.8 ± 1.4	174
Military vessel	142	10.10 ± 3.62	11.1 ± 3.1	161
Fishing vessel	8734	6.65 ± 3.03	9.1 ± 2.2	164
Passenger vessel	833	12.1 ± 4.41	14.4 ± 4.	166
Others	6969	7.62 ± 3.96	11.2 ± 5.8	163
Leisure craft	70	9.25 ± 3.39	12.4 ± 4.9	159
Research boat	498	7.32 ± 3.48	11.1 ± 1.8	167

Therefore, each vessel present in the study area was considered only once daily in the following analyses.

Considering only vessels transiting (speed >1 kn) between 12 pm and 1 pm, we then calculated (1) the noise received by penguins in the centre of their mIBA from each ship daily, (2) the cumulative underwater noise level from all vessel traffic (with AIS) daily, and (3) the average daily noise level received per month, following the equations below:

(1) The received sound level (RL, dB re 1 μPa), i.e., the level of noise received at the centre of the penguin foraging area as emitted by each vessel, was calculated daily as per Eq. (1):

$$RL = SL - TL \quad (1)$$

where SL = mean broadband (20–40,000 Hz) Source Level, i.e. the level of noise at 1 m produced by the vessel depending on its type, as described from the literature (Veirs et al., 2016) (Table 1); and TL = Transmission Loss, i.e., the reduction in noise level with distance (in m), estimated based on the distance of the vessel to the centre of the mIBA following Eq. (2), taking into account the shallow bathymetry of the study area (<50 m) and considering the seafloor characteristics of our study area which is relatively uniform (Schoeman et al., 2022):

$$TL = 10 * log_{10}(dist) \quad (2)$$

(2) The daily Received sound Level (RL_{day}) was then calculated as the cumulative noise level received at the centre of the mIBA from all vessels between 12 pm and 1 pm on each day (Eq. (3)), where n is the number of vessels:

$$RLday = 10 * log_{10}\left(\sum_{i=1}^{n} 10^{\frac{RL}{10}}\right) \quad (3)$$

(3) and the monthly averaged daily Received sound Level (RL_{month}) was calculated following (Eq. (4)), where n is the number of days in the month.

$$RLmonth = 10 * log_{10}\left(\sum_{i=1}^{n} \frac{10^{\frac{RLday}{10}}}{n}\right) \quad (4)$$

2.3. African Penguin population trend and underwater noise levels

We assessed the relationship between annual vessel-derived noise estimates and the annual counts of African Penguin breeding pairs using standard linear regression. Annual vessel-derived noise estimates were averaged across the 12 months of data using the Eq. (4) (replacing RLday for RLmonth and n = 12 months). Penguin counts were extracted from the annual count conducted by the Department of Forestry, Fishery and the Environment (DFFE) following a standard method (see Sherley et al., 2020 for details). All data analyses were performed in the R statistical environment (R version 3.6.1; R Core Team, 2019).

3. Results

3.1. Trends in vessel category and zone use in Algoa Bay

Vessel traffic in Algoa Bay more than doubled between 2013 and 2019, from 96 vessels on average per month in early 2013 to 245 vessels per month in 2019, with two significant change points identified in April

2016 and in March 2019 (Fig. 2, Table S2). This trend was strongly influenced by vessel category (Fig. 2a) and zone use (Fig. 2b), with the majority of explanatory smooth terms (Vessel Category: all terms except s(nYM): Chemical and Oil Carrier; Zone: all terms except s(nYM)) in the GAM outputs fitting well to the data and being highly significant ($P < 0.001$, Table S2).

