

Chapter 2: Marine Ecology						
Peer reviewer name	Page range	Line/s	Table/Fig/Plate	Peer Reviewer Comment	Note to authors from Review Editors	Responses to Peer Review Comments by authors
Babalwa Mqokeli	i	Line 13			The scope of the SEA focusses on BOTH the potential positive and negative (concerns) social / ecological impacts associated with the proposed development. Therefore reference to the SEA as addressing potential "concerns" offers a partial narrative; consider rewording to align with the broader scope and purpose of an SEA (such as evaluating opportunities, risks or impacts).	This has been corrected in the report. Now states that "THE CSIR was appointed to undertake a Strategic Environmental Assessment (SEA) to evaluate opportunities, risks and impacts associated with this proposed development ..."
Babalwa Mqokeli	iii	Line 1			The sentence includes low "wark" mark. I believe it should be low "water" mark?	Corrected
Babalwa Mqokeli	i - iv				Author to include "iconic map" (i.e., sensitivity map) communicating findings to policy makers in Executive Summary, and cross reference this map within this page and line	A new "Sensitivity assessment" section has been added to the report and is summarised in the Executive summary. Sensitivity map has been included in the Executive summary as well.
Babalwa Mqokeli	vii				Glossary Section has not been completed, either complete or remove	Glossary has been expanded to include all relevant technical terms
Babalwa Mqokeli	4	Line 11			Include Figure Caption (and number)	Figure caption added to the report (Fig. X. Air temperature measurements taken at 60 m above ground level at a site approximately 20 km NW of Boegoebaai. Source: Weather Atlas of South Africa (WASA) project (Mabille et al. 2014) cited by PRDW (2015).
Babalwa Mqokeli	100	Line 2			Sentence could be reworded/improved for clarity	Sentence has been reworded as follows: "Consideration has been given to potential impacts that the Boegoebaai development may have on the marine environment during the construction and operational phases of the project along with potential impacts from unplanned activities (e.g. increase in shipping traffic). "
Babalwa Mqokeli	104	Line 29			The sentence includes low "wark" mark. I believe it should be low "water" mark?	Corrected
Babalwa Mqokeli	i	Line 1 to last page			The study could benefit from a consolidated spatial classification of the receiving environment, tiered to represent areas of ecological, biological and environmental significance (in line with their vulnerability) as described in the report.	A new "Sensitivity assessment" section has been added to the report and is summarised in the Executive summary. A new "Sensitivity map" has been added as well.
Babalwa Mqokeli	overall comment				Please comment on the practicability and suitability of marine offsets in guiding decision making processes going forward. If practical and useful, please provide guidance	New section titled "Offset and/or compensation requirements" has been added to the "Summary & Recommendations" section of the report.
Greg Schreiner	1 - 3	Line 1 to last page			Remove all of the Introduction, the editors will introduce all the background context to the SEA in an introductory chapter of the integrated report	Introduction has been drastically shortened but a short explanation on the context of the study has been retained.
Greg Schreiner	4 - 85	Line 1 to last page			Description of the receiving environment needs to be synthesized to 5 pages, with the rest of the detailed baseline work added as an Appendix (Appendices will also be published so the depth of your work will be recognized)	Baseline work undertaken for this study has been fully integrated into the description of the affected environment. It is not possible and does not make sense to try and disaggregate this at this stage
Greg Schreiner	Overall comment				Aim for a final chapter, excluding Annexes and references, of ~30 pages.	I have shorten the report as much as possible but cannot get this down to only 30 pages.
Greg Schreiner	Overall comment				I would like to see aggregated sensitivity map/s i.e. a layer or two clearly showing where, from a marine/coastal ecology perspective, development might be constrained, and where development might be permissible (subject to future EIAs). The current disaggregated maps don't tell the non-expert/policymaker much.	A new "Sensitivity assessment" section has been added to the report and is summarised in the Executive summary. A new "Sensitivity map" has been added as well.

Greg Schreiner	108				Need more guidance on the potential for moving the breakwater north of the current proposal so that the impacts on seals can be avoided i.e., based on the best information at the moment, where could the breakwater conceivably be placed (obviously subject to future EIA/planning etc.)?	I have added a note on this to the Summary and Conclusions section.
Greg Schreiner	107 - 108	Line 1 to last page			The recommendations offer no guidance on what future EIAs should do or be conscious of. The recommendations offer very little guidance on alternative design options e.g., point about the breakwater above	A new "Sensitivity assessment" section has been added to the report which provides some guidance on this matter
Greg Schreiner	104 - 105	Line 1 to last page	Table 4-1		Aspects & impacts table needs to be converted into the table format provided at the outset (for consistency across chapters)	
Greg Schreiner	i - iv	Line 1 to last page			Executive Summary (ES) needs to be updated based on the above with one explanatory, iconic image/map to tell the story and draw a reader in e.g. aggregated sensitivity map, or alternative site suggested for breakwater north of Boegoebaai etc. ES must be drafted with zero background context (this will already be in previous chapters). Use punchy, clear language that a policymaker could easily interpret. Make clear, practicable suggestions on current development constraints and reasonable suggestions for better future designs, planning and EIAs.	A new "Sensitivity assessment" section has been added to the report and is summarised in the Executive summary. Sensitivity map has been included in the Executive summary as well.
George Branch	vii-ix			In list of acronyms several items are not defined, including GH2, Hm0, Tp. Add TOC and PSD? Check all acronyms and abbreviations are covered. The Glossary has not been done. It is important that it is undertaken and explains terms clearly.		Additional acronyms have been added. Glossary has been expanded. GH2Green Hydrogen Hm0significant wave height Tpwave period TOCTotal Organic Carbon PSDParticle Size Distribution
George Branch	iv			It's optional, but as far as I can see, neither fishing nor ranching are likely to be negatively impacted by the proposed development, and I suggest you insert words to this effect.		This is addressed in the impact table. Marine fauna and flora affected by construction and operational phases of the project include species that are important for aquaculture (kelp, abalone) and wild capture fisheries
George Branch	iv	3		The summary states: 'It is strongly recommended that consideration be given to identifying an alternate site for port development for this reason alone'. I am not convinced that potential influences on seals warrant this strong statement. The species is far from rare or endangered, the colony is small, and think too much emphasis is being placed on the effects on the seal colony. I feel the same about the effects on birds. Are there any important bird colonies there? As far as I know, the site is not a focal point for any birds that are likely to be sufficiently negatively affected to advocate placement of the development elsewhere.		Seals and seabirds are all protected species in terms of the Sea Birds and Seals Protection Act, 1973. The Act states that no person may pursue or shoot at or wilfully disturb, kill or capture any sea bird or sea on any island or within the territorial waters or fishing zone of the Republic or along the coast of the Republic between the low- and high-water marks. The colony at Boegoebaai is one of 16 breeding colonies in South Africa.
George Branch	iv			The Glossary has not been completed.		Additional terms have been added.
George Branch	1			I am missing an important bit of information, and that is how the proposed developments relate to Homewood Harbour and Peacock Bay. These two inlets constitute habitat that is rather different from the rest of the coast, being substantially more sheltered. Somewhere, I feel this information is needed.		Additional text has been added.
George Branch	11		Fig. 2.9	I think Fig. 2.9 is a superfluous repetition of Fig. 2.3. It is never referred to in the text and can be deleted. That will mean renumbering all subsequent figures.		Fig. 2.9 has been deleted.
George Branch	11	8-9		The word 'data' is plural. Please treat it as such. Search and correct as needed		Grammar has been checked and corrected where incorrect.
George Branch	12		Fig 2.10	It would be helpful to insert the precise position of the proposed development on this map.		The precise locations of the various infrastructural components of the project have not yet been determined and cannot be displayed at this point. We have inserted the proposed development area.

George Branch	14	15		As this IPCC 2021 citation refers specifically to chapter 12 in it, it may be better to cite (and omit the Ramasinghe et al chapter. Her is a cut-and-paste of the details: R Ranasinghe, AC Ruane, R Vautard, N Arnell, E Coppola, FA Cruz, S Dessai... 2021. Climate change information for regional impact and for risk assessment. This is Chapter 12 of the IPCC Working Group 1 6th Assessment Report. It summarises the implications of climate change for impacts and risk assessment.		Done
George Branch	14	24-25		Some citations are not listed in the reference list. I have not checked all citations, but both all four citations here are not listed and the same is true elsewhere; so you need to check all citations are listed and all listed papers are cited .		Done
George Branch	20	Rocky-shore section of report		It is important that surveys done as part of this report be documented in sufficient detail to allow repeat surveys at a later stage. That is quite well done for the sandy-shore surveys (Table 2-4). But I feel strongly that similar data be presented for the rocky-shore surveys		A table for the species observed in the rocky shore survey has been created. Additional columns (taxonomic and functional groups) were added for reproducibility.
George Branch	21	5-12		The species <i>Oxystele variegata</i> is no longer - it is two species, <i>O. impervia</i> and <i>O. antoni</i> . <i>Ralfsia verrucosa</i> is now <i>Pseudoralfsia verrucosa</i> . <i>Porphyra capensis</i> does not exist in South Africa: there are a bunch of other <i>Porphyra</i> spp. that do occur here. Please check all scientific names to make sure they are up to date.		Species names have been changed accordingly and checked to ensure that they are up to date.
George Branch	21	8		Suggest you delete <i>Parna</i> from the list as it is absent in the region under investigation.		Removed.
George Branch	21	14		The Boegoebaai area is quite large: if possible can you insert co-ordinates to indicate the exact position of the transects? It would be helpful to have these recorded in the event of repeat surveys being undertaken Table 2-2 does this for sandy-shore sampling; but I did not locate equivalent information for rocky shores.		Rocky shore sites are highlighted in Figure 2.11 in section 2.5 Biogeography within the Boegoebaai study area. A figure reference referral has been added.
George Branch	21	25		The quadrat area can't be 1m <sup>2</sup> if the quadrat is 0.5 x 1.0		The area from the 0.5 x 1m quadrat was converted to 1m <sup>2</sup> .
George Branch	21	29		I am unhappy that crustose and articulated coralline algae should be merged as a single functional group. They are very different in the way they operate and warrant allocation to separate functional groups. As a separate point, the reader needs to be tuned in to the genera including in 'corticated algae' and 'ephemeral foliose algae'.		Crustose and articulated coralline were separated accordingly. Examples of articulated algae, corticated algae and ephemeral foliose algae have also been included in the description.
George Branch	23		Fig. 2.16	Misidentification or miss-naming of species does not instill confidence in the rocky-shore surveys.		The figure was extracted from an old report, hence the outdated species name and general terms such as 'mussel species complex'. In-field identification was performed correctly and this figure does not reflect the in-field identification performed for this ecological survey.
George Branch	24		Fig. 2.17	For the list of groups in Fig. 2.17 to be at all usable, you need to provide a list of the species included in each category. There is no way this list can be used to repeat observations or make other comparisons, without knowing the species involved, I concede the 'Diatoms' may not be identified to any lower level, but most of the other groups should be.		Your suggestion for a table with all the occurring species was included into this section. Categories (taxonomic and functional) were included as additional columns into this table.
George Branch	26	8		This makes no sense. Increased wave action is associated with decreased desiccation.		Text has been amended accordingly.
George Branch	28	14-15	Fig. 2.22	I would suggest you omit the information for Brand-se-Baai and Groenrivier, as the number of species would have been severely compromised by the small sample size.		In the text, it was erroneously described as 'one quadrat per site' and since been amended to 'one transect per site' as these sites were focussed on qualitative rather than quantitative data. They are still included as it is used to show a tentative comparison of rocky shore habitats along the west coast.
George Branch	43	7-8		The following statement makes no sense: '- note: beach RSS1 has been colour-coded as an intermediate sandy shore and beach ISS1 has been colour-coded separately to indicate that it is a reflective beach (Figure 2.32).' In Figure 2.31 and elsewhere RSS1 is reflective and ISS1 is intermediate. Check also caption to Fig. 2.32		The graphs have been checked - this text no longer applies and has been deleted.

George Branch	46	19		I am not sure I agree with the statement 'It is important to include a range of sandy beach habitat types as certain taxa are unique to each habitat type'. As you point out, dissipative beaches normally have the richest fauna, and beaches of other states usually contain a subset of the species on dissipative beaches. Consequently, priority should be given to rehabilitation and conservation of dissipative beaches. This is an important point, because it emerges as a recommendation. I am open to disagreement with my view, but I think rehab and conservation will more likely be achieved if dissipative beaches are prioritised.		Agreed. Text changed accordingly.
George Branch	55		Fig. 2.41	(B) is not a reticulated sea star. It is a spiny starfish <i>Marthasterias africana</i>		Agreed. Text changed accordingly.
George Branch	Various places in text and captions on pp 62-68			To be consistent, capitalise the starts of bird common names. You do it sometimes but not always For e.g., White Breasted Cormorant. I have done these edits in the MS but you should check I have not missed some.		Amended.
George Branch	72	43		Are you in a position to draw any conclusions about the potential effects of the development on cetaceans? If so, I suggest it would be good to insert them at the end of the last para on Marine Mammals. This is just a suggestion; but I felt I was being left hanging regarding the potential impacts of the development.		Text added - regarding increased risk of ship strikes on cetaceans that utilise the area and increase in vessel noise.
George Branch	74 & 75		Figs 2.51 & 2.52	Text accompanying these figures indicates that these practices are seldom within 1 km of the shore. That is true. But the figures show the positioned about 50 km offshore and, hence, very unlikely to be affected by the development. I'd prefer the text to reflect this fact, unless you disagree with my conclusion.		Agreed. Text changed accordingly.
George Branch	76		Fig. 2.53	For similar reasons I suggest you add the words '...and will not be affected by the proposed development' at the end of the sentence.		Done.
George Branch	78	12		There is a very recent paper modelling larval anchovy and pilchard dispersal that can be cited: Rasehlomi T, Krug M, Mykssvoll M 2025. Larval anchovy and sardine dispersal patterns in South Africa's exclusive economic zone. <i>Frontiers in Marine Science</i> 11: 1508479 doi: 10.3389/fmars.2024.1508479		Done.
George Branch	105	23-25		The Southern Benguela does not extend to Angola. It cuts off at about Lüderitz. Beyond that is the Northern Benguela. See Hutchings et al 2009. The Benguela Current: An ecosystem of four components. <i>Progress in Oceanography</i> 83: 15-32		Amended.
George Branch	105	25		The rocky shore in this area does not include only one rocky-shore type. Exposed Rocky Shores may be the majority, but there are also sheltered shores in small bays, with a completely different fauna and flora. This is well documented in Blamey & Branch (2009) Habitat diversity relative to wave action on rocky shores: implication for the selection of marine protected areas. <i>Aquatic Conservation: marine and Freshwater Ecosystems</i> 19: 645-657		Amended.
George Branch	107			I feel the report rather fizzles out. The final section is headed 'Summary and Recommendations'. It does a fair job on the 'Summary', but apart from a single reference to the need to avoid the area based on the seal colony, it does not come up with firm recommendations. I suggest you add a final section that deals specifically with the Recommendations, so that they are distinct and clear. It would help if you can be more specific in suggesting which sections of the coast might be considered as more suitable.		A section on sensitivity has been added to the report (and is summarised in the Summary and Recommendations section).
George Branch	108 on			As a general principle, when listing multiple papers for an particular author, list single-author papers first, then dual-author papers alphabetically by second author, and then multiple-author (et al) papers chronologically, to ease searches for papers in the reference list. Each of the functional groups could be added to the glossary and explained there.		Noted. Relevant entries have been added to the glossary.

George Branch	108 on			A substantial number of cited references do not appear in the reference list. I have noted examples, but a thorough check is need to ensure all citations are listed, and all listed papers are cited. Please standardise all references: (1) Titles of article in lower case; (2) Supply volume and page numbers for all journal articles, (3) Italics all generic and specific names; (4) Ensure all refs are alphabetically sequence, e.g., De Waal under 'D'(5) Supplu sufficient detail that all 'gret area' references are locatable. I tried to locate several without success.		Noted - we have adressed all reference-related errors where possible.
George Branch	Overall commentary on the report			Overall, this is a comprehensive and well-written report. I do have some specific queries that have been listed in the Peer Review Comments Sheet, but most are more of an editorial nature than substantive, and I have handled those by using Track Changes on the Word version of the report. Trying to repeat them in the Peer Review Comments Sheet would be tedious and time-wasting.  There are some points that need separate mention:		
				1. The position and extent of the development relative to Homewood Harbour and Peacock Bay need to be clarified. Both of these sites are ecologically rather different from the bulk of the coast, and the extent to which the developments will impinge on them needs clarification. Homewood Harbour has in the past been identified as a site suitable for recreational and tourist operations, and it would be ideal if it could be left untouched by the development to all these activities to proceed.		
				2. Although I appreciate that this report is devoted to the marine realm, the two Buchu Berg kopjes are, as far as I know, important from a botanical perspective. You can check on whether that is correct or not. Assuming I am right, then potential impacts on them need to be factored in somewhere. If it is covered in the terrestrial component of the report, fine. If not ... it should be.		
				3. I agreed with almost all the central conclusions and recommendations, particularly the fact that there are probably less sensitive areas of the coast where the developments would be better placed. However, I did feel that the importance of leaving the seal colony untouched was overplayed. Seals are not rare or endangered. The colony is small and recent. The summary (p iv, line 3) states: 'It is strongly recommended that consideration be given to identifying an alternate site for port development for this reason alone'. I am not convinced that potential influences on seals (or seabirds) warrant this strong statement. The site is not a focal point for any bird colonies that are likely to be sufficiently negatively affected to advocate placement of the development elsewhere.		
				4.My main criticism lies with the section of the report dealing with rocky shores. The survey was confined to sites designated as 'Namaqualand Exposed Rocky Shores'. That is probably acceptable given that it is the dominant types of rocky shore in the vicinity of the proposed Boegoebaai development. However, it is certainly not the only type of rocky shore present. Blamey & Branch (2009) document different types of rocky shoe in the Namaqualand region and make the point that at least three types exist (sheltered, semi-exposed to exposed, and very exposed) and need to be recognized for conservation purposes. Even in the Boegoebaai area, there are likely to be representatives of all three shore types. Homewood Harbour and Peacock Bay are likely cases of Sheltered Rocky Shores. The problem can be dealt with in the report by (a) recognizing and describing the different types of rocky shore that do exist in the Namaqualand region (citing the Blamey and Branch 2009 paper); and (b) justifying concentrating on exposed shores on the grounds of their being the dominant (but not only!) type in Boegoebaai area.		
				5.My second point about the rocky-shore section of the report is that it is important that the data arising from the surveys be documented in sufficient detail to allow repeat surveys at a later stage. That is quite well done for the sandy-shore surveys (Table 2-4). But I feel strongly that similar data must be presented for the rocky-shore surveys, providing information at the level of species, not just in the consolidated 'catch-all' groupings of Fig. 2.17, which is useless for any comparative purposes. In general, I found the level of detail presented much more satisfactory for the sandy-beach component than for the rocky shores.		
				6.Somewhere in the report, information should be provided on where the raw data for the surveys will be stored, so that they can be tracked down in the future if anyone want to make comparisons.		

				<p>7.I feel the report rather fizzles out. Section 5 is headed 'Summary and Recommendations'. It dwells on the 'Summary' part, but apart from a single reference to the need to avoid the proposed area based on the seal colony, it does not come up with firm recommendations. However, it is pretty boring to find that Section 5 is just a verbatim repetition of the Executive Summary at the start of the report. I suggest you do two things: (1) Rewrite the final conclusions so that they express the conclusions in a briefer and more punchy manner, and (2) add a final section that isolates the Recommendations, so that they are distinct and clear. It would help if you can be more specific in suggesting which sections of the coast might be considered as more suitable. Even if you feel you are not in a position to be precise about that, you could introduce the factors that should influence site selection, including: Presence of MPAs and other conservation areas in the vicinity; Beach state of sandy beaches (with dissipative beaches being a priority of conservation); Wave exposure of rocky shores (with all three categories of sheltered, semi-exposed to exposed and very exposed requiring independent conservation); Position of fishing grounds; Potential clashes with terrestrial biodiversity areas (Buchu Berg Kopjes?); Presence of unusual marine habitats (Homewood Harbour?); Access to human settlements and infrastructure; Future tourism opportunities. You don't have to stick to this list, but using this approach would hammer things home better than your existing 'Summary and Recommendations'.</p>		
Nina Steffani	i	12		" <del>FHE</del> -The..."		Amended.
Nina Steffani	i	17		"Consultants (Pty)"		Amended.
Nina Steffani	i	34		" <del>Surfice</del> Suffice is to say "		Amended.
Nina Steffani	i	37		"immently.." = immensely?		Amended.
Nina Steffani	ii	10		"studied..."		Amended.
Nina Steffani	ii	17-18		"reflective-intermediate..."		Amended.
Nina Steffani	ii	43		"makes up a significant <b>portion</b> ..... of the interidal..."		Amended.
Nina Steffani	iii	1		"low <del>wark</del> water mark..."		Amended.
Nina Steffani	iii	2		"where they grade..."		Amended.
Nina Steffani	iii	7		Boegioebaai		Amended.
Nina Steffani	iii	9		"benthic infauna <del>assemblies</del> -assemblages are typically..."		Amended.
Nina Steffani	iii	10		maybe add polychaetes in brackets behind worms		Amended.
Nina Steffani	iii	21		add Critical Biodiversity Area in brackets after CBA as it is mentioned for the first time. CBA is also not in the glossary. Also add Ecological Support Area in brackets after ESA (alternatively turn it around and put the abbreviations in brackets)		Amended.
Nina Steffani	iii	17		delete "(soft bottom)" as it is repetitive		Retained (soft bottom) as 'unconsolidated' is a scientific term
Nina Steffani	iii	30		Ecological Support Area can be deleted here if it is spelled out in the previous section		Amended.
Nina Steffani	iv	15		"...that extends from <del>the</del> just south of Alexander Bay.."		Amended.
Nina Steffani	v		Point 2.6.6	Delete "Subtidal consoldated..."		Removed.
Nina Steffani	v			Add Table of Figures and Tables ?		Added after Table of Contents.
Nina Steffani	vii			I assume a glossary will be added?		Yes. It has now been added.
Nina Steffani	viii			Definitions for GH2 and Hm0 are missing		Added.

Nina Steffani	viii			International Union for the Conservation of Nature		Added.
Nina Steffani	ix			Definition of Tp is missing		Added.
Nina Steffani	1	8		Refer to Figure 1.2		Added.
Nina Steffani	2	5		Environmental Consultants (Pty) Ltd		Amended.
Nina Steffani	4		Temperature Figure under point 2.1.1	No caption, should be Figure 2.1. Consequently, captions for all following Figures need to be corrected.		Figure legend added.
Nina Steffani	4	20		"10-minute"		Amended.
Nina Steffani	5		Figure 2.2 Wind rose data	NASA WASA		Amended.
Nina Steffani	8	22-23		Figures 2.1 and 2.2 refer to locations on available wind datasets and wind rose not to wave height		Figure cross-reference has been corrected.
Nina Steffani	8	34		Figure 2.2 refers to wind rose not current velocities		Amended.
Nina Steffani	8	40		" and seas conditions..."		Amended.
Nina Steffani	8	40		A suggestion: Add <b>"For example</b> , TSS was measured..." at the start of the sentence		Amended.
Nina Steffani	10		Figure 2.8	Scatter plots ; Locations of Point 3		Figure legend was changed and error corrected.
Nina Steffani	11		Figure 2.9	Delete this Figure. It is a repeat of Figure 2.3. Consequently, all following Figure captions need to be corrected.		Figure retained in this section and removed from the previous section to avoid repetition.
Nina Steffani	11	21		and / or		Amended.
Nina Steffani	12		Figure 2.10	Add the location of Boegoebaai point. It is marked on the next map but I think it would be useful to have it on this map too. In addition, the proposed location of the port could be shown.		Amended.
Nina Steffani	14	1		Delete the first bracket		Removed.
Nina Steffani	14	1		"Increasing temperature is..."		Amended.
Nina Steffani	14	7		delete the first bracket		Removed.
Nina Steffani	14	9		delete the first bracket		Removed.
Nina Steffani	14	31		Sink et al. 2019a. There are three Sink et al. 2019 reports in the reference section (Sink et al. 2019a, b, and c). Check throughout document for correct citation. Is Sink et al. 2019c a correct reference?		Amended.
Nina Steffani	15		Figure 2.12	Hierarchical classification approach used <del>adopted</del> by Sink et al. (2018) (2019a) to classify marine ecosystem types around South Africa.		Amended.
Nina Steffani	15	9		"ecoregions..."		Amended.
Nina Steffani	16	13		"...have also <b>been</b> used to further sub-classify ecosystem types..."		Amended.
Nina Steffani	16	45		"...who <b>assigned</b> ...."		Amended.
Nina Steffani	16	15-19		According to the NBA (Sink et al. 2019a), the Southern Benguela ecoregion includes two sub-regions, <i>"the Namaqua and Cape (formerly referred to as the southwestern Cape) regions which are considered to separate in the area between Cape Columbine and Donkin Bay"</i> .		Paragraph has been rephrased accordingly.

Nina Steffani	17		Figure 2.13.	Is Sink et al. 2012 the correct citation? Should it not be Sink et al. 2019b?		Yes. It has been corrected.
Nina Steffani	17		Table 2-1	Are portions of the table missing? The caption mentions sampling protocols to be employed in each habitat types but this is not in the table.		No, the table legend was incorrect and 'sampling protocols' has been removed from the legend.
Nina Steffani	17	9		"...relied <b>on</b> an approach developed by..."		Amended.
Nina Steffani	18	2		"...of beach morphodynamic state <b>have</b> historically..."		Amended.
Nina Steffani	18	31		"...with fronds that extend all the <b>way</b> to the sea..."		Amended.
Nina Steffani	19		Figure 2.14	Intertidal and subtidal habitat types present in the study area as mapped through the National Biodiversity Assessment (Sink et al. 2019a <del>2018</del> ). <del>Coloured pins indicate sampling sites.</del> Sites that were surveyed as part of this study are marked with appropriately coloured pins.		Figure legend has been amended stating the various colour pins as suggested.
Nina Steffani	19		Figure 2.14	The identified areas of Namaqua kelp forest need to be added to the map		Namaqua kelp forests have been integrated into the Figure (map).
Nina Steffani	20	4-14-		This paragraph does not really fit under the heading "Rocky intertidal" as it mentions subtidal biota as well as sediment-dwelling communities. It could be either under the heading overview, rewritten to be specific to rocky intertidal shores or alternatively left out completely. If at all, it fits better to the section on subtidal unconsolidated substrata.		Paragraph has been removed from the rocky intertidal section and incorporated into subtidal unconsolidated substrata.
Nina Steffani	20	15-28		A suggestion: Combine the two paragraphs (line 15-18 and 19-28) by moving the sentence about the five distinct zones (lines 16-18) after the last text in line 28. It links better with the next paragraph.		Great suggestion. Amended.
Nina Steffani	21	3-4		"...is on <b>exposed</b> shores home to dense stands of limpets <i>Scutellastra argenvillei</i> <b>and/or</b> <i>Scutellastra cochlear</i> while more sheltered shores are defined by high densities of <i>Cymbula granatina</i> "		Text has been amended to what was suggested.
Nina Steffani	21	21		"...Sink et al. (2019a).....rocky intertidal habitat types present..."		Reference and text has been amended accordingly.
Nina Steffani	22	8-16		Delete as it is a repeat of the previous text.		It has been removed.
Nina Steffani	21-22	Site 21, Lines 40-44; Site 22, lines 1-8		This text does not read well. I would suggest to start the paragraph with something along the line of: "Analysis tools used included univariate (i.e. total species number per site, average species richness per shore height) and multivariate statistics. Multivariate analyses exploring similarities or dissimilarities among communities across transects....identify species driving community dissimilarities". Then follow with "For further analysis, intertidal species were grouped into six functional groups: grazers ..... and ephemeral foliose algae."		Introductory sentence has been added as per the suggestion for readability and clarity.
Nina Steffani	22	17-24		Delete this paragraph as it does not belong in this section		Paragraph has been removed.
Nina Steffani	22	32		After the end of line 32 add here: "To visualize differences in community composition across these sites, a heatmap of taxonomic groups was generated (Figure 2.17)."		Sentence has been moved to suggested paragraph.
Nina Steffani	24	10-11		<del>"This corresponds with observations in Figure 2.18."</del> This sentence seems unnecessary.		Sentence has been removed.
Nina Steffani	24		Figure 2.17	I assume Coral stands for coralline algae. Better to spell it out to avoid confusion.		Axis label has been amended.
Nina Steffani	27	8		Why cite Branch and Branch 2018b here ? These are actual results from the rocky shore survey.		Text has been amended for readability. The results corroborate the environment described by Branch & Branch (2018) and was thus cited accordingly.
Nina Steffani	27	9-11		"Site NER5 exhibited the greatest dissimilarity among shorelines, though its low-shore community was somewhat similar to its high shore." The latter part of this statement is not reflected in the nMDS plot. High and low shore communities at NER5 are clearly seperated.		Agreed. Text has been amended.

Nina Steffani	27	16		"proposed outfall"? Sites were selected to span the full geographic range of the rocky intertidal habitat type present in the study area. and not in relation to any outfalls.		Yes, it not for a proposed outfall and the text has been corrected. It is to assess the impact of a potential port development. Apologies.
Nina Steffani	28	2-3		<del>(Biceard 3 &amp; Clark 2014b-a, Laird et al. 2014, Pulfrich 2018)</del> . Delete, repeated		Deleted.
Nina Steffani	28	19		<del>Pulfrich (2018)</del> .		Reference was incorporated into the previous sentence.
Nina Steffani	29	11-13		This paragraph is more suited for the section on subtidal unconsolidated substrata (2.6.5)		Paragraph has been removed and incorporated into Section 2.6.5 Subtidal unconsolidated substrata as suggested.
Nina Steffani	30	28		"...intermediate-dissipative..."		Corrected.
Nina Steffani	30-32	Page 31, Line 41-46; Page 31, Line 1-2; Page 32, Line 1-11		The description of the general surf zone should probably be better moved to section 2.6.4 Nearshore Surf Zone Habitats		Text has been reordered and retained as it provides context for the rest of the section.
Nina Steffani	32	9		<del>Sabellides ludertzi</del> -Ampharete ludertzi; <del>Virgularia schultzei</del> Virgularia schultzei		Species names have been corrected.
Nina Steffani	32	20-26		This paragraph should be moved to the sandy beach survey result section.		Retained in this section as it provides context to the following text.
Nina Steffani	33	24-27		<del>The southern Namibian populations sampled south of Lüderitz were not significantly differentiated, but these were found to be genetically distinct from other T. granulatus population sampled to the South of the Hondeklip/Kleinsee break (Mbongwa et al 2019).</del> This is already stated in the previous sentence.		Amended.
Nina Steffani	34	31-33		". sediment samples..were collected from Stations 1, 5, and 10." Update as only five stations were sampled.		Station numbers have been corrected.
Nina Steffani	36	19-20		"On the west coast of South Africa, the intertidal isopod, Tylos granulatus." There seems to be some text missing in this sentence.		This sentence was meant to be stitched with the following sentence. Corrections have been made.
Nina Steffani	36	23		<del>...(a potential red data species, see Brown and Odendaal 1994).</del> Delete as this is discussed in detail in the previous section.		Amended.
Nina Steffani	37		Figure 2.27	Add an explanation what the different colours (yellow and blue) mean.		Amended.
Nina Steffani	38	8		Brackets are missing around Figure 2-3		Amended.
Nina Steffani	38	6		Explain briefly how to interpret the Dean's value. Could also be added into the sampling method section.		Done.
Nina Steffani	39		Table 2-3	Sorting, Skewness and Slope all have * indicating a footnote. I can't find these footnotes.		The asterisks were an artefact of an old report. These have now been removed.
Nina Steffani	40		Figure 2.29	"A) Griffithsius latipes" G. latipes is an amphipod.This photo seems to be of an isopod (Tylos?).		Corrected. Photo is in fact of Isopod sp. 1
Nina Steffani	40	4		worms (Polychaeta)		Amended.
Nina Steffani	40	6		"...and molluscs (1 taxon)..."		Amended.
Nina Steffani	40	17		"...the lowest abundances were recorded at sites ISS1 (reflective beach)...". According to Table 2-3, ISS1 has 171.33 ind./m <sup>2</sup>		Amended.
Nina Steffani	40	29		"...dissipative beaches (of similar widths) sampled <del>during</del> at Doringbaai,..."		Amended.