Bulk carriers were the vessel types that increased the most during our study period, with a ten-fold increase from 13 vessels per month in January 2013 to 134 in December 2019 (Fig. 2a). This increase was largely driven by two periods of significant changes in vessel numbers, around the two significant change points: from 22 ± 6 vessels (median ± Inter Quartile Range, IQR) before April 2016, to 81 ± 16 and 96 ± 18 vessels after change points 1 and 2 respectively (Fig. 2a). The average number of container ships in the bay remained fairly constant over time, averaging close to 50 ships per month, but Chemical and Oil Carriers, as well as Tankers, increased by 200 to 400 % during our study period (from 1 to 3 to 11–21 per month, Table S1). All other vessel types remained in low numbers (1–4), with little change over time (Table S1).

Most of the increases in vessel traffic occurred in the shipping lanes and in anchorage area 1 (Fig. 2b, Fig. S1). Vessels in shipping lanes increased from 108 ± 16 vessels before April 2016 to 184 ± 18 and 214 ± 16 vessels after change points 1 and 2 respectively. Vessels in anchorage area 1 increased from 22 ± 6 vessels before April 2016 to 84 ± 22 and 115 ± 25 vessels after change points 1 and 2 respectively (Fig. 2b). The use of anchorage area 2 also increased sharply after 2016, but not after March 2019, while the vessel traffic in Ngqura harbour increased relatively slowly and constantly during the study period. By contrast, the use of Port Elizabeth harbour varied more over time but remained relatively constant when compared to vessel trends in the anchorage areas and shipping lanes (Fig. 2b).

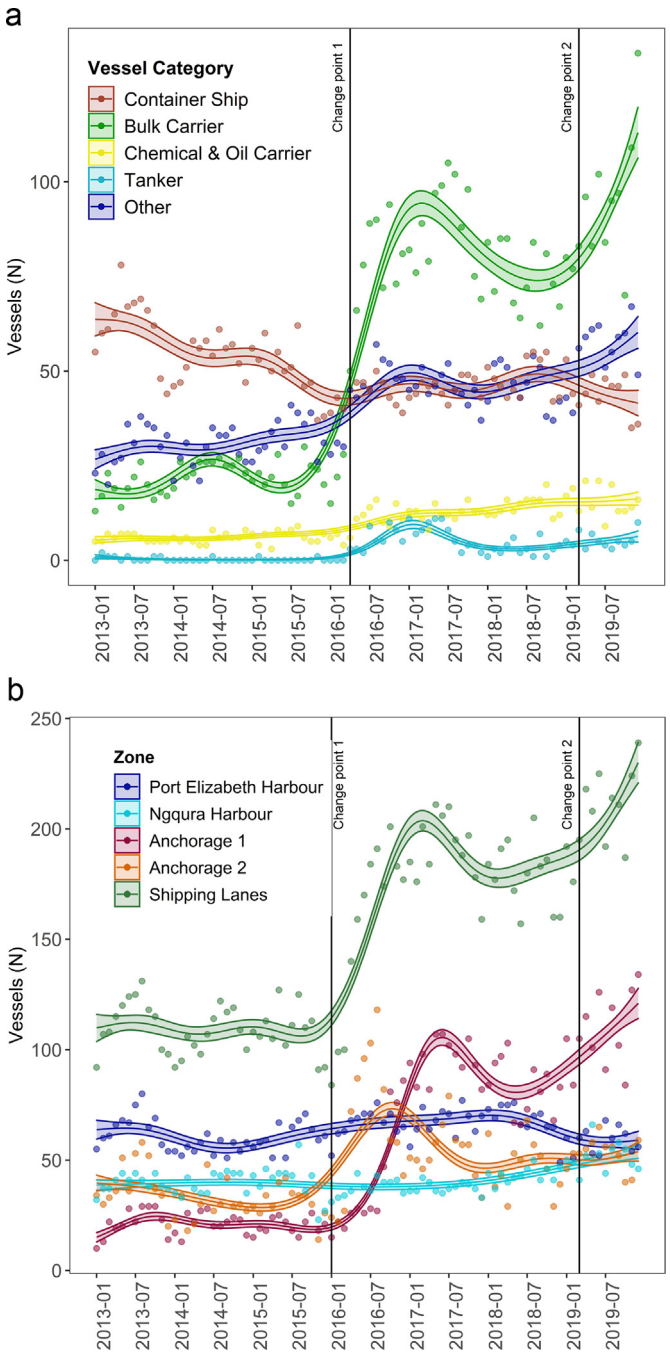

Fig. 2. Trend (smooths from generalized additive mixed models and SE) in monthly number of vessels in Algoa Bay per type (a) and area of use (b) between January 2013 and December 2019. The two black vertical lines show the significant change points from the Bayesian change point analysis (BCPA).