Nina Steffani	41	15		"This restricted distribution could point to the <del>to the</del> sensitivity..."		Amended.
Nina Steffani	43	4		For the rocky shore survey, a description of multivariate analysis was provided. For consistency, add a very brief description here too.		To avoid repetition reference to the relevant text in the previous section detailing the MDS technique has been inserted.
Nina Steffani	43	13		"...clustering <b>separately</b> from those collected at stations three, four, and five..."		Amended.
Nina Steffani	43	26		"...per trap at the two beaches sampled..."		Amended.
Nina Steffani	44		Figure 2.34	T. granulatus carapace width frequency distributions at Boegoebaai beach sites. <del>sampled during the 2024 field survey</del> . Note that a zero-catch rate was recorded for DISS1.		Retained time period sampled but incorporated 'Note ...'
Nina Steffani	46	16-20		Should this recommendation not rather be moved into Chapter 5 Summary & Recommendations		Done.
Nina Steffani	47	14		"...mixed shores in the Namaqualand..."		Amended.
Nina Steffani	47	35		"...breaker zone where they grade into more..."		Amended.
Nina Steffani	47	38		"Experimental seine netting <b>on four of the all</b> -intertidal beach..."		Amended.
Nina Steffani	48	8		"...higher wave action <del>that than</del> sites..."		Amended.
Nina Steffani	48		Table 2-6	<del>Parablenius</del> -Parablennius cornutus		Amended.
Nina Steffani	49		Figure 2.36	Correct the species key using P. cornutus in italic		Figure corrected.
Nina Steffani	49	11		The correct Figure to refer to is Figure 2.11		Sentence was removed and thus, no longer needs correction.
Nina Steffani	49	13		"Benthic epifauna refers to fauna <del>and flora</del> that inhabits..."		Amended.
Nina Steffani	49	27		This sentence isn't really fitting as the description above is on macrofauna. A link could be made to the importance of the epi- and infauna as food source, then it would read better.		Sentence has been removed.
Nina Steffani	51	13		"...as no subtidal sampling <b>was</b> undertaken..."		Amended.
Nina Steffani	51	14		<del>"(Duna et al. 2016, Mostert et al. 2016, Tunley 2016)</del> The studies documented a total..."		Amended by removing brackets and retaining the different references to read 'Duna et al. (2016), Mostert et al. (2016) ... documented a total of 63 benthic macrofauna taxa ...'
Nina Steffani	51-53		Table 2-7	Check the species names on WORMS as some of the species have updated names (e.g. Pherusa swakopiana changed to Stylarioides swakopianus) and note that Afrophaxas decipiens and Phaxas decipiens are the same species; the same applies to Moerella tulipa and Tellina gilchristi.		Species name has been checked on WoRMS and the table has been re consolidated.
Nina Steffani	54	1		<del>SUBTIDAL CONSOLIDATED</del> -SUBTIDAL CONSOLIDATED SUBSTRATA		Spelling corrected.
Nina Steffani	56-58		Section 2.6.7	The first three pages of this section have a formatting problem, most likely linked to the cross-references to the Tables.		Formatting has been fixed.

Nina Steffani	57	4-6		"Pentads with the smallest section of coast (2845-1635 and 2850-4 1640) support <del>the</del> few waterbirds (10 and 29, respectively). Only 20 truly "marine" or "coastal" species have been <del>being</del> recorded in the area...."	Amended.
Nina Steffani	59	7-9		"Many anthropogenic activities and uses of the marine environment (including those likely to be associated with the development of a new port and SEZ at Boegoebaai) pose a serious threat to these already threatened seabirds."	Bracket added.
Nina Steffani	56	2-3		"A total of 72 water birds have been recorded in the Boegoebaai study area according to the <b>South African Bird Atlas Project</b> (SABAP2) database, which is a citizen..."	Abbreviation written out and incorporated.
Nina Steffani	65		Figure 2.43	"...Cape, Bank and <b>White-breasted</b> cormorants..."	Amended.
Nina Steffani	69	4-7		"Based on the results of this study, no overlap was evident between identified Marine Important Bird Areas (MIBAs) or important distribution areas for species for which good tracking data for identified threatened coastal seabird species breeding in South Africa was available." Rewrite, difficult to follow.	Sentence rewritten to read: "Based on the results of this study, no overlap was evident between identified Marine Important Bird Areas (MIBAs) and important distribution areas for certain seabird species. This applies to threatened coastal seabird species breeding in South Africa for which good tracking data was available. "
Nina Steffani	72	25-26		"This remote and relatively undisturbed area is part of the Benguela Current ecosystem supports a rich diversity of marine life, including several species of marine mammals." Delete as this is an introductory sentence or move to the start of the chapter.	Moved to the start of the Marine Mammals section.
Nina Steffani	73		Figure 2.50	Figure Caption repeated twice	Removed duplicate sentence.
Nina Steffani	73	10		"...and is more uniform <b>in</b> respect..."	Amended.
Nina Steffani	73	12		"....productive <del>as a result</del> , compared to..."	Amended.
Nina Steffani	74	2-3		"...descriptions provided by (Sink et al. (2019c))." Should the citation not be Sink et al. 2019a?	Reference amended.
Nina Steffani	75	16-17		"Deployment of longlines takes place at night and are recovered by hauling during the day for approximately 8 ??? (Petersen 2008)." Something missing in the sentence.	Text corrections made.
Nina Steffani	76	15		"...around the South African coast with peaks..."	Amended.
Nina Steffani	76	16		"...southwestern Cape and southern Cape <b>coastlines</b> and..."	Amended.
Nina Steffani	83	13		"...increase in illegal fishing activities, <del>which</del> contributed to further declines in abalone..."	Amended.
Nina Steffani	89		Figure 2.64	"Figure 2.64. Map of scaled intensity for the recreational shore fisheries (left) and subsistence harvesting (right) in the screening <b>area</b> and around the proposed site location for green hydrogen developments (Sink et al. <b>2019a</b> )." Maybe shorten to Boegoebaai study area	Text corrections made.
Nina Steffani	90	15-18		I suggest to combine these two sentences as they essentially say the same and some part of the first sentence is repeated in the next paragraph. "These Marine Sector Plans specify and outline the spatial claims and interests of each sector in the South African marine environment from a national point of view."	Sentences combined and amended as suggested.
Nina Steffani	91	1-7		Specify that this ETS status applies to the habitats of the Boegoebaai area. Its shown in the Figure but needs to be spelled out in the text as well.	Amended.

Nina Steffani	94	18-19		"South Africa has 18 recognised EBSAs excluding those that extend into the high seas area and some protection in 16 of these 18 areas." Something missing in this sentence?		Rephrased for clarity: "South Africa has 18 recognised EBSAs excluding those that extend into the high seas area. Of these recognised EBSAs, 16 of these 18 areas have some protection. "
Nina Steffani	95		Figure 3.2	Source of the map? Sink et al. 2019a?		Data source has been added. Map made by Anchor.
Nina Steffani	97		Figure 3.3	Add source of the map		Data source has been added. Map made by Anchor.
Nina Steffani	98		Figure 3.4	Add source of the map		Data source has been added. Map made by Anchor.
Nina Steffani	98	12		"A compatibility matrix has thus <b>been</b> compiled as..."		Amended.
Nina Steffani	100		Table 3-2	Add a brief interpretation of the table. i.e. are there any sea-use activities not compatible with CBA-N, CBA-R or ESA that would potentially be applicable to the proposed project (e.g. new port, renewable energy installations, desalination, etc).		Added referral to previous table for these descriptions.
Nina Steffani	100		Table 3-2	Add source of the table		Source added.
Nina Steffani	102		Figure 3.5	The key does not have any color-coding for the different areas withing the Boegoebaai study area nor is the location of the MPA shown		Map has been amended with colour codes. MPA was shown in dark blue (bottom right) but has been made more apparent.
Nina Steffani	103	2		"Consideration has been given to potential impacts <del>of</del> the Boegoebaai development may have..."		Amended.
Nina Steffani	104		Table 4-1	"Routine discharges to sea from construction vessels/machinery and local reduction in water quality". Appears twice in the table under "Building of breakwater, jetties..."		Repetition removed.
Nina Steffani	106	9		" <b>Suffice</b> is to say that the bathymetry..."		Amended.
Nina Steffani	106	17		"...bathymetry profile of the shoreline is also <b>likely</b> to be suitable for ..." Has been misspelled several times in the document		Amended and checked throughout the document.
Nina Steffani	General			Check all citations. Citations are different throughtout the document (e.g. Branch and Branch or Branch & Branch). Select one format and apply to all.		Has been checked and corrected.
Nina Steffani	General			There are a number of spelling mistakes. I highlighted several but probably not all. Proof-reading needed.		Spelling errors reviewed and corrected.
Paul Lochner	Overall Comment				<p>The report has very detailed descriptions of the affected environment, has numerous maps and graphics on aspects of the affected environment, and is well referenced. There needs to be more integration of the information and, most importantly, there must be an integrated interpretation of coastal and marine sensitivity.</p> <p>Two iconic integrated <u>maps</u> are needed and will provide a very accessible summary of the report (comments are provided below on the proposed map content):</p> <ul style="list-style-type: none"> <li>•Marine spatial planning context</li> <li>•Coastal and marine sensitivity mapping.</li> </ul> <p>CSIR can assist with creating iconic integrated maps, if necessary.</p>	A sensitivity assessment and section summarising the outcomes has been added to the report.

Paul Lochner	Overall Comment				<p>For the sensitivity mapping, I would recommend creating two distinct maps - one for the coastal area and another for the offshore area.</p> <p>• Coastal Sensitivity Map: While some data is already included for this, it requires further synthesis and improvement by integrating various sources to provide a more comprehensive picture of coastal sensitivities.</p> <p>• Offshore Sensitivity Map: This map should focus on offshore features, such as the Thukela Banks (if relevant to the study area) (as mentioned in comment below), Existing Marine Protected Areas (MPAs), Additional offshore sensitivity data from SANParks.</p>	These have been added to the report.
Paul Lochner	82-83				<p>Section 2.7.7. Linefish: There are two Figures included here, but they are not mentioned in the text or cross-referenced in the text. In particular, Figure 2.59 shows "commercial linefish fishing Intensity" in the Boegoebaai area from Sink et al 2019. Please discuss this in the text. Is this fishing from the shore? By whom? How is this intensity measured? What does "100" intensity mean? It is difficult for the general reader to understand what this Figure is showing, without some explanation.</p>	This has been rectified.
Paul Lochner	90-93				<p>Marine Spatial Planning. Here it would be useful to see a regional map of the National Biodiversity Assessment and the "Threat Status" in the context of the Boegoebaai SEZ in the wider coast. It looks like the entire offshore marine area is rated as "vulnerable" regardless of where one goes. Please add a regional map.</p>	Regional map added to the report.
Paul Lochner	94				<p>Please show the location of the Orange Cone EBSA on a regional map. Please also label other features mentioned in the text, such as the Orange Cone EBSA, Thukela Banks and the extent of the Orange River Mouth Ramsar site between Namibia and South Africa.</p>	Added to the report. Thukela banks are off the KZN coast of South Africa and were referred to in the text as an example - for this reason they are not mapped here.
Paul Lochner	94	34-35			<p>Section 3.3. To confirm, these areas of 'Conservation' and 'Impact Management' zones are south of the Orange Cone EBSA, right? This is what the text implies. Please clarify.</p>	Done.
Paul Lochner	94	34-35			<p>Section 3.3. Please add an explanation of what these terms 'Conservation' and 'Impact Management' mean? What are the planning and management implications?</p>	Added to the report.
Paul Lochner	95		Figure 3.2		<p>please clarify in the Figure title if these 'Conservation' and 'Impact Management' zones are part of the Orange Cone EBSA, or located south of it? (see earlier comment)</p>	Done.
Paul Lochner	Overall comment on section 3 (marine planning)				<p>Please provide a regional "marine planning" map, that synthesizes available information such as the Orange River cone EBSA, the Orange River Ramsar site, the MPA to the south, and key features of particular significance in terms of CBAS etc.</p>	Added to the report.
Paul Lochner	96	30			<p>The authors express the need for caution when interpreting the CBA maps. What is needed is an integrated interpretation of the sensitivity of the coastal and marine environment, given all the information that has been reviewed in this study.</p>	Relevant section added to the report.

Paul Lochner	108	35-38			Re: seal colony - Given that the seal colony is relatively recent (since 1991), that seals are “least concern”, that the colony is relatively small, and that there are examples of Cape fur seals living in ports and in close proximity to harbours and shipping, it seems exaggerated to state that “It is strongly recommended that consideration be given to identifying an alternate site for port development for this reason alone.” (i.e. because disturbance of the seal colony). This needs more discussion. For example, how could an adjacent harbour integrate with seal conservation? Is there potential for the seal colony to continue to exist south of the harbour breakwater? Also, what is it about that particular location that attracts the seals? Maybe there are similar locations along the coast? How adaptable are seal colonies to moving? The issues around the seal colony need a more balanced and investigative discussion.	Comment addressed and further discussion added.
Paul Lochner	i	12			“THE CSIR...” should be “The CSIR...”	Corrected.
Jabulai Maluleke	Page 104	Table 4-1			The table provide detailed aspects and potential Impacts, however it does not provide the details on how these potential impacts can be mitigated.	Please note that this is only an impact register as per the Terms of Reference. The impact register entails a high level survey of impacts associated with project activities as opposed to an impact assessment which further handles details of project activities, their potential impacts and associated mitigation measures. This is why no mitigations were included in Table 5.1.
Jabulani maluleke	Page 106	Line 2			Summary is well covered, however it is no very clear to get what the author is recommending on the important features and constraints likely to be imposed by marine biodiversity on development.	

<b>Chapter 3: Integrated Terrestrial &amp; Aquatic Ecology</b> (Please note that the page and line numbers in the final document no longer correspond to those listed below)					
Peer reviewer name	Page range	Line/s	Table /Fig	Note to authors from Review Editors	Response
Babalwa Mqokeli	iii	4		Consider also explicitly stating that groundtruthing was conducted, even if limited. This would clarify that ground-truthing did take place, albeit to a limited extent	Added "...with limited time for ground-truthing / calibration of mapped wetland areas, ..."
Babalwa Mqokeli	Overall comment			Just a reminder to the Authors to include the integrated sensitivity map ("iconic map"), once compiled, communicating findings in the Executive Summary(ES), and cross reference this map in text. <b>Also refer to the sensitivity mapping figures for each theme (i.e., aquatic, fauna, avifauna, vegetation etc) as contained in the report.</b>	<b>At the time of finalising the report</b> the integrated sensitivity map using the maximum rule did not yet have the revised sensitivity map of the mammals, reptiles and amphibians. The map is thus a preliminary integrated map. A table with areas covered by the classes will be provided once the integrated map has been finalised.
Babalwa Mqokeli	iv	33		I understand the methodology for the bats assessment primarily relies on a desktop approach, however the Bats site visit on 18 February 2025 suggests some level of field work. Should this not be clarified here?	Added text to include the site visit and role it played in ground-truthing the sensitivity map.
Babalwa Mqokeli	iv	34		The phrase "which should prevent the proposed development from proceeding" may unintentionally imply that the project is fully cleared to move forward, consider adding that this refers to the project's progression towards the Environmental Impact Assessment stage, in line with the Bats Report.	Added requested text. ...."proposed development from proceeding towards the Environmental Impact Assessment process."
Babalwa Mqokeli	vi	14-16	Figure A	It would be great to understand what these percentages of the site sensitivity classes translate to in terms of footprint size. Is this, for example 15.4% of the 33 500 ha study site? And therefore 5 159 ha of transformed habitat? This needs to be specified.	Areas have been included in the figures.
Babalwa Mqokeli	1	28		Add "primarily" to the statement "The aquatic report is a broad-based desktop assessment...". This is "The aquatic report is <b>primarily</b> a broad-based desktop assessment..."	Added 'primarily'
Babalwa Mqokeli	Overall comment			Perhaps add an opening statement in the ES and Introduction of the report that this Chapter covers the Vegetation & Flora, Fauna, Birds, Bats and Aquatic Ecology themes assessed and reported in separate individual reports, and integrated into this Terrestrial and Aquatic Ecology Chapter (i.e., this document). This will provide clarity on the reference to documents e.g., "the aquatic ecology report", "the bat report" etc., mentioned throughout the report.	Statement added in Executive Summary and Introduction.
Babalwa Mqokeli	9		Figure 6	Consider changing some of the colours of the Vegetation Types so that they are easily distinguishable from the others	Some of the colours have been changed to make them more easily distinguishable.
Babalwa Mqokeli	12	15		Perhaps include as an Annexure the description of what each of the 10 criteria met are (i.e., A1a, A1b, A1d, A2, B1, B2, B3a, B4, D1a and E) and refer to it here, to inform the reader.	Explained in footnote.
Babalwa Mqokeli	13	24		If possible, please provide an indication of the buffer size around the Boegoeberg twins.	Considering Paul's comments on the delineation of the conservation area, I have deleted the reference to a buffer zone. If the CSIR intends to propose a major improvement in the delineation, I would simply need a reference where the layout of the "proposed conservancy area" is provided. <b>Please provide me with a reference to a chapter compiled by the CSIR.</b>