3.2. Noise estimates in the African Penguin foraging area

The annual mean ambient underwater noise level estimates received at the centre of the penguin foraging area have been constantly high since 2013. Noise estimates increased from <140 dB re 1 μPa in 2013 to >142 dB re 1 μPa from 2016 onward (Fig. 3, Table S3), which corresponds to double the noise intensity from before to after 2016.

Importantly, the variability within years of noise levels decreased since 2016. Prior to 2016, monthly variations were apparent throughout the year with monthly noise levels ranging from 137 to 143 dB re 1 μPa during this period. Highest noise levels estimated occurred in the summer months (Fig. 3, Table S3). From 2017 onwards, this variability decreased (<2 dB re 1 μPa between months; Table S3), with received noise levels being higher and more constant throughout the year (between 141 and 143 dB, Fig. 3).

In 2020, due to the national lockdown implemented during the global pandemic, underwater noise levels dropped drastically from >140 dB re 1 μPa to ca. 133 dB re 1 μPa in just a few weeks (Fig. 3).

3.3. African Penguin population trend

There was a strong negative relationship ($R^2 = 0.83$, linear regression model estimates: $t = -4.9$, $P = 0.005$) between the annual number of

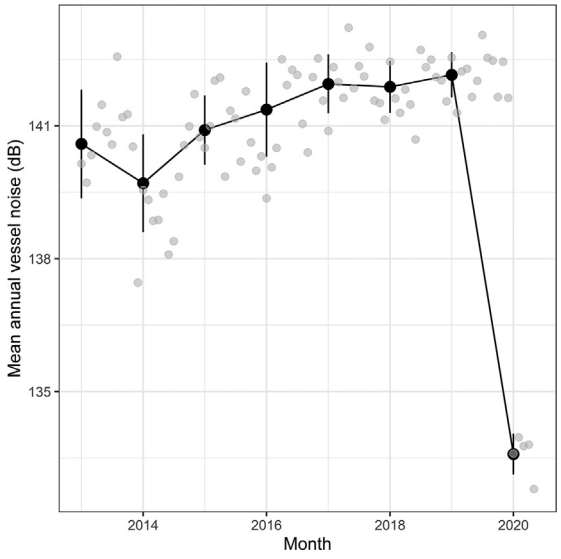

Fig. 3. Mean (± SD) annual underwater vessel noise levels (in dB re 1 μPa) received between 2013 and 2020 at the centre of the St Croix Island African penguin foraging area. Monthly averages are also shown (grey dots).

African Penguin breeding pairs on St Croix Island and annual estimates of vessel-derived noise received levels at the centre of the penguins' foraging area in Algoa Bay during the study period (Fig. 4). Increase in annual estimates of vessel noise corresponded to a significant average decrease of 976 ± 285 (mean ± SE) penguin pairs per year during our study period (Fig. 4). It is worth noting from Fig. 4 that the lowest recorded numbers of penguins' breeding pairs correspond to the period after the initiation of STS bunkering in 2016 (2016–2019).

4. Discussion

The impacts of vessel-derived noise pollution on ecosystems are difficult to estimate, partly because of a limited knowledge of taxa specific sound thresholds, and partly because spatial data for global maritime traffic has, until recently, remained sparse. AIS data has only been generalized to vessels for just over a decade, and its use to understand the impacts of maritime vessel activities on marine biota and ecosystems is in its infancy (Robards et al., 2016). These data are, however, essential to monitor changes following for example the expansion of maritime activities such as offshore STS bunkering, which has been forecast to become one of the most rapidly expanding maritime industries in the near future (Credence Research, 2019).

In this study, we observed a rapid 10-fold increase in the number of bulk carriers and a significant increase in vessel activity in shipping lanes and anchorage areas, both linked to significant temporal change points, which corresponded to first the initiation of STS bunkering in 2016 and the subsequent expansion of its operations in early 2019, with the operationalisation of the third STS bunkering company. Changes in areas used overtime also reflect STS activity patterns as STS bunkering operations were first established in anchorage area 2 in April 2016, as shown by the rapid increase in vessel use of the area after 2016, but were subsequently transferred to anchorage area 1 in early 2017 after the first oil spill that occurred in August 2016 (Fig. 2b). Noise levels emitted by maritime traffic in the bay consequently rose and the estimated average received underwater noise levels at the centre of the core utilisation area of African Penguins breeding on St Croix Island steadily increased from <140 dB to a plateau at around 142 dB re 1 μ Pa (broadband source level estimation) since 2017, placing Algoa Bay among the noisiest bays in the world (Duarte et al., 2021). For example, the bays with the busiest maritime traffic in Brazil had noise levels reaching up to 110 dB re 1 μPa for the 200–700 Hz frequency band (Bittencourt et al., 2014). At various sites in United Kingdom waters, median noise levels were measured between 81.5 and 95.5 dB re 1μPa for one-third octave bands from 63 to 500 Hz (Merchant et al., 2016). Broadband received levels (11.5–40.000 Hz) near the shoreline in Haro Strait (United States of America), a transiting area for the shipping port of Vancouver, were 110 ± 7 dB re 1 μPa on average (Veirs et al., 2016), while chronic anthropogenic noise in Saguenay–St. Lawrence Marine Park, Canada, reached 112.6 dB re 1μPa (broadband noise, 0.01–23.3 kHz) (Gervaise et al., 2012).

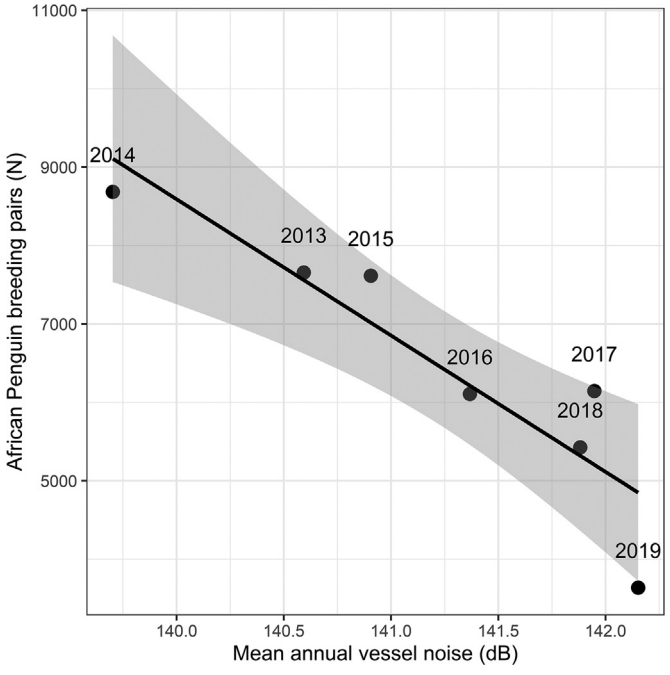

Fig. 4. Linear regression (and 95 % confidence interval) between the mean annual underwater vessel noise levels (in dB re 1 μPa) received at the centre of the St Croix Island African penguin foraging area and corresponding annual breeding pairs of African penguins recorded on St Croix Island between 2013 and 2019.