Babalwa Mqokeli	13	31-32		The statement describes that the rocky coastline is the most sensitive section of the shoreline but does not explicitly provide reasoning as to why this is the case. It is stated that it is sensitive from a biodiversity and heritage perspective and mentions the presence of the Cape fur seal colony but it does not explain why/how these factors contribute to its sensitivity.	Reasoning supplied: presence of CR Crassula sp.; nesting site of EN bird sp.; breeding colony of Cape fur seal a protected sp.; also includes CR vegetation type.
Babalwa Mqokeli	14		Figure 11	I'm not sure what the numbers 4 & 5 in <b>black</b> font of Figure 11b relate to.	Removed.
Babalwa Mqokeli	29		Figure 22	The BBSEA Zoning key used and overlaid onto the Fauna Sensitivity key makes it difficult to read/interpret the map. Consider adjusting the layering and colour schemes	At the time of finalising this report we were still waiting for the revised map from the specialist.
Babalwa Mqokeli	32		Figure 24	Is it correct to assume that no areas of "High" sensitivity occur within the project site in Figure 24a and b. I could not see the colour associated with the High Sensitivity on the maps	Colours have been changed. <b>Plant Theme:</b> This map does indeed have 2 very small spots of High. You can see one of them in the middle leg of the Medium Sensitivity - close to the top part. <b>Relative Terrestrial Biodiversity Theme:</b> In this case there is no medium sensitivity.
Babalwa Mqokeli	Overall comment			<p>The report does address several key aspects of the scope of study (i.e., description of key habitats; environmental sensitivities such as Key Biodiversity Areas and SCCs; and the DFFE Screening Tool &amp; Sensitivity Analysis), but there are some gaps in terms of:</p> <ol style="list-style-type: none"> <li>1. Explicitly mapping land use dynamics and change trends over time as they relate to aquatic, fauna, avifauna &amp; bats.: <ul style="list-style-type: none"> <li>- no clear historical or current land use change analysis</li> <li>- It does not forecast how land use trends (in the absence of the proposed development) might affect these aspects over time</li> <li>- If this is not feasible, then a statement to that effect must be outlined</li> </ul> </li> <li>2. No clear recommendations to enhance positive impacts and reduce negative impacts for avifauna</li> <li>3. While the report identifies sensitive habitats, it does not provide recommendations for how the port and SEZ should be designed or laid out to minimise avifaunal impacts.</li> <li>4. No alternative development scenarios are considered in relation to avifaunal sensitivities.</li> <li>5. No clear or specific recommendations to guide future site and project specific EIAs have been included from an avifauna perspective in the Discussion and Recommendations section</li> </ol>	<p>Comments from avifauna specialist incorporated.</p> <ol style="list-style-type: none"> <li>1. Mapping of land use dynamics and change trends over time relating to aquatic, avifauna, bats and other fauna is probably not feasible.</li> <li>2. It is widely recognized that vegetation degradation is occurring at an alarming rate in the region due to anthropogenic factors and climate change. This habitat deterioration will inevitably also impact avifaunal diversity and abundance.</li> <li>3. It is doubtful whether there are any positive impacts of the proposed development on avifauna. Mitigation measures have been incorporated.</li> <li>3. The background information on the components of the proposed port and SEZ was far too sketchy to allow any recommendations on layout or design. No footprints were given. According to the briefing note from the CSIR the SEA was to <b>provide the framework to guide the planning</b> of the BB Port &amp; SEZ and <b>not for the specialists to provide the planning</b></li> <li>4. The evaluation of alternative development scenarios is not included in the scope of the avifaunal SEA process. Instead, such alternatives should be assessed for specific development processes.</li> <li>5. Sections in the report have been revised to address this comment.</li> </ol>
Paul Lochner	vi		Figure A	<i>Areas covered by the various sensitivity classes</i> - add the areas (in hectares) for the categories of VH, H etc	Areas have been included in the figures.
Paul Lochner	Overall comment			<p>Sensitivity mapping: The necessary inputs are there for the sensitivity mapping. Great that Luanita is preparing the integrated mapping. A table must be added of areas of different categories (VH, H, ...) based on the integrated mapping. Generally, we need more input on actual areas affected (in ha).</p>	<b>At the time of finalising the report</b> the integrated sensitivity map using the maximum rule did not yet have the revised sensitivity map of the mammals, reptiles and amphibians. The map is thus a preliminary integrated map. A table with areas covered by the classes will be provided once the integrated map has been finalised.

Paul Lochner	Overall comment			<p>Assessment of sensitivity: For Terrestrial ecology, broadly speaking, the authors are saying everything is Very High, except if transformed by mining (which is about 15% of the study area).</p> <p>In my opinion, this is overly cautious, as there are areas next to the transformed areas that are experiencing quite severe wind-blown sand inundation; and are “disturbed” (if not “transformed”); and the disturbance is getting worse, as Pieter explained (i.e. the wind-blown sand problem is spreading). The ideal would be if the wind-blown sand problem could be reduced/abated, through stabilization of the transformed areas. This would probably require some trade-offs and prioritization of which disturbed areas are most important to try protect from wind-blown sand.</p> <p>My point is that if the majority of the area (~75%) is VERY HIGH terrestrial ecology value, then it does not help the planners and decision-makers understand where to focus rehab and protection. Surely the area shown as VERY HIGH is not all equally VERY HIGH? From a planning perspective, it is more useful if the VERY HIGH could be graded into VERY HIGH and HIGH.</p>	<p>For the preliminary broad-scale vegetation map the areas severely covered by wind-blown sand were included into the transformed category. These are primarily areas where the shade-netting has been almost entirely buried by wind-blown sand. These areas had a very similar species composition to the mine-transformed areas - thus they belong to the same plant community.</p> <p>According to Pieter, once the shade-netting was buried another layer of shade-netting was erected on top of the first layer.</p> <p>Yes, it would be ideal if the source of the wind-blown sand could be stabilised. However, currently it is not only the transformed areas that are sand sources. Many of the formerly natural areas have now been covered with sand that act as secondary sand sources.</p> <p>Rehabilitation in this very arid area is problematic (see documents by Johan Grobler and thesis by Desmet) and stabilisation might have to be use geotextiles or mechanical or chemical approaches. It also has to be kept in mind that the proposed development will likely cause additional areas of wind-blown sand.</p> <p>Agreed, the entire area classified in the broad-scale assessment as VERY HIGH might not be VERY HIGH, but we do not have a fine-scale vegetation map to rectify this. Neither do we have point data for the SCC across the entire site. This highlights our recommendation that an in-depth, fine-scale assessment of the vegetation has to be done before any proper planning can be done - thus, before you even get to the EIA stage.</p> <p><b>Please keep in mind that you requested a desktop study and a desktop study in such an under-sampled area can never supply you with sufficient grounds to make the far-reaching decisions that you are requesting. Without sufficient data the precautionary principle has to be applied. At SEA level is is best to be conservative.</b></p>
Paul Lochner	Overall comment			<p>Recommendation for a revised conservation area network in the SEZ study area: The “proposed conservancy area” shown in the conceptual layout provided by NCEDA does not correlate with actual features. That is obvious. A key output from this WP1 must be a proposed geospatial plan to create a conservation network that matches the findings and knowledge of the authors (and the integrated sensitivity mapping). It will not be the final word on this. But we have the people and knowledge to make a major improvement on the current “proposed conservancy area”.</p>	<p>Looking forward to receiving the revised conservancy area. Will the conservancy area be classified as a formal 'set-aside' that may not be touched by future developments?</p>
				<b>Peer Reviewer Comment</b>	
Norbert Juergens	1	1		<p>General: I spent three days with the “Work Package 1” of the Strategic Environmental Assessment. I read the 49 pages. I also downloaded the five “Specialists reports” to have a better understanding of the data and their interpretation. However, see the comment regarding one missing specialist report: page 3, lines 34-40! I regard the report as a good “pre-study”, based mainly on desktop assessments and minor field visits. The compilation of readily available data presents a good overview and allows to design more detailed future studies including field assessments, where appropriate. The presented data and the interpretations make sense, in my eyes and I can support the proposed valuations. A few more observations regarding “Work Package 1”: (i) I missed an integrated final conclusion. Only in Table 3 the four terrestrial reports are sort of combined. (ii) The recommendations made in column 3 of Table 3 are not very concrete. (iii) The need to set up monitoring is mentioned several times, however, again, no integrated proposal is tabled. I found a few minor opportunities for improvements, listed further below. I first focus on several overarching observations.</p>	<p>(i) Final integrated conclusion has been expanded.</p> <p>(ii) Agreed. Without being provided with a development footprint, information in column 3 cannot be very specific.</p> <p>(iii) The monitoring protocol will be developed at the EIA phase.</p>

Norbert Juergens	1	1		<p>All assessments are mainly desktop studies based on readily available knowledge. Short site visits in 2024 could only observe various states of recovery following the centennial drought with peak degradation from 2015 to 2019. During the past decades, the study area has never been an area of greater interest for biologists and ecologists and hence the area is poor in data. In addition, the area west of the tar road was inaccessible (if not a major effort was invested to get special permission by the diamond mines). Because of these shortfalls, a desktop study, even a good one, is an insufficient basis to take decisions, but proper field assessments are necessary.</p>	This statement supports our findings.
Norbert Juergens	1	1		<p>Please consider to integrate the following aspects into your assessment: Work Package 1 is named "Terrestrial and Aquatic Ecology". The "Terrestrial Ecology" is subdivided into taxonomic chapters. A chapter dealing with "Ecosystem Processes" is missing. Such a chapter is however essential to meet the overarching label "Ecology". This is a shortfall of essential relevance and should be corrected: Almost the entire terrestrial ecosystem in the study area is associated with strong to extreme aeolian erosion, transport and sedimentation, caused by high wind speed and the already strong to extreme transformation of the land surface by mining. The resulting abrasion, burying, and surface contamination all damage plants. This sometimes causes complete destruction of vegetation, in other cases there may be a diffuse and slow decrease of biomass and biodiversity (see preprint: <a href="https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5189871">https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5189871</a>). These ecosystem processes may discriminate the area (in terms of sensitivity / vulnerability/ utilizability) stronger than their species composition: Because of the predominant wind coming from the southern quadrant all damaging effects impact on areas in the downwind area, north of the source area. For all planning, the trajectories of sand and dust transports should be calculated. The intensity of sand mobilization and the impact along the path should be part of the assessment, as well as measures to immobilize aeolian sand before it impacts on precious ecosystems and biodiversity, further north. In the overarching frame of an integrated approach, the environmental footprint of the entire project may well be more strongly improved by efficient aeolian sand trapping measures to protect the Orange River Estuary, the Alexander Bay lichen field and the other centres of endemism in the West Gariep centre than by the detailed design of the plans in formerly transformed mining areas.</p>	<p>Added a section on "Ecosystem Processes".</p> <p>We fully agree that the trajectories of sand and dust transports should be modelled and it has been mentioned in a number of places. Once this information is available informed decisions can be made on whether the sand would impact irreplaceable ecosystems and biodiversity, further north and if so, where to stabilise the sand.</p>
Norbert Juergens	1	1		<p>Please consider to integrate the following aspects into your assessment: The part of the study area located west of the tar road has already experienced medium to extreme degradation during the history of diamond mining. In parts of the mining area the former biodiversity and ecosystems has been completely removed. In sharp contrast, the area east of the tar road was only impacted by small scale livestock farming which perhaps intensified during the past two decades. This problematic legacy strongly recommends to establish all planned infrastructure in the already transformed mining landscapes, west of the tar road.</p>	The statement was made in several section. It has also been included in integrated recommendations.
Norbert Juergens	1	1		<p>Please consider to integrate the following aspects into your assessment: If the Boegoebaai Port and Special Economic Zone will be established it is predictable that other additional developments will follow which are not part of the present assessment. Therefore, it is proposed to give the areas east of the tar road a conservation status.</p>	This aspect is being looked into in the Offset Report by Mark Botha.

Norbert Juergens	1	1		Please consider to integrate the following aspects into your assessment: From Angola to Port Nolloth there are only two mountainous structures located right next to the Atlantic Ocean: The two Boegoe Twins and the Laguneberg, 800 km further north. Only these qualify as fog oases comparable to the Lomas of the Atacama. The unique environmental setting supports a high probability that the environmental filter or even speciation generated a unique phytocoenosis or even endemic species. Therefore, the Boegoe twins require a careful assessment, for example of the lichen flora, and extraordinary protection.	Added under Western Gariep Plains Desert.
Norbert Juergens	vi	1		Mention the number of CR plant species, at least in rough dimension.	Estimate provided.
Norbert Juergens	vi	13		Please consider to add DFFE in front of screening tool, otherwise the reader who did not read your detailed report is lost.	Has been added.
Norbert Juergens	vi	13		Please consider to introduce the term "Plant Theme".	"Plant Theme" explained as footnote.
Norbert Juergens	2	46		Consider to add a comment that most of the Richtersveld suffered from an extreme drought during 2011 to 2019 which killed many plants and entire populations also in the assessment area and recovery may take many years. Therefore it may well be the case be that not the complete species pool could be recorded, in 2024.	Reference to the drought, as well as the consequences, was included.
Norbert Juergens	3	34-40		Only the Supplementary materia 5a (Van Rooyen, G., Van Rooyen, N. & Van Wyk, P. 2025) has been made available for download. Supplementary materia 5b (Van Wyk, P. 2024) was not included in the downloadable material and could not be reviewed. If it shall be included into my review please send the Supplementary materia 5b and I will include it into the review, within the days of next week.	Supplementary 5b was made available by Babalwa in the mean time.
Norbert Juergens	3	34-40		Please consider to add in the specialist reports a few vegetation records made in the 1980s and published in: Juergens, N. (1986) Untersuchungen zur Ökologie sukkulenter Pflanzen des südlichen Afrika. Mitt. Inst. Allg. Bot 21, 139-365. I will send scans of that publication and those data to the three specialists (Van Rooyen, G., Van Rooyen, N. & Van Wyk, P.).	This was discussed in an email with Prof Jürgens. Rather than using data of 40 years ago, a full in-depth, fine scale study is essential and recommended as such.
Norbert Juergens	4	34-40		I understand that these steps only make use of data of the Supplementary materia 5a (Van Rooyen, G., Van Rooyen, N. & Van Wyk, P. 2025) and not data from Supplementary materia 5b (Van Wyk, P. 2024).	The data does indeed include the Supplementary materia 5b (Van Wyk, P. 2024). The full reference has been added after P. van Wyk.
Norbert Juergens	5	26 ff		The chapter on Climate is incomplete and should also mention the centennial drought and associated effects. See for example the preprint DOI: 10.2139/ssrn.5189871 I will send the preprint and the supplementary documentation to the three specialists.	Reference to the drought has been added.
Norbert Juergens	7	8 ff		Consider to add the geological map, which I found as Figure 1 in the vegetation specialists report.	Geological map added.
Norbert Juergens	7	17 ff		Consider to mention the proposal recently made by Henschel & Jürgens Ecology of Psammophyllie in the Namib Dunes.	Added.