Estimation of vessel traffic noise is complex and depends on but is not limited to, vessel size, speed and frequency (Abrahamsen, 2012; Gaggero et al., 2015). Speed can vary during the course of the day or between usage zones (e.g., anchorage areas versus shipping lanes), which we did not take into account in the present study, as we only considered average values (Table 1). We also did not consider the cumulative impact of biophony, from wind for example (Schoeman et al., 2022), on overall ambient underwater noise levels. However, a recent assessment of the soundscape of Algoa Bay in 2015 using in-situ hydrophones revealed the significant contribution of maritime traffic, especially of large vessels in shipping lanes (Schoeman et al., 2022). The authors predicted an increase of this contribution in the near future due to the planned development of the national ocean economy (Schoeman et al., 2022). Our results, focusing on the relative change over time of estimated noise levels from maritime traffic, validate the authors' concerns.

It is important to note that, while AIS data is mandatory for vessels larger than 65 ft., it is not required for fishing or recreational vessels, vessels <300 t Gross Tonnage, tankers and passenger vessels <150 t Gross Tonnage (NMEA, 2010). Recreational vessels are known to be responsible for a substantial proportion of ambient underwater noise, especially in shallow coastal waters (Hermannsen et al., 2019). For example, in a study conducted in Denmark, recreational vessels (i.e., non-AIS vessels) caused more noise than AIS-vessels as they are predominant in Danish shallow coastal waters, and these motorised vessels can elevate third-octave band noise centred at 0.125, 2 and 16 kHz by 47–51 dB (Hermannsen et al., 2019). Similarly, a study conducted in the Wilmington, North Carolina Intracoastal Waterway, showed that the recreational boat traffic in this area produced mean underwater noise received levels ranging from 109 to ~118 dB re 1 μ Pa within a day (Haviland-Howell et al., 2007). Underwater noise levels in Algoa Bay are thus very likely to be significantly higher if recorded from acoustic stations (e.g., Merchant et al., 2014; Schoeman et al., 2022) compared to the present estimates using sound proxies, only for vessels that are legally required to have AIS. In addition, our estimation only considered transiting vessels and not vessels at anchor or undergoing STS bunkering operations. Anchored vessels can be an important source of noise (Abrahamsen, 2012; Baltzer et al., 2020), depending on the type of vessels, with anchor vibrations potentially affecting marine mammals or fish up to 700 m away from the vessels (Baltzer et al., 2020). No published data exist on noise emissions during STS bunkering operations, and this information is crucial for a full picture of the potential underwater noise pollution derived from this activity, not only from the attraction of maritime traffic but also from the activity itself.

Importantly, the increase of ca 3 dB in noise level estimates measured during our study period corresponds to a doubling of the noise intensity in seven years. This is among the fastest increase in sound (0.38 dB p.a.) measured to date from the literature, due to maritime traffic. For example, Ross (1993) estimated an increase of 0.55 dB per year between 1950 and 1975 in the East Pacific, East and West Atlantic oceans, while other studies using different methods showed increased ambient noise levels in the past decades of 0.3. dB per year off the Californian coast (Andrew et al., 2002) or 2.5–3.0 dB per decade in the Northern Pacific

Ocean (McDonald et al., 2006). Such rapid doubling of noise intensity in an area is likely to significantly affect resident wildlife.

High levels of underwater noise levels can directly affect individual animals by decreasing their foraging success, impacting their sensory abilities (e.g. hearing, orientation) and inducing higher stress levels (see Kight and Swaddle, 2011 for a review; Committee on the Assessment of the Cumulative Effects of Anthropogenic Stressors on Marine Mammals, 2017; Putland et al., 2019), thereby directly influencing adult survival. While little is known on the hearing range of African Penguins (e.g., Wever et al., 1969), Gentoo Penguins (*Pygoscelis papua*) have demonstrated a strong directional avoidance reaction to underwater noise at received levels between 110 and 120 dB re 1μPa RMS, while no behavioural response was observed with received levels at 100 dB re 1 μPa RMS (Sørensen et al., 2020). Similar behavioural avoidance responses were noted for the common murre (*Uria aalge*), with received noise levels varying from 110 to 137 dB re 1 μ Pa RMS (Hansen et al., 2020). It is thus highly likely that constant anthropogenic noise levels averaging 142 dB re 1 μPa around St Croix Island have directly affected penguins. African Penguins are known to be sensitive to underwater noise levels and avoid areas closer to seismic survey activities (Pichegru et al., 2017). In addition, recent findings revealed the importance of acoustic communication in group foraging in African Penguins (McInnes et al., 2020). Thus, increased ambient underwater noise levels could exacerbate inferred Allee Effects currently impacting the foraging performance of this species (Ryan et al., 2012), and contribute to the cumulative threats that impact African Penguins and their prey availability, such as competition with fisheries and climate change (Pichegru et al., 2010; Sherley et al., 2018; IPCC, 2022). Indeed, during the short period of our study, a population which at the onset of the study was the world's largest remaining African Penguin colony (*ca* 8500 breeding pairs, Sherley et al., 2020), located within 5–15 km of the most intense maritime traffic activities in the bay, more than halved which significantly correlated with the concurrent underwater noise levels in the bay associated with maritime traffic. High mortality of adult penguins was also observed during monthly beach surveys conducted in the bay during the study period (Pichegru et al., 2020, unpubl. report). As far as we are aware this is the greatest short-term decrease of an African Penguin colony on record. As of 2022, this population has now decreased by 85 % (*ca* 1200 pairs; Pichegru, unpubl data).

Increases in maritime traffic in Algoa Bay, and subsequent noise levels emitted, are correlated with the establishment and expansion of STS bunkering operations in the bay, with an average of 82 vessels being bunkered every month in Algoa Bay between April 2016 and January 2019 (Fig. S1). STS bunkering mainly attracts bulk carriers (Fig. 2), which are among the noisiest vessels in transit (Table 1, Veirs et al., 2016). It is therefore clear that this activity is a major contributor to the altered anthropophony of the bay. In addition to globally significant seabird populations, Algoa Bay is home to high population densities of dolphins and whales (Reisinger and Karczmarski, 2009; Bouveroux et al., 2018; Melly et al., 2018) and Cape fur seals (*Arctocephalus pusillus pusillus*), which are all sensitive to underwater noise levels (Duarte et al., 2021). The impact of STS bunkering activities in terms of noise pollution should, therefore, be assessed before authorisation is granted to operate. Indeed, South Africa is a Contracting Party to the Convention on Biological Diversity (CBD), and as such has been encouraged to, inter alia, conduct impact assessments for activities that may have significant adverse impacts on noise-sensitive species, combine acoustic mapping with habitat mapping to identify areas where these species may be exposed to noise impacts, mitigate underwater noise through the spatio-temporal management of activities, and consider thresholds as a tool to protect noise-sensitive species (CBD Decision XII/23). Similarly, Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS) have also been urged to undertake 'relevant environmental assessments on the introduction of activities that may lead to noise-associated risks for CMS-listed marine species and their prey', to prevent adverse effects on these species and their prey by restricting the emission of underwater noise, and – where noise cannot be avoided – 'to develop an appropriate regulatory framework or implement relevant measures to ensure a reduction or mitigation of anthropogenic marine noise'. The necessity for a precautionary approach has been emphasised in this context (CMS Resolution 12.14). As a Contracting Party to these and other relevant environmental treaties (such as AEWA), South Africa should clearly be taking measures to assess and address the impacts of anthropogenic underwater noise on African Penguins and other species – whether through project-level impact assessments or broader planning processes, and taking into account the precautionary principle. This includes the underwater noise induced by STS bunkering through associated increases in vessel traffic. The current working plan for the AEWA Benguela Coastal Seabirds International Working Group highlights concerns regarding the potential impacts of ship-to-ship bunkering and associated vessel traffic and recognises the need for these impacts to be properly assessed and for noise pollution to be reduced (AEWA Benguela Coastal Seabirds International Working Group 2021, https://www.unep-aewa.org/sites/default/files/document/benguela_iwg_report_workplan_final_2021.pdf).