Norbert Juergens	10	29-30		Please consider to formulate loudly that a classification of the Western Gariep Plains Desert as Least Concern status is inadequate and should urgently be corrected by the responsible authority!	Statement on upgrade has been included. It is likely that this will be done since the threatened status of the Richtersveld Vegetation Types is currently being re-assessed.
Norbert Juergens	10	46 - 11-2		Consider to rephrase: The word "unfortunately" is not helpful. Van Wyk & Smith (2001) simply used the coarse grain approach introduced by Croizat (1965), Volk (1966) and Nordenstam (1969). Jürgens (1991, 1997) unpacks this old concept based on a study of the distribution areas of a very large number of species and proposes to split the term Gariep centre into "East Gariep Centre" for the palaeotropical summer rainfall elements in the east and a West Gariep for the Greater Cape winter rainfall elements. Within that West Gariep Centre at a lower hierarchical level a "Western Gariep circle" was identified as a local centre of endemism spanning from Alexander Bay to Sendelingsdrift/Lorelei.	Rephrased and additional information added.
Norbert Juergens	13	14		Replace Niebel with Niebel-Lohmann	The reference in the text was indeed for Juergens & Niebel (1991), we have added Juergens & Niebel-Lohmann (1995) as additional reference.
Norbert Juergens	13	16		Replace Niebel with Niebel-Lohmann	The reference in the text was indeed for Juergens & Niebel (1991), we have added Juergens & Niebel-Lohmann (1995) as additional reference.
Norbert Juergens	42	8		Say which specialist studies are meant here	Aquatic, terrestrial fauna (avifauna, bat, other fauna) and terrestrial flora (botanical) specialist studies were specified.
Norbert Juergens	45	46		Replace Niebel with Niebel-Lohmann	The reference in the text was indeed for Juergens & Niebel (1991), we have added Juergens & Niebel-Lohmann (1995) as additional reference.
Norbert Juergens	1	24	Figure 1	Please revise the capture of Figure 1. The column "Use" is not adequately labeling the spatial units. In the text there are labels like "SASOL block, GH2 Facility which are not identifiable in the map. Alternatively alter all text issues.	Text has been revised to match figure zoning names.
Norbert Juergens	14		Figure 11	Please avoid doubled figures "4" and "5" in different colours in the same map or clarify the different meanings.	Error: 4 and 5 have been removed.
Norbert Juergens	13	38		Consider to name the termites (Southern harvester termite, <i>Microhodotermes viator</i> )	Added name
Norbert Juergens	15	24-34		This chapter discusses empirical results rather from Namaqualand than Richtersveld. Consider to add a few lines on the documentation and interpretation of observed change in more than 50 study sites in the Richtersveld in a recent preprint: <a href="https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5189871">https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5189871</a>	A brief summary of the preprint has now been included.
Norbert Juergens	23		Figure 17	Please align the acronyms for the communities in the map and in the text ("1" versus "C1")	Text revised.
Norbert Juergens	23	17-18		Please consider to formulate loudly that a classification of the Western Gariep Plains Desert as Least Concern status is inadequate and should urgently be corrected by the responsible authority!	Has been added.
Peer reviewer name	Page range	Line/s		Note to authors from Review Editors	

M (TNPA)	39	47		The 13 species that were selected for further assessment, will the outcome of the assessment influence the final outcome of this report? See Section 5.2.1	The outcome of the report is based on the assessment of these 13 species. See Section 5.2.1
M (TNPA)	40	12		All proposed developments within the SEZ should incorporate an avifaunal specialist study ( Is the port excuded? If so is it because there are no habitats that supports the Avifauna Species within the port?	Revised text to include port.
M (TNPA)	40	11		What matrix was used for determining the risk levels. Eg the Avifauna is Medium and High	Please see Section 6.2 where the methodology to derive site sensitivity for avifauna is explained. Should more information be needed please consult the avifaunal specialist study. Basically: A workflow utilising a weighted algorithm was scripted and implemented in Python. The weighted algorithm incorporated weights for <b>red data status, endemic status, range size, and data (nest/roost sites, core area of occupancy, sightings, etc.), or model (distribution model vs fine-scale breeding habitat suitability model) type. The weighted algorithm applies greater sensitivity weights to species that are more threatened (e.g. Critically Endangered or Endangered) and are either endemic or highly range-restricted within South Africa. Furthermore, data types that included nests, roosts or/ areas of core occupancy received the highest weights for the respective data/model type criterion.</b> All distribution models, habitat suitability models and other data types are ingested into the weighted algorithm with species and data specific weights applied to generate an overall avian sensitivity map for the Boegoebaai SEZ.
M (TNPA)	41	24		The screening tool used in the Vegetation and Flora, is the one from DFFE?	Yes, it is. Text revised to include DFFE.
M (TNPA)	33	13	3	1) Besides avoiding the whole port area or the development area, what could be another practical proposal solutions considering the need of the development versus the loss of fauna and flora diversity and ecosystem services	We have indicated the presence of areas that have been transformed by mining-related activities. These transformed areas cover approximately 5000 ha and could potentially be used for development provided they do not negatively impact on the priority areas with a very high sensitivity.
					The only alternative would be to revisit the alternative site closer to Port Nolloth where sensitivities might be lower. See previous TNPA presentation where a site approx 18 km north of Port Nolloth was shown.

Chapter 4: Biodiversity Offset Framework						
Peer reviewer name	Page range	Line/s	Table/Fig/Plate	Peer Reviewer Comment	Note to authors from Review Editors	Responses to Peer Review Comments by authors
Greg Schreiner	1	Line 1 to last page (general comment)			Please develop a punchy, informative 2-pg Executive Summary (ES) with iconic map (see comment below) – what are the main messages a decision-maker/stakeholder should take away from this report?	
Greg Schreiner	1	Line 1 to last page (general comment)			I would perhaps like to see a Section in the report highlighting specific recommendations for project level EIAs and the EAPs responsible for them as regards biodiversity offsets (can just be a few bullets written for the lay person)	
Greg Schreiner	1	Line 1 to last page (general comment)			For my own clarity: Some form of offset/compensation will be required for every inch of development in the Port/SEZ (including those areas under windblown sand since they still have rehabilitation potential) barring only land surfaces historically disturbed by mining?... Surely a development programme focused on new infrastructure only being allowed on historically mined regions (I wonder what spatial extent is "modified" in ha (see Van Rooyens), coupled with extensive requirements for stabilization and rehabilitation of windblown sands would be a palatable win-win outcome? The Van Rooyens and Jayson Orton have indicated the spatial extents of the "modified" areas, I wonder if their reports also mapped areas with windblown sand which are not technically "modified" and hence have a decent rehabilitation potential	
Greg Schreiner	6	37			Yes we can, please tell us specifically what layers you want in the map...use for your iconic image in ES	
Greg Schreiner	15	11			Remove this last sentence as it's our job as integrators of the SEA to provide something approximating such a framework (all chapters are being integrated into one book)	
Greg Schreiner	15		Footnote 3		Very substantive, perhaps add references if there are any, and if this is peer group consensus in the SEA team, this should be incorporated into ES. Also, the fact that "offsetting" probably not possible (except for windblown sand areas), and that mainly "compensation" will be required if sensitive areas are lost to development.	
Greg Schreiner	7		Figure 2		Map differs from van Rooyens NPAES Map (Figure 12), not sure why	
Greg Schreiner	10		Figure 3		The problem with this map is that other areas then look "not sensitive" and available for development, better to use the van Rooyen sensitivity map, which basically shows Very High sensitivity all around except for "modified" areas	
Greg Schreiner	18		Figure 6		This map is not necessarily expressive of Port Nolloth being a better site (from a terrestrial ecosystems perspective), so it's difficult to understand it's purpose	
Paul Lochner	entire document				The entire document needs an edit by the authors to correct grammar and punctuation. Some of these requirements have been listed below.	
Paul Lochner	1	9			The Figure on the cover page needs to be integrated into the report. It seems there is a new "Figure 1" still to be added. This Figure on the cover could be part of the Summary.	
Paul Lochner	2	1			Add a Summary. This could draw on the Overview, which can become an Introduction.	
Paul Lochner	2	3			This report is only for the local-scale Work Package 1 input. Please clarify this in line 3. A separate report is to be provided for Work Package 2 (regional scale).	
Paul Lochner	3	16	Acronyms		For government departments, add whether they are "national" or which province, such as "Northern Cape".	

Paul Lochner	4	20			Is it correct to say that "...Boegoebaai where detailed biodiversity knowledge informing current statutory planning tools is low"? Is the biodiversity data for the study area really that must less than elsewhere in the province? For example, Pieter van Wyk has done extensive mapping of species in the Boegoeberg area over several decades. And there are expert inputs from Pieter van Wyk (SANParks).	
Paul Lochner	4	25-26			The statement is made that "However, the scale of potential impact is unclear at this stage – and it may end up being gargantuan. Cumulative biodiversity impacts at this scale are difficult to forecast and mitigate". Yes, the scale of future development is unknown at this stage, quite understandably. Therefore, scenarios have been developed. Please add a reference to the scenarios.	
Paul Lochner	5	2			"... and may frustrating attempts to secure offset sites". Check grammar.	
Paul Lochner	6	6			The wording suggests that an offset framework is not being considered at the regional scale, which is not true, as the SEA includes offset inputs in Work Package 2 (regional scale). Please add mention of what is being done at the regional scale regarding offsets. (It's in the Brief in section 6).	
Paul Lochner	6	19			This line refers to Figure 1. There is no Figure 1. Presumably it is the Figure on the cover? Please integrate Figure 1 into the text.	
Paul Lochner	6	30			Figure 2 refers to the "SANParks near term inclusion priorities", which appear to be the coastal section in Figure 2. There is no text explaining the "SANParks near term inclusion priorities". Please add text to explain this.	
Paul Lochner	7	2	Figure 2		The colour for the Orange River Mouth Nature Reserve and Richtersveld National Park are the same. For clarity, please change the colour for the Orange River Mouth Nature Reserve.	
Paul Lochner	7	2	Figure 2		Please add some place names to the Figure to assist the reader understand the extent of the various expansion areas. For example, add labels for Alexander Bay, Port Nolloth, Holgat River, Oograbies Wes.	
Paul Lochner	7	2	Figure 2		Spelling of "Richtersvelds"	
Paul Lochner	7	7			What is meant by "the site"? The SEZ? Please clarify.	
Paul Lochner	7	8			Check grammar and punctuation re; "See Van Rooyen et al this volume Appendix 1)"	
Paul Lochner	7	9			Is "rate" mean to be "rare"?	
Paul Lochner	7	10			Correct grammar.	
Paul Lochner	7	11			Check wording in "this extremely rare restricted populations".	
Paul Lochner	7	21			add spacing between words "granti)would "	
Paul Lochner	8	2-4			Correct grammar and punctuation.	
Paul Lochner	9	8-9			What is the scientific basis for this statement "However, with a few wet years, it is also conceivable that some of the plumes could stabilise and sandveld vegetation reestablish itself"? Given climate change predictions for the West Coast, with increased temperature and reduced rainfall, this seems very unlikely. This statement is very speculative and contrary to the current trends. Are there any studies that show that wet years have led to vegetation reestablishing in this area?	
Paul Lochner	9	16			Check punctuation.	

Paul Lochner	10	6			Figure 3 appears here. Please add a sentence to introduce Figure 3, with the "expert identified priority areas areas".	
Paul Lochner	10		Figure 3		Figure 3 shows expert identified priority sensitive areas. These are then referred to again in Section 4-4 (pg 16). But it is not clear where the actual areas in Section 4.4 are located. Please annotate Figure 3 to show where the features in Section 4.4 are located, such as the priority areas of Visagiesfontein, Swartbank, Rooibank, and the unique Whistling Rat colony.	
Paul Lochner	11	1-5			Sentence states: "Remnant pockets inside the SEZ are not going to survive in the industrial landscape being contemplated and must be disregarded as counting towards any offset." There are only a few remnant pockets on the coastal side of the road in the Port area (Figure 3). If these are conserved, surely then an offset is not required? Furthermore, if the mobile sand around these pockets was stabilised (through development / rehabilitation linked to development) would that not lead to reduced risk of sand smothering for these remnants than the baseline scenario (where the current trends prevail, such as expanding and plumes and smothering of vegetation). I agree these remnant areas are small, and for offset calculations one can use the entire zone (e.g. Boegoebaai Port zone in Figure 3).	
Paul Lochner	13		Figure 4		Figure 4 seems to be in the wrong place in the report. It also needs a link in the text to explain why it is relevant.	
Paul Lochner	13	14			"The previous study ..." presumably is Botha and Desmet 2022. Add this as reference here.	
Paul Lochner	13	18			What is approximate area of the receiving sites are the expert identified sensitive areas displayed in Figure 3?	
Paul Lochner	13	21			This states that "The proposed "conservancy area" of 1170 ha immediately South of the port does not seem to be a suitable offset receiving area." Agreed. An output of the SEA should be to propose a new plan for conservancy areas within the SEZ, based on the specialist studies.	
Paul Lochner	14		Figure 5		The mapping of purple offset areas is helpful for planning. Please add some discussion on the spatial extent of these areas and how this correlates with areas required in terms of Table 1, where there is correlation.	
Paul Lochner	14	18			Correct grammar in "don't success, "	
Paul Lochner	15	10			Correct grammar	
Paul Lochner	18		Figure 6		The Figure 6 is not cross-referenced in the text. Also, it does not seem to support an argument in favour of other sites, as the area north of Port Nolloth has much less disturbed area on the coast shown as "mines". And the area around Kleinsee appears already allocated to renewable energy, and has no mined areas near the coast. The isobaths on the maps are not labelled so the reader cannot see the relative difference. Nonetheless, the issue around the comparative engineering suitability for a port site at Port Nolloth versus Boegoebaai is dependent on many factors, with depth of 20m water depth being one.	
Paul Lochner	17	extra section needed			The Brief includes the need for "Practical recommendations to inform the planning and layout of the Port and SEZ, such as the spatial factors to take into account when planning biodiversity offsets and how to minimise the need for biodiversity offsets ". Please add a concluding section (section 4.5?) on this. For example, how to include the expert identified areas into the conservation planning for the SEZ. How to revise the current "conservancy area" in the zoning that is mostly mined land and doesn't make sense.	
Babalwa Mqokeli	Page 2	Line 3			Remove reference to Work Package 2 input as this Report is for Work Package 1, and a separate report for WP2 is being compiled	

Babalwa Mqokeli	4	Line 26			Although more relevant to WP2 but one of the key scopes of the SEA is to consider the "integrated, cumulative, long term picture of what a medium to large-scale GH2 economy might look like". And therefore the developed scenarios as part of the SEA would assist in estimating the cumulative impacts and suggesting the enhancement or mitigation measures.	
Babalwa Mqokeli	5	Line 2			Check grammar	
Babalwa Mqokeli	5	Line 36			Remove reference to "Namakwa" SEZ. It is the proposed Boegoebaai Port and SEZ. Unless this is making specific reference to the Namakwa SEZ as one of the examples of large projects?	
Babalwa Mqokeli	6	Line 30			It's perhaps best to include the figure being referred to from the van Rooyen report in this report as well to give the readers, and particularly the peer reviewer, context with regards to the minimal opportunity for the park to extend	
Babalwa Mqokeli	6	Line 34			As above, perhaps best to include the figures being referred to as Figure 15 & 17	
Babalwa Mqokeli	7		Figure 2		Consider changing some of the colours on the legend so that they are easily distinguishable from the others	
Babalwa Mqokeli	13	Line 14 to 20			It would be a good idea to include the map/s depicting the identified (from the 2022 report and the van Wyk 2024 report) or spatially indicating the "optimum places to locate terrestrial offsets...". Furthermore would these optimum places be sufficient or in line with the proposed use of high offset ratios (e.g., 1:30 for CR ecosystems)	
Babalwa Mqokeli	14	Line 18			Check grammar	
Babalwa Mqokeli	14	Line 15			It would be a good idea to include a figure of the alternate site North of Port Nolloth to visually represent the potential alternative location	
Babalwa Mqokeli	18		Figure 6		There is no prior reference to Figure 6 in text	
Babalwa Mqokeli	1	Line 1 to Last page			The framework seems to have considered expert input (in terms of other reports produced as part of the SEA) but there's no reference to key Authority engagements such as SANParks and provincial conservation bodies, as required in the scope of work.	
Babalwa Mqokeli	1	Line 1 to Last page			The report at this stage has too many gaps for any peer reviewer to have an effective review of the Chapter, particularly from a mapping perspective. Perhaps Luanita could assist in compiling some of these maps, including the Figure 1 map referred to in Page 6, Lines 39 -41?	
Babalwa Mqokeli	1	Line 1 to Last page			The Scope of Work was to also frame the Baseline Scenario (Sc0) as a baseline for comparison against a GH2 development. That is, an analysis of future trends as it relates to your expertise. This will feed into WP2 scenarios	

Chapter 4: Biodiversity Offset Framework							
Peer reviewer name	Page	Line	Page	Line	Table/Fig/Plate	Peer Reviewer Comment	Note to authors from Review Editors
Susie Brownlie	1	1	34			<p>In general, I think the main points and recommendations made in this report are excellent. My main comment (which will be very apparent in the following table) is that the need to give greater emphasis to the need to prioritise avoidance/ prevention of significant negative impacts as the first step in the mitigation hierarchy, especially where there is a risk of irreversible or irreplaceable loss. The environment is to be held in the public trust for current and future generations (as mandated in the Constitution and NEMA). The ToR for the framework study includes to describe the legal framework for offsets; how to minimise the need for offsets, and how they 'could be used to reduce negative impacts'. The report highlights that the proposed development is likely to result in irreplaceable loss and/ or undermining the ability to meet biodiversity targets for a number of features (e.g. p5 lines 19-20). Figures in the report show (e.g. Figure3) extensive areas of 'very high' sensitivity, which - relating back to the ToR (p31 Line 48) - are defined as areas where 'biodiversity offsets are not possible'. According to the Constitution, development must be ecologically sustainable (and socially and economically justifiable); according to the NEMA adverse impacts must be avoided, minimised and remedied - in these cases, 'remedy' for residual negative impacts that would cause irreplaceable loss is not feasible; only some form of ecological compensation would be possible (which could be vulnerable to legal challenge since it would not relate directly to the biodiversity components 'lost' (e.g. Smith, Ndlovu, Summers <i>Memorandum of Advice for SANBI, The implementation of financial biodiversity offsets in the context of South Africa's environmental laws and laws applicable to the regulation of public finance</i> , November 2023). According to biodiversity offsetting principles set out in the national biodiversity offset guideline (DFFE 2023, Section 4.2)), offsets are the final option in the mitigation hierarchy - 'Biodiversity offsets must only be considered once all the foregoing steps in the mitigation hierarchy have been considered to their full and feasible extent.' That is, they are a 'last resort' option (e.g. Business and Biodiversity Offsets Programme 2012, Standard on Biodiversity Offsets). Moreover, in terms of the national biodiversity offset guidelines, irreversible or irreplaceable loss of biodiversity should not be permitted as it would constitute a 'fatal flaw'. The report echoes this principle in places (e.g. 'Compliance with the mitigation hierarchy is imperative' which demands that avoidance (alternative sites), minimisation and rehabilitation/ restoration are investigated and implemented before offsets should be considered; p 23-24, lines 34 - 2), but I think it should be strengthened, particularly since a precautionary approach is appropriate since there are impacts as yet not addressed (e.g. indirect, cumulative impacts) which could exacerbate biodiversity loss.</p>	<p>Agree with the comments. But note that some of them are also better addressed to the synthesis chapter, and many are pertinent to actual impact assessment - not this specific approach to SEA where the layout is pre-ordained. My understanding is that we are not permitted to use "fatal flaw" type analysis? please correct me if wrong. Ref is 2013 and not 2023.</p>
Susie Brownlie	1	1	34			<p>Typically, an SEA looks first at the opportunities and constraints of an area and its capacity/ ability to support the proposed activities/ development by determining limits of acceptable change or thresholds and considering strategic alternatives such as location (e.g. the then DEAT 2007: Strategic Environmental Assessment Guideline, IEM Guideline Series 4). In this case, a layout of development components within the SEZ appears to have been the point of departure for the offsets study (and other studies), and I could find no alternative locations for the proposed Green Hydrogen development which had been assessed/ considered. Given the biodiversity importance of the affected area, alternatives must be considered (as suggested in this offsets framework report). <i>Please note that this comment is aimed at the CSIR, rather than at the author of the offsets framework!</i></p>	<p>Concur. My undersatnding is that we were not given the option of Alternative location analysis, although this was put forward in Both &amp; Desmet 2022,</p>

Susie Brownlie	1	1	34		Footprint or direct impact measures are given for key elements of the proposed development (e.g. in Section 8, p33 of the report), but exclude others (e.g. there is no mention of housing/ accommodation requirements). There is little apparent consideration of either indirect or cumulative impacts, which contradicts the fact that one of the key strengths of SEA is its ability to consider cumulative impacts. I realise that the latter will be addressed in the regional study, but in determining the offset requirements, it would be crucial to take into account the full range of direct, indirect and cumulative impacts of the proposed development scenario and - essentially - to adopt a risk-averse and cautious approach both to added biodiversity loss and the use / design of compensation in this context. The challenge of taking indirect and induced impacts into account is noted by the author of the offsets report - but it is not clear how the projected offset requirements have been adjusted to allow for them. The combination of ongoing background loss through erosion, overgrazing and failure to rehabilitate mined areas, plus the ongoing (if not escalation of) poaching of succulents, has major implications for affected ecosystems and species reaching thresholds beyond which loss would be irreplaceable. As mentioned repeatedly in comments that follow, the emphasis and priority should be on avoidance and prevention of harm, rather than on offsets. (An impact causes irreplaceable loss when it results in the loss of a valued environmental component without substitute, which cannot be replaced or fully compensated. An irreversible impact cannot be reversed in time, e.g. loss of genetic diversity through reducing the population(s) of a certain species, reduction in ecosystem below targets (e.g. EWT, BirdLife SA, EnviroInsight and RMB 2023. Draft Best Practice Guidelines on Implementing the Mitigation Hierarchy in South Africa)).		There is insufficient detail in the table of impacts or likely distribution to address this, and the specialists are in the dark about the full scope of development (and esp the likely indirect, induced and cumulative impacts). Concur with increasing emphasis on avoidance.
Susie Brownlie	1	1	34		The ToR state that the aim of the offset framework would be to achieve ' <i>no net loss and/or ideally a net gain in biodiversity</i> ' within the wider region. Crucially, and as noted by the author, 'It is difficult to see how any loss of CR ecosystems or impacts on CR or range-restricted EN species could be effectively compensated for to achieve net gain outcomes in the large expanses of Critical Habitat that will undoubtedly be determined on site'. <b>The report fails to mention</b> that the proposed development would be located within the Namaqualand Sandveld North Key Biodiversity Area - i.e. a globally important and recognised area for biodiversity conservation. This KBA satisfied ten KBA criteria. It is important, therefore, to note that any residual negative impacts would have international implications for biodiversity conservation, not only local, regional or national ones. Again, in order to strive to achieve either NNL or NG of biodiversity, avoidance or prevention of impacts on such components must be achieved and a strong risk-averse and cautious approach applied.		Agreed, and will include KBA reference and explicit mention of the international implications
Susie Brownlie	6	25	6	26	The fact that some of the largest impacts on most important biodiversity features will likely be in the marine and coastal realms is a matter requiring biodiversity offsets. As noted in this report, the current offset work excludes these ecosystems from the scope of work. The national biodiversity offset guideline currently does not cater for these offsets, but it specifically notes that "That does not however mean that biodiversity offsetting is not required for residual negative impacts on biodiversity in estuarine ecosystems and the marine realm". <i>Please note that this comment is aimed at the CSIR, rather than at the author of the offsets framework!</i>		Concur.
Susie Brownlie	7	30	7	31	It is understood that a dynamic baseline scenario is to be applied when considering offsets. The use of such a baseline is highly controversial rather than using a static baseline, since it enables developers to claim relative biodiversity gains against a declining baseline, rather than securing a true No Net Loss or Net Gain against a static baseline (i.e. absolute gains). The specialist's report and perspective on this issue are supported. In addition, given the difficulties in restoration as a mechanism for offsets in the context of this development (p23 footnote 5), the potential for achieving biodiversity gains to compensate for loss through this approach is extremely limited; the only feasible avenue for offsets is to protect what is left in the landscape and ensure that biodiversity targets and thresholds are not crossed. As noted many times in this review, avoidance/ prevention is key.		Agree. I don't support use of dynamic (i.e. declining BD) baseline in offset development
Susie Brownlie	7	39	7	42	Please see my earlier comment on this issue. The need to avoid or prevent impacts on CR biodiversity components or features must be underlined; residual impacts on them would constitute a Fatal Flaw, as described in the national biodiversity offset guideline.		concur

Susie Brownlie	8	6	8	7		While proactive offsetting is strongly supported in this case - particularly where offsets are deemed feasible - together with clear mitigation rules prior to any commencement of development, it is unlikely in the given context that any irreplaceable loss or irreversible ecological impacts would be avoided or remedied through this approach (i.e. mitigation would only constitute 'ecological compensation'). Again, what must be emphasised is the need to avoid or prevent such impacts as a priority.		concur
Susie Brownlie	9	3	9	3		NEMA is incorrectly referenced as Act 101 of 1998; it should be Act 107.		
Susie Brownlie	11	6	11	8		The status of Oograbies Wes Section of the Richtersveld National Park needs to be clarified/ confirmed; is it a National Park or not? The answer will have implications for offsets.		It is unclear if it is a National Park. It is not in the relevant register or database, but is in SANParks management, and seems to be managed as part of the Park. It is impossible to verify implications for offsets
Susie Brownlie	11	22	12	4		Suggest that the author justify a 'very high' significance rating for finer-scale priority areas based on a range of considerations, and the importance of taking this evaluation as the point of departure in project-level planning. Here, it is appropriate to note that an impact 'significance' rating relates to the acceptability of impacts to society, and incorporates a values as well as a technical/scientific component (e.g. Ehrlich & Ross 2015; Ehrlich A and Ross W, 2015. The significance spectrum and EIA significance determinations. Impact Assessment and Project Appraisal, Vol 33 Issue 2, pp 87-97. Also DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5, Department of Environmental Affairs and Tourism (DEAT), Pretoria)		Unclear how this comment relates to this section. I have tried to avoid taking a stance on significance ratings as it is beyond my scope (although crucial for offset determination). Would value guidance from synthesis team
Susie Brownlie	13	3	13	4		There seems to be a major gap with regard to understanding the implications of impacting the Cultural and Botanical Landscape component of the Richtersveld WHS; it would undoubtedly be a significant impact on that WHS, but the implications for possible offsets must be clarified with the national authority and brought into the offset framework.		The Cultural & Botanical Landscape is one of the best examples of a paper park in SA - and it doesn't fit into the schema of PAs with Offset implications. Its imposition on the landscape has unclear real, practical implications for offsets, beyond excluding this area from being considered a candidate site. There is insufficient engagement with DFFE and the CPA to resolve further. Best dealt with in WP2
Susie Brownlie	13	16	13	20		As noted in earlier comments, the potentially significant cumulative impacts of the proposed development do not seem to have been evaluated. Cumulative impacts on ecosystems, species and ecological processes must be taken into account in considering residual adverse impacts. As one example, given both major transmission lines and renewable energy projects (including wind and solar farms) in the region, cumulative impacts on birds susceptible to electrocution and collision must be taken into account in determining offset requirements. (e.g. Black Harrier, Bustards). It is assumed that the regional study will address this issue. [While the national biodiversity offset guideline does not offer guidance for species-specific offsets, significant residual impacts on species must be offset as with other components of biodiversity, in line with the NEMA principles and the Constitution. International approaches to such offsets would need to be applied, and within SA, recent attention has focused on avian offsets.]		Specialists were instructed not to assess impacts- and Project EIAs will need to be closely monitored to ensure compliance. We have insufficient detail on most aspects to make a judgement at wp1 scale. Cumulative impacts on ecosystems and some SCC will almost certainly be irreversible and impossible to mitigate.
Susie Brownlie	15	13	15	17		As with earlier comments, emphasis on avoidance or prevention of significant residual impacts - and in particular impacts likely to cause irreplaceable or irreversible loss of biodiversity - should be emphasised throughout, in line with the mitigation hierarchy. The report states that two Critically Endangered ecosystems should be 'no go areas', that CBAs and community identified priorities should be treated as irreplaceable, as should the Boegoeberg twins (p21 lines 15-17). While 'careful documentation of why certain layouts and configurations were required' where they would result in biodiversity loss (p113, lines 38-9) could justify the development from the proponent's perspective, it would not necessarily avoid irreplaceable loss or irreversible harm. Any authorised impacts which would lead to irreplaceable loss would thus need to be justifiable in terms of international conservation commitments (the affected Key Biodiversity Area refers), the Constitution and NEMA, especially with regard to not giving due consideration to alternatives that could avoid or prevent such consequence.		Agreed

Susie Brownlie	15	22	15	26		I suggest that the author provide clear justification for LC vegetation types triggering the need for an offset for substantial impacts, just for the sake of clarity. e.g. reference could be made to the context of broader conservation mandates (expert or local priority areas), the country's commitments to international conventions (e.g. CBD's Kunming Montreal GBF, national or regional targets, not only for biodiversity pattern but also for ecological process and climate change adaptation), or the risk of cumulative impacts breaching thresholds. Also, it would be good to elaborate on what would qualify as 'substantial' impacts.		This is where the linkage to the KBA comes in, as well as the indication by SANBI that many more species are in process of being listed in these LC veg types. Concur that the specialists should jointly consider what the thresholds for "substantial impacts" might be
Susie Brownlie	16	6	16	6		are proposed in' (something missing)?		Cant find reference?
Susie Brownlie	17	9	17	25		The statement that, in the South African context, "it is better to use sensitivity ratings as a trigger for offsetting in toto, not a determinant of which features should be offset." needs to be explained (since significance ratings tied to features have traditionally been relied on as a trigger for offsets - there is a risk of conflating or confusing sensitivity ratings with significance ratings, and clarity is needed). However, I fully support the recommendation at strategic level to plan to offset the entire footprint of planned development (at minimum, since that does not take into account e.g. indirect or cumulative impacts!), rather than focusing on the detailed metrics of particular components, particularly given levels of uncertainty.		Will clarify. The point is to ensure that if any one component triggers an offset, then the entire development should be offset - not just the individual component
Susie Brownlie	17	23	18		Table 1	The rationale behind setting a 1:5 offset ratio for each ha of intact vegetation and not less than a 1:2 for each ha of degraded sand plume area must be better motivated. The rationale for a 'CBA1' area to require a 1:15 ratio also needs explanation; there is no distinction between CBA1 and CBA2, which would be expected. Typically, CBA1 (irreplaceable) would require a 1:30 offset ratio - the author states that the 2016 version of CBAs may not be reliable, hence this ratio, but it is not clear why the offset ratio would not be 'up to 1:30' if CBA1 were confirmed. [Drawing on the national offset guideline, if the affected area were a CBA2, then the appropriate ratio would be the starting ratio multiplied by a factor of 1.5.]		This region has weak derivation of CBAs, which don't align well with expert input and fine scale planning. CBA1 and CBA2 are not well differentiated or meaningful here. Further, a revision to the CBA map has been published for comment, but it is unclear if this accurately reflects the SEA WP1 findings. If the revised CBA is at the required resolution and fidelity, then it would be correct to apply the national guideline. However, to do so if the CBAs are inaccurate would run this risk of downweighting the real priority features.
Susie Brownlie	19		19		Figure 6	The need to take cumulative impacts into account is raised again - please see earlier comment.		Agreed, relevant for Project level EIAs, and overarching SEZ approval
Susie Brownlie	20	11	21	21		The 'conservancy' and 'set asides' in relation to qualifying as an offset need clearer explanation. '...around 560 ha of expert identified priority areas...could effectively count as set asides towards offset liabilities if they are actively protected and the surrounding buffers restored but are not viewed as offset sites'. It is stated that the 'conservancy' does not meet the requirements of an offset area.		The 'conservancy' is not well designed, is not an appropriate offset, and needs to be re-thought. It covers substantial damaged land that is better developed - and my recommendation is that it should not inform spatial planning or offset calculation. The fine scale expert identified priority areas are, however, suitable for use as set asides. They should be protected and managed accordingly and count towards offset liability.
Susie Brownlie	21	1	21	21		The report's recommendation that the most dependable route for an SEZ-related offset would be to appoint a third party/ private contractor as the managing entity is supported, for reasons given. However, the duration of responsibility/ liability for that management is not made explicit, neither is the 'what happens at the end of this period' question answered. While an endowment is appropriately noted as the best way to provide for long-term management costs, some form of exit strategy for the developers would need to be formulated and responsibility allocated.		Concur. But assume this is referring to institutional arrangements on pp 24 ?
Susie Brownlie	22	12	22	14		Please check language/ meaning (something missing!): '... they would be well positioned to assist with implementation of regional impacts from RE development (WP2) especially if the offsets overlapped with park expansion plans for Namaqua and Augrabies'. Presume implementation of offsets to compensate for regional impacts, rather than implementing impacts.		Correct. Will rectify

Susie Brownlie	23	28	28	20		It will be crucial to have one oversight body to coordinate, proactively, the securing of a sufficient offset area(s) to cater for all the different elements of the proposed development. It would be useful to include a recommendation with regard to the optimum composition of such a body. That is, offsets for individual components within the SEZ cannot be planned in a piecemeal fashion, one EIA at a time, by different consultants; an 'aggregated' offset area to cater for all intended development components must be secured proactively for the long term, and its purpose must be explicitly documented to counter possible criticism of such area not satisfying the need for additional conservation outcomes.		While this is ideal (especially for public oversight and admin simplicity/cost effectiveness) it may not be possible in practice. unless the SEZ protagonists take this on upfront (ideal), it is unwise to stipulate too far just how a liability holder should implement required mitigation, but rather state the outcomes that need to be achieved and penalties for failure/non-compliance.
Susie Brownlie	23	28	28	20		The need to ensure that affected local communities are engaged in the planning of the offset, and benefit from the offset is crucial, and for them preferably to be involved in its implementation (e.g. management, monitoring). Should the affected communities be excluded, it is probable that some of the drivers of biodiversity loss (e.g. overgrazing, poaching) would increase and exacerbate that loss despite the offset. It would be useful to get the author's views on the potential to secure an OECM (Other Effective Area-based Conservation Measures) rather than a Protected Area or National Park, with appropriate legal contracts/ arrangements. (p24 Line 10 recommends engagement with community structures for access and use of target areas, but stops at this point.)		The engagement of local communities and indigenous people is a weak part of the exercise, but is out of scope. It is imperative that they are engaged upfront and clear credible plans jointly developed. Given the significant contestation within the CPA, the general illicit activities and lawlessness in the region with weak, reactive 'enforcement', it is unclear if an OECM could work instead of a formal protected area. The nature of the mechanism is less important than the political and bureaucratic will to enforce the agreed on required outcomes.
Susie Brownlie	24	3	24	18		All of these recommendations are supported. It would be useful to link them to the recommendation for proactive offsetting: i.e. to set out the approach that EIAs need to take to ensure that they contribute to a proactive offset in a defensible way, e.g. operating a strategic offset area/ aggregated offset area, and explaining how that approach could link to EIAs for particular components of development and conditions of authorisation (if authorisation were granted).		Concur.
Susie Brownlie	24	6	24	7		The need for offsets to be 'like for like' and have the same biodiversity characteristics must, in my view, be stated more strongly as a requirement - 'preferably with similar ecosystem characteristics' appears weak. This comment ties in with many previous comments on the need for stronger emphasis on avoidance or prevention of impacts where there is a risk of irreversible or irreplaceable loss.		Differ slightly. The ephemeral nature of some biodiversity features, and the low prospects of maintaining much ecological functioning in situ without massive investment in rehabilitation, points to potentially pursuing protection outcomes in other areas where they are likely to be more durable and easily defended. This may impinge on the ideal of principled 'like-for-like' where remnants are too fragmented or threatened to persist in the medium term. This indicates a slightly different philosophy to biodiversity offsets to the reviewer
Susie Brownlie	25	1	25	4	Figure 8	The need to consider lower-impact alternatives is deemed crucial in this case, as proposed in the report.		Agreed
Susie Brownlie	26	8	26	11		Please check this sentence - something missing?: 'This is something that could easily be done for a fraction of capital cost if the port and SEZ, and would provide some surety to regulators, commenting authorities, local communities and interested and affected parties that sufficient, effective offset-type mitigation was accomplished.'		Will rectify