However, to date, Ship-to-Ship bunkering is not listed as an activity requiring environmental authorisation in terms of South Africa's National Environmental Management Act 107 of 1998. As such, the 2014 Environmental Impact Assessment (EIA) Regulations are not applicable. STS bunkering operations require permission from the South African Maritime Safety Authority (SAMSA) in terms of the Marine Pollution (Control and Civil Liability) Act 6 of 1981 and a licence from the Transnet National Port Authority (TNPA) in terms of the 2009 Port Rules. Neither of these instruments provides a comprehensive framework (comparable to the EIA Regulations) for assessing the full range of direct, indirect, and cumulative impacts associated with STS bunkering. A Bunkering Code of Practice is currently being developed with a view to improving the management of STS bunkering in South Africa. However, it remains to be seen how effectively this will address gaps in the existing regulatory framework.

This local context contrasts sharply with the international efforts that are currently underway to explore avenues to decrease commercial ships' noise emissions, including the development of standard measurement protocols by the International Organization for Standardization (ISO, 2016, 2019). The IMO's Marine Environment Protection Committee also approved guidelines on reducing underwater noise from commercial shipping in 2014, which are currently being reviewed (IMO, 2021). Noise reduction measures may include reducing the speed of vessels underway or limiting time periods of ships' activities, including bunkering, in biologically important areas (e.g., Veirs et al., 2018; Williams et al., 2019). The use of quieting technologies (Simmonds et al., 2014), like new propeller designs ("Battling noise pollution, underwater | Hellenic Shipping News Worldwide," 2019) or four-strokes engines rather than two-strokes (Chahouri et al., 2022 and references therein), would also rapidly decrease noise levels emitted. International and trans-disciplinary and trans-institutional collaborations are required to effectively implement the necessary noise level reduction measures (Southall et al., 2017). Marine Protected Areas with spatial and temporal exclusions of noise emitting sources probably remain the most efficient way to protect marine life from the negative impacts of underwater sound (e.g., Simmonds et al., 2014).

5. Conclusion

The intensification of underwater noise levels in the African Penguin's foraging habitat was linked to the initiation and expansion of ship-to-ship bunkering activities which intensified the maritime traffic in the area. Noise levels were significantly related to the collapse of what had been the world's largest remaining colony of endangered African Penguins. The underwater soundscape of Algoa Bay, a hotspot of biodiversity, has now been profoundly modified. The situation is likely to worsen in the near future as global maritime traffic is predicted to increase by 240–1209 % by 2050 (Sardain et al., 2019) due to anticipated increased demands for goods associated with a projected increase in the global human population compounded by a general push for expansion of the Blue Economy in many

countries. Unless mitigated against, underwater ambient noise levels will also increase and these will be exacerbated in regions where vessels congregate, such as in ports and sheltered bays that provide maritime and refuelling services, with likely ecosystem-wide impacts.

CRediT authorship contribution statement

Lorien Pichegru: Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Writing – original draft. **Laëtitia Vibert:** Data curation, Formal analysis, Writing – original draft. **Andréa Thiebault:** Formal analysis, Methodology, Writing – review & editing. **Isabelle Charrier:** Methodology, Writing – review & editing. **Nicky Stander:** Writing – review & editing. **Katta Ludynia:** Writing – review & editing. **Melissa Lewis:** Writing – review & editing. **Tegan Carpenter-Kling:** Formal analysis, Methodology, Writing – review & editing. **Alistair McInnes:** Conceptualization, Data curation, Formal analysis, Methodology, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.scitotenv.2022.157878.

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