Chapter 5: Heritage						
Peer reviewer name	Page range	Line/s	Table/Fig/Plate	Peer Reviewer Comment	Note to authors from Review Editors	Responses to Peer Review Comments by authors
Babalwa Mqokeli	2	3			Reference currently is only made to the SEZ, please include the port as well. Rephrase to "Boegoeborg Port and SEZ"	Amended
Babalwa Mqokeli	1	Line 1 to Last page last line			Check throughout the document that when making reference to "SEZ" that it is indeed the SEZ footprint or does it encompass the Port footprint as well. Make clear references to these areas/footprints, where applicable. It is important to make reference to where the description is applicable in terms of either the Port or SEZ area/infrastructure aspect/SEZ subzone OR BOTH (i.e., cite the applicable receiving environment)	Amended
Babalwa Mqokeli	2	7			Add in brackets that Zone 1 is the Port precinct zone	Amended
Babalwa Mqokeli	2	11			Add initial context to the zones being referred to (Zone 3 = Green ammonia facility, Zone 4-6 = SEZ Industrial Park and Zone 7= Future GH2 facility) ALTERNATIVELY ensure your mapping, particularly the sensitivity mapping indicates/labels these zones/areas	Amended
Babalwa Mqokeli	2	15 & 16			Add initial context to the additional zones not mentioned in earlier statements (i.e., Zone 8 = Future expansion area 01 and Zone 9= Future expansion area 02)	Added to figure 1
Babalwa Mqokeli	2	23			Add context to the Zone 2 being referred to (i.e., Conservancy area)	Done
Babalwa Mqokeli	3	4			Add context to the Zone 10 being referred to (i.e., Future tank storage)	Added to figure 1
Babalwa Mqokeli	2-3	Line 7 of page 2 to Line 4 of page 3			The Executive Summary refers to the various Zones applicable to the footprint, however these Zones are not depicted in the map included in the ES. Please update map to show these zones for clarity.	Done
Babalwa Mqokeli	2	30-31			Refer to the relevant figure/s or map/s in the report indicating the "One pre-1965 wreck that is very highly likely to fall within the sea adjacent to the SEZ study area"	Done
Babalwa Mqokeli	3	4			Refer to the relevant figure/s or map/s in the report indicating "areas rated as high sensitivity for use by small-scale herders and the remaining land outside the mine rated medium sensitivity"	Done
Babalwa Mqokeli	3	34			Does this include the Port area?	Exec summ states that there is an area of medium sensitivity in Zone 1 and that all the rest of the SEZ is low sensitivity.
Babalwa Mqokeli	5	Line 1 to Last page last line			There is no prior reference to the map in the Executive Summary, and no figure/map number	Added fig number and references.
Babalwa Mqokeli	22	11 - 29			Add context to the zones being referred to by including a mapping indicating these zones	Added to figure 1
Babalwa Mqokeli	26	20-22			Also include map indicating location points of three known graves to indicate or provide context to the applicable receiving environment (i.e., to visually represent the location within the project footprint). Sensitivity mapping referred to as Figure 40 does not provide full view of the location in relation to the overall footprint.	Added to figure 1
Babalwa Mqokeli	13	Section 5			The Scope of Work was to also frame the Baseline Scenario (Sc0), under the Description of the receiving environment section, as a baseline for comparison against a GH2 development. That is, an analysis of future trends and implications for heritage. This will feed into WP2 scenarios	Included in Section 5
Babalwa Mqokeli	40 & 41	Line 5 of page 40 and line 2 of page 41			The Figure number "40" is used twice for both the maritime graves sensitivity. Renumber accordingly, including in text referencing.	Done

Babalwa Mqokeli	46	18 - 21			What would the purpose of this be: " <i>The appointed archaeologists will need to determine the sites to sample in order to best characterize the archaeology in each development footprint</i> "? Would it be to classify the sites based on significance and determine a way forward based on significance for example for preservation?	Amended to explain better. Once EIA surveys are complete there will be thousands more sites. Only then can an informed decision be made.
Paul Lochner	5				The summary is good. The map is very helpful. It can be made even better by adding the key areas referred to in the text, i.e. add numbers for Zones 1 to 10, location of Korridor Wes farms, and Witbank and Swartbank, Namakwakop, and Homewood Harbour (at Boegoeberg North).	Done
Paul Lochner	5				Please add a map that zooms in on the Port Precinct and proposed Conservancy area, given that this is probably the main area of initial focus. It will be good to be able to see the heritage features more clearly for this area. The details get lost in the current map for the whole SEZ.	Done
Paul Lochner	5				in the Figure, all areas regarded as of high or very high sensitivity (red and dark red shading) for any aspect of heritage. But I cannot tell the difference between "red" and "dark red" areas. Please make the colour difference more distinctive. Maybe use red and orange?	made the transparency lower. The dark red is far clearer now.
Paul Lochner	30				There is frequent mention of Witbank, Swartbank, Holgat, Rietfontein etc. These are outside and/or overlapping with the SEZ. Please add a regional map (for example, from a 1:50 000 map) that shows the SEZ, these regional features and the buffer zone for the Richtersveld Cultural and Botanical Landscape (RCBL) World Heritage Site, so the reader understands where they are relative to the SEZ. Or refer to reader to Figure 36 and include some more place name labels on Figure 36.	Not enough space on 36 (now 38) at that scale. Have added to Figure 1 to set the context early and assist in exec summary.
Paul Lochner	39		Figure 39		Please add label for Namakwakop. Also, I cannot see the difference between "red" and "dark red"? See earlier comment.	Added to figure 1 (and see earlier response)
David Halkett	2	7		No map showing Zones? Explain what the zones are. A map as per Fig 3 in the "Strategic Environmental Assessment for the proposed Boegoebaai Port, SEZ and Namakwa Region Briefing note for research partners".		Added to figure 1
David Halkett	4	15		You refer to the Conservancy area a number of times in the report. include an explanation as per Table 4 point 2 (briefing document): <i>Conservancy area of approximately 1 170 ha that has been roughly demarcated based on initial inputs on conservation priorities such as the Boegoeberg koppies and seal colony on the Boegoebaai point. A habitat unit known as Swartvrygje Heuweltjie Strandveld, located just inland of Boegoebaai, has suffered extensive damage from mining over the past century. The only intact areas are protected by the Buchberg twins and hardened roads, which prevent sand scour. It is crucial for any port and GH2 projects to avoid these intact portions, as they cannot be offset. There is also an interesting archaeological site at the proposed development – the Boegoebaai cave/lair.</i>		Not a heritage point, but is included elsewhere in the intro chapters of the SEA
David Halkett	4	25-33		Refer here to the map showing boundaries /buffers of the RCBL World Heritage Site, or the Richtersveld National Park, Fig 36. Standardise throughout how you refer to RCBL World Heritage site.		Included
David Halkett	5-6			There does not seem to be a Section 1 explaining the project? No ToR. Perhaps something missing here as the map of the SEZ seems to be disconnected and there is no Figure number. There is no context for the study explaining why is this being done? I know this is included in the briefing document, but not sure if the Heritage report is intended to be standalone, in which case more project details would be essential. This comment wrt mapping applies throughout the document.		Contextual information will be included in the introductory chapters of the SEA.
David Halkett	6	1-20		Perhaps some reference to who are the responsible heritage authorities? Also perhaps briefly explain the HIA process and how it meshes with the EIA process, and why multiple individual HIA/s/specialist heritage studies will be required down the line. This is significant with respect to difficulty of prediction of heritage resources on the landscape in broader scale studies such as this.		Included
David Halkett	6	25		....that rises <b>from the coast</b> gently towards the east....		Included

David Halkett	9	6		Put in the name of the specialist paleontologist here		He is one of the authors and the author roles are explained at the start.
David Halkett	9	12		What observations were made during the archae survey of relevance to the palaeo study? Was info fed back to the palaeontologist?		Yes, photos of fossils taken during the arch surveys are included in the palaeo section to illustrate certain oints where needed.
David Halkett	9	17		What factors affect the accuracy (or not ) of predictions?		Done
David Halkett	9	23-24		Parkington in fact did an initial survey prompted by Mr Org Genis who was chief geologist in the 1980's or 90's (?). He did a brief survey of the mine and wrote a report and it was during that survey that the Boegoeberg sites were recorded. Perhaps the report is Parkington 1993 in your reference list. Also see Klein et al 1999 p394. The excavations at Boegoeberg were of two sites over 2 seasons		Halkett is incorrect regarding the Boegoeberg sites. Only ONE of these is an archaeological site. The reference to one site being excavated under archaeology is thus correct. We have added a ref to the palaeo site in the equivalent spot under palaeontology.
David Halkett	9	25-26		<i>"For this reason, fieldwork was carried out both within the mine and in the adjacent hinterland with the aim of providing more detailed data for the area"</i> My understanding is that the brief was to look at the mine area and the adjacent area east of the R382 and I had thought at first that the heritage study had gone beyond those boundaries? Perhaps that sentence should be reworded to avoid confusion! How would the inland area be pertinent to the coastal strip? <i>"and confirming that expectations from elsewhere would remain true there"</i> Please explain what expectations from elsewhere might apply here?		Inland area is pertinent because it is also within the SEZ area. Expectations from elsewhere are as noted in the previous sentence (i.e. data from the Port Nolloth to Hondeklipbaai area. Some edits made to clarify.
David Halkett	10	10-11		There is extensive historical aerial imagery of the mining areas as far as I am aware. Were these used to determine areas that were extensively disturbed by mining/prospecting in the past and those not? Did you check on aerials if the example area which you say looked like it was mined but was then found to have sites, was in fact mined or not? Just asking as I have seen elsewhere collections of shells that look like middens that were in fact reworked shell deflated out after use of old dumps for rehabilitation.		Historical aerial imagery was used extensively. It cannot however, be very accurate. This is explained.
David Halkett	11	20		In my opinion, Visual impacts from the project will be significant and a high level statement should be made in this regard.		Agreed. This sentence is applicable in the exec summ: "•The proposed industrial development for the SEZ will be highly visible for a considerable distance and will impact on the sense of place due to its strong contrast with the existing landscape."
David Halkett	16	22		It is possible that bone accumulations formed by the activities of hyenas will be found. I think this is a point that should be stressed and highlighted in the abstract and palaeontological section other than just this one line. Such accumulations may contain early pre-modern human remains if they old enough and hence assume high significance. Perhaps capture a statement in your "highlights from the survey" section to say these accumulations could be found across the area where geology is favourable.		Note on significance is included, as has a note that they can occur anywhere with aeolianite.
David Halkett	17	19-27		Perhaps more than one if we are pedantic. Rudner 1968 documents indigenous pottery from Alexander Bay and Port Nolloth but it is not clear if he went into the mining area. Nevertheless, some mention of the ceramic descriptions of the area compiled by Rudner is pertinent. And Parkington 1993 was a low level survey of parts of the mining area.		Mention of Rudner's (1968) work has been added, but note that we were extremely limited by page count and including local details related to specific types of artefacts is not feasible in the allowed space. Rudner's locations are in fact clear. He did not visit the mining area.
David Halkett	17	25-27		Two buried shelters were exposed of which one was a brown Hyena den (BOG1) and relatively undisturbed. The other shelter known as BOG2 contained the remnants of an MSA deposit substantially disturbed by mining. This observation highlighted the possibility for MSA sites to exist in buried rock shelters but also in the open. For both older ESA and MSA sites, their importance is elevated if they are found in stratified context and where a range of artefacts is present. The likelihood of finding pre-modern human remains at such sites while extremely low, remains a possibility. Perhaps this point needs to be highlighted throughout the report. The non-implementation of environmental requirements with respect to heritage enforced elsewhere is an indictment of the mine and authorities.		Included
David Halkett	17	33		Perhaps should be Appendix 1?		Amended

David Halkett	18	6		Hart 2015 does not appear in the references. Hart, T. 2015. Archaeological impact assessment: Proposed Richtersveld Solar Facility. Richtersveld Community Reserve. Unpublished report prepared for Cape EAPrac behalf of Richtersveld Sunspot (Pty) Ltd. ACO Associates. This was ~22 km north west of the SEZ boundary and about 30 km nw of Alexander Bay but still of moderate relevance. Townsend 2015 reflected the findings of the AIA in his HIA.		Included in text and references
David Halkett	18	8		describe briefly WPT1 and 2? My earlier comments with respect to this being a standalone report, or not, apply.		This is not a standalone report and the difference between WP1 and WP2 is described in the introduction.
David Halkett	18	8-12		Hart 2010 and 2013 was for the Richtersveld wef and this was indeed just on the boundary of the SEZ. Some of the archaeology and Community sites have been picked up in this report		The sites listed by Hart (2010 & 2013) were revisited
David Halkett	18	21		"For completeness also include: Halkett, D. 1999. An archaeological assessment of power line routes between Muisvlak and Eksteenfontein, Richtersveld. Unpublished report prepared for Ninham Shand. Archaeology Contracts Office, UCT. Summary: <i>A small number of archaeological sites were observed along the power line route. Only two lie directly on the route but are not of such a nature to warrant mitigation. The first of these (site 1) is an ephemeral shell and stone scatter while the other consists of a number of stone mounds possibly representing traditional grave markers (site 3)....During the survey, a number of Early/Middle stone age artefacts were observed spread widely about the landscape although never in large enough quantities to allow definition of individual sites.</i> Also having relevance: Webley, L. & Halkett, D. 2011. Heritage impact assessment: proposed Aggenis-Oranjenmond 400kv line and substations upgrade, Northern Cape Province. Unpublished report prepared for Savannah Environmental (Pty) Ltd on behalf of Eskom Holdings Limited. Parts of the report discuss the RCBL WHS."		Done, included
David Halkett	19	2-3	Fig 11	Please standardise the use of "sites" vs "records" throughout the report. "occurrences" is also used in the palaeo section.		Included
David Halkett	21	10		Perhaps specify why the material is not protected (ie Section 2(ii)a of the NHRA)		Included
David Halkett	22	11		Explain the Zones. Map? My earlier comments with respect to maps applies.		Added to figure 1
David Halkett	25	4	Fig 25	Fig 25: The map is difficult to use due to scale and names etc are illegible. How relevant is this map to the study? Can the scale be increased to cover a smaller geographical area??		Done
David Halkett	25	7	Fig 26	Also difficult to read labels. This map could be scaled up by confining the area closer to the "site". The caption to the figure is on the next page!		Done
David Halkett	26	9		Are you referring to graves generally or specifically to LSA graves		"pre-colonial" inserted before graves
David Halkett	29	26		Is there a possibility that the sites referred to in the mine with glass and shell may relate to earlier transhumance rather than mining/prospecting. If so, would these be protected as part of a living heritage system? Either origin scenario is possible! and difficult to tell if the material is not excavated and analysed.		It is possible, although its association with a mining camp suggests otherwise. This will be included.

David Halkett	33	12		There are no stockposts shown on Fig 35 in the mining/coastal strip. I realise fig 35 is just for sites identified on the 2023 Google Earth image, but were no stockposts in that area identified on earlier aerial photos when mining was still in its infancy? Please indicate if the early photos were interrogated, and if no stockposts were recognised, why that might be. One would think some earlier stockposts might have been in the lee of, or on either of the Boegoeberg's?		No stockposts were found on the 1937 historical aerial maps of the mining area
David Halkett	35	5-6		Why are Witbank and Swartbank favoured? Is it due to environment or something else? Perhaps as you indicated later, this is not fully understood and the community need to be asked why? Perhaps put in a line or two here in that regard.		It is likely to be environmental factors (grazing and/or water) but since we did not conduct surveys, this could not be verified.
David Halkett	35	14	Fig 35	Reference should be made to this figure earlier on in the report which would have addressed my earlier comment about the location of the RNP and RCBL		This has been done
David Halkett	35	25		Perhaps quote the Government Gazette/s for the WHS and the Buffer zone.		Done
David Halkett	37	12	Fig 37	Some labels not easy to read and blur out when magnified!		pasted in again and made larger. Seems fine. Might have lost quality converting to PDF?
David Halkett	38	2	Fig 38	I do not see any orange areas as referred to in the key? Also, the map does not show the development zones as per Fig 5 of the briefing document.	Orange area is shown around Zone 1 (harbour area). Please add the 10 zones on the map	Done. Though not on any of the other maps. It becomes too much information otherwise. Palaeo at least is a simple map.
David Halkett	39	1		I don't think there has been any explanation of the Heritage Grading system and reference to it may be obscure for those not familiar with the topic.		We should not have included these brief mentions of grade at the SEA stage dealing with sensitivity. More relevant to impact assessment so we have removed them and just retained the high/medium significance, etc.
David Halkett	39	3-5		My earlier comments wrt MSA (buried/open) applies. (buried undisturbed sites will be of high significance). No mention of BOG 1/2 sites which are in the WP1 area		Comment included.
David Halkett	38	15		Perhaps say "density of observed archaeological occurrences" rather than density of records"? Explain the difference between yellow and white symbols on maps more clearly		Done, colour circles explained.
David Halkett	39	13	Fig 39	I can't differentiate between red and dark red on the figure. Is the dark red obscured by the black disturbed areas? Rietfontein not labeled. The caption does not explain the two small sub-maps. One has to go back into the body text to find out!		Yes, obscured. One cannot show everything needed on one map and with space constraints. Hence the caption clarifies.
David Halkett	40	4	Fig 40	Cape Voltas, Wreck Point and Soco Reefs are not labeled on the map		Done
David Halkett	40	8		LSA burials are more likely to be associated with LSA middens, and where shell middens are densest along the coast, is where burials are most likely to be, and by the same reasoning, fewer inland. I don't think this is reflected in the sensitivity mapping presented in Figure 40(1).		The reasoning here was that although burials are far more likely to occur close to the coast, the PROBABILITY of actually finding a grave (based on c. 12 or 13 known from coastal Namaqualand so far) is extremely low per unit area. The risk to the development is thus low and hence overall sensitivity is low. Same argument that a human fossil could be found anywhere on the dorbank, but we cannot rate the whole area with dorbank as very high.
David Halkett	40	16	Fig 40	There are two Figure 40's. Numbering to be adjusted. The second should be Fig 41		Included
David Halkett	41	15		You refer to stockposts post 2007. What about those mapped from earlier aerial photos in the 1930's? Why are they not mentioned?		This has been explained.

David Halkett	42	2	Fig 42	Explain the rationale for 1km buffers around stockposts in more detail? How does such a buffer indicate " <i>areas favoured for settlement</i> " as referred to at page 41 line 15		1 km was a "random" number, but the reason for having the buffers has been explained.
David Halkett	42	2		My earlier comments wrt no stockposts in the mining area apply. If any were recognised they should be given the same treatment. What about the reference to Buchuberg at page 26 line 25: " <i>Buchuberg is a sacred place for the aboriginal inhabitants of the Richtersveld. It is also reputed to contain the grave of Kaptein Paul Links</i> " ( <i>Court Proceedings 2000</i> )". Does this not fall within the ambit of Living Heritage as it speaks to use of the coastal area in earlier times? Should some sensitivity not apply on Fig 42 pertaining to that. The use of the spelling Buchuberg vs Boegoeberg see page 27 line 12. Is the Buchuberg favoured by local communities?		<p>We assume that there was no local herder settlement closer to the coast because of lower density vegetation and hence poorer grazing. Cannot think of a better reason, but we certainly do not see any settlement in 1937.</p> <p>We have rated the graves at Boegoeberg in the graves section. Access has been blocked by the mine for a long time and it is not known without, social engagement whether the hills do still hold any cultural significance to the community. The hills (very high) and 1 km around them (high) have been captured in the landscape mapping.</p> <p>We cannot find the "Buchu" spelling used anywhere else so have added a footnote to that effect.</p>
David Halkett	42	7	and Fig 43	WHS buffer zone, the coastline, the R382 can be deduced but not labelled on Fig 43		This is the Oberholzer and Lawson map, which we cannot change. He sensitivity is explained in the preceding text (as we have done for each other sensitivity map).
David Halkett	44	1	Fig 44	No labels or key		Colour code description added to caption.
David Halkett	44	2		It is not clear if this the identified areas are visually sensitive, or have some other sensitivity? Mahe caption clearer		Again, see text description preceding the map and we have added there that it is largely for aesthetic reasons. The visual map is purely visual sensitivity and we note the addition of the features in this map as being for cultural (as per NHRA) reasons.
David Halkett	44	4		Table has no number/caption. As per my earlier comments, there is no map showing the zones referred to and makes it difficult to interpret the information in the table. Column 1 could indicate what the zones are for?		See fig 1 for labeled zones. Table caption added. No need to indicate proposed land uses in each zone at this point. Reader can refer back to figure 1.
David Halkett	45		Table (no number/caption)	With respect to "Terrestrial Archaeology": Boegoeberg 1 and 2 MSA sites were found in old sea cliffs buried under wind blown sand. Is there not a reasonable likelihood that similar sites may be exposed in old sea cut cliffs in a number of the coastal zones?		Included in Table 5.
David Halkett	45		Table (no number/caption)	Is Zone 2 not a conservancy area - no development? If so, why is it included on the table		Although Zone 2 = Conservancy, protocols will need to be implemented to protect heritage from moving sand, etc.
David Halkett	46	4		The HIA process has not been explained as far as I can see? Should be included earlier in the report probably in Section 2 and indicate why multiple HIA's will be required and possibly multiple specialist reports to go into the HIA's including VIA's. Do the standard legal processes apply in an SEZ?		It is about the EIAs. Every EIA must have an HIA. I do not think this is the place to describe the impact assessment process.
David Halkett	46	9		Are there any geological type sections in the mining area? I know such features were mentioned in reports in the De Beers mining areas for possible protection.		Pether says none that he is aware of.
David Halkett	46	26		Probably a very slim chance but perhaps some caution with respect to shipwrecks onshore/beach zones such as the Portuguese wreck found at NAMDEB by Noli		Included

David Halkett	47	1		I think this is an important point to be considered given sensitivities around burials. Discussions should be prioritised so policies in place when development occurs (if authorised).		Agreed
David Halkett	47	13		<i>Further consideration should be given to the appropriateness of the site and the local community, SANParks, UNESCO, SAHRA..... Add a comma after site?</i>		Done
David Halkett	54		Appendix 1 table	Site 1,3,4 Hart 2010. I think Hart et al found more sites 2010/2013 study of the wef. As far as I know these all had gps co-ordinates. Perhaps these were revisited and updated in the recent study and hence are not specified? Perhaps say which Hart sites were included/revisited?		Sites reported by Hart (2010/2013) both in and outside the study area are shown as yellow circles in Figure 13. Not relevant to specifically identify them or any other sites identified by others on the maps since we are just looking at sensitivity - they are identified with references in Appendix 1 though so the informaton is captured. One Hart site was not given co-ordinates and one site was found to not be a site when revisited.
David Halkett	General comment			I believe the range of possible heritage resources and sensitivity has been covered in the report. There are likely to be many more sites which will hopefully be identified during more specific surveys in the different SEZ zones. It is crucial that the lack of surveys resulting from non-compliance in earlier years is rectified so that the archaeological and more recent history of this section of the region is better understood.		

Chapter 6: Fisheries & Coastal Livelihoods						
Peer reviewer name	Page range	Line/s	Table/Fig/Plate	Peer Reviewer Comment	Note to authors from Review Editors	Responses to Peer Review Comments by authors
Paul Lochner	overall comment				The chapter predominantly emphasises negative impacts on fisheries and local livelihoods, with limited discussion on potential positive impacts or ways in which certain impacts could be managed to support fisheries and coastal communities. Given that the SEA is an integrated assessment informing future decision-making, it would be valuable to explore how certain project-related developments might also lead to benefits or improvements. For example, considerations could include improving existing ports, water for onland aquaculture, better patrolling of South Africa's EEZ to prevent foreign vessels exploiting our fish stocks, etc. Some additional points related to this have been noted in the review comments below.	We take the point that the study seems to be overly negative and not highlighting the potential benefits adequately, we believe this has been athrough individual comment responses. We have taken care to highlight the potential pitfalls of the project with the underlying assumption that the project holds substantial benefit to local communities, the province and the country should the pitfalls be thoroughly considered in a collaborative, proactive, transparent and reflexive planning approach that deviates from the 'normal' way of doing. We'd also like to highlight that this study is designed to be read in conjunction with the socio-economic study, where we expect direct social and economic benefits are foregrounded.. We've updated text in the ES and report to reflect this.
Paul Lochner	overall comment				On the theme of "ocean squeeze", and reduced access to the coast for fishers, two comments: (1) has the closure of DeBeers Namakwaland mine over the past 10-15 years not led to reduced access control on the coast and possibly increased access+? ; and (2) how significant is the portion of the fishing take (catch) from open access to the coast (access by "bakkies" as mentioned in the report)? Surely the majority is from small fishing vessels from the ports at Port Nolloth and Hondeklip Bay? (and other ports?) . Can you give a relative figures on fish catch from open access versus from ports?	Currently, only fishers from Port Nolloth are active in the area. They catch mainly WCRL nearshore. According to Fishing Rights Allocation Process from 2018, permits of 1250kg each were issued to 13 rightsholders although it is highly unlikely that they harvest that much. One netfish permit is still active but from the stakeholder engagement, they do not have the gear to exercise their right. Some linefishing (Snook) is ongoing but no data is available as to the amount of catch. Only recreational fishing at Alexander Bay Kleinzee; with Hondeklipbaai too far from Boegoebaai to access with their small boats via the sea. In theory the opening of mining area between Port Nolloth and Alex Bay did increase access but by then the jetty was too dilapidated and the fishers no longer had access to boats with engines. The area between Alexaner Bay and and Port Nolloth is also where Alexkor built cofferdams that likely contributed to the possible destruction of WCRL habitat in the area – effectively constituting another dimension of ocean squeeze.
Paul Lochner	overall comment				The chapter needs to provide a reference trend for the study area without the development. What has the trend been in the past 10 to 20 to 50 years for fisheries and livelihoods? If there is no development of the Port and SEZ, what trend is expected to continue?	There are no reliable data available on small scale fisheries to determine a reference trend due to the historically informal nature of the SSF sector. The recently implemented small scale fisheries policy has formalised the sector and with it, better monitoring and data management will ensue. However, studies suggest that the number of small scale fishers around the South African coast have remained fairly constant over the past 3 decades. Our assumption is that the same trend would be prevalent in the northern Cape. We have added some text to clarify within the report.
Paul Lochner	iii	CSIR	Acronyms page		Correct the full name for CSIR. It is "Council for Scientific and Industrial Research".	Corrected
Paul Lochner	2	13 . 33,			correct the grammar - line 13 "... to development projects..." ; line 33 " juvenile nursery grounds, "	Corrected
Paul Lochner	2	26-27			What is meant by "The study should also include other marine industries that were not included in the scope of the SEA"? I assume this means the wider fishing industry down to Saldanha and Cape Town. Please add a note to clarify this. What about mention of international fishing activities, including fishing in SA's EEZ?	Additional sectors does not only refer to the Industrial fishing sector, but also sectors such as the oil and gas sector who are not included within the scope of the study (as their activities fall outside the bounds set for WP1). However, these sectors are predicted to have an increasing footprint the area in the future as oil and gas exploration is ramped up. Whilst only explorative at this stage, these projects will have significant impact on the use of ocean space, and associated coastal areas in years to come. We have clarified this within the text.
Paul Lochner	2	overall comment			The issue of large-scale commercial fishing vessels using the Boegoebaai harbour was mentioned in early meetings with NCEDA as an issue raised by communities. The response was that the new port would not be accessible to large-scale fishing vessels. This issue has not come through in the Executive Summary. Presumably this has not emerged as a key issue?	This issue did not emerge at all from our stakeholder engagement.
Paul Lochner	3	overall comment			The Executive Summary identifies risks and recommendations to mitigate risks. It would be valuable to explore potential benefits or to consider how certain aspects of the proposed development might contribute positively to local fisheries? And actions to enhance those benefits or positive contributions/impacts? One aspect to consider is whether a port at Boegoebaai could play a role in supporting South African fisheries management. During a field trip with one of the locals, and also Specialist on the SEA, concerns were raised about international fishing vessels exploiting waters off the Namakwa coast, with the nearest suitable harbour for patrol vessels located in Saldanha. A habour at Boegoebaai could potentially assist by having vessels to protect the fish stocks from international exploitation?	We have updated the Exective summary to also include the potential benefits that we have identified. We have included some speculation about the potential benefit improved infrastructure such as freshwater (mentioned elsewhere in the review) and port infrastucture could have.
Paul Lochner	10	24-26			Commercial sector employment: Please clarify - these are national employment numbers, correct? Please add "national" in the sentence for clarity.	Clarification added.

Paul Lochner	11	5-16			Can you add a sentence on the effect of illegal international fishing in SA waters? Is there data on this? This links to earlier comment about possible benefit of access from Boegoebaai port to manage international fishing vessels in SA waters.	South Africa historically permitted very limited foreign fishing access, preferring to reserve its fisheries for domestic vessels. In recent years, however, foreign industrial fleets have been detected operating (often illegally) inside South Africa's EEZ, especially off the west coast of the country. However, the origin of foreign fleets in South African waters is not limited to illicit entrants. Some foreign-flagged longliners operate legally under agreements for tuna and swordfish, landing their catch in South African ports under the auspices of regional tuna management organisations (ICCAT and IOTC) and has issued licenses or joint-venture rights to a small number of foreign vessels for highly migratory species. (Standing, 2017). Text to clarify has been added to the report where appropriate.
Paul Lochner	20		Table 4, row with "aquaculture"		Table refers to ~70.7 tonnes aquaculture production in Northern Cape (DFFE). It will be interesting to know where this is and what species? Can you add this please?	The majority of the production in the Northern Cape is from inland, freshwater producers who focus on the production of African sharptooth catfish and tilapia. We have added a clarification in line with this comment and another later in the document in the relevant table.
Paul Lochner	23	57			Please add the name of the natural harbour in the Alexkor area, that is used by the diamond boats.	They use Port Nolloth harbour, the De Beers jetty, and Alexander Bay has a small natural harbour, called Alexander Bay harbour. Clarified in text.
Paul Lochner	24	92			Surely the catch limits and the requirement to sell fish via designated buyers (as imposed by DFFE) are also cumulative stressors on the traditional fishing? These issues were raised by local business people in Port Nolloth on a field trip in Oct 2024.	Catch limits are a necessary fisheries management tool to ensure sustainable yield of fish for generations to come. One could probably argue it is a restriction now, but at the same time, having nothing to catch in years to come because everything was over fished is a bigger stress. Catch limits are in this case a necessary tradeoff and are not a new requirement, they have always been in place. Whether designated buyers need to be used are dependent on the species - no such thing exists for linefish (small scale commercial and small scale fisheries sector); however the sale of west coast rock lobster is more controlled as a measure to reduce poaching.
Paul Lochner	24	100			Interesting to see that tourism activities are emerging at Kleinsee, post mining. I see these activities are unpacked in Table 6 for the 4 towns. I suggest you add a cross-reference somewhere here to Table 6 for more info.	Change implemented.
Paul Lochner	28	2			Check grammar for "The proposed t represents..."	Corrected
Paul Lochner	28	7			Check grammar for "mandates d stakeholder..."	Corrected
Paul Lochner	28		Figure 5		The colour for Private sector is Grey in the Pie Chart Key. But there is no grey in the pie charts? It is not clear which segment in the pie chart is Private sector. Please can you make the colours in the Key match the colours in the pie chart, and be clearly distinguishable for the reader. I think it makes sense to combine "private sector" and "private business"? What is the difference between private sector and private business? The Venn diagram has them combined.	There was an error in the pie chart which has been corrected. Private sector has been removed.
Paul Lochner	31	1			It is not clear what "impacts and aspects" are being referred to here? Is this now the impact of the proposed Boegoebaai port and SEZ? If so, then I think a sub-heading needs to be added here (2.2.3) to make it clear this is now the feedback from stakeholders on the impacts and aspects related to the proposed development program.	The nature of the impact and aspects have been clarified, and a sub-heading inserted as suggested.
Paul Lochner	32		Table 7		Heading for Table 7 needs to make it clear what "impacts and aspects" are being referred to? See above comment.	Heading for table adjusted in line with comment above.
Paul Lochner	34	41-42			Please show where the "the Orange Seamount and Canyon Complex EBSA" is on one of the maps. Or at least provide the distance from shore or some form of measurement (km) to understand how far away this is from the proposed port site.	The EBSA is 30km due west of the coast in the area of the proposed development. Clarifying text has been added.
Paul Lochner	39	34			Complete the sentence "irreversibly transforming the...."	Corrected
Paul Lochner	40		Table 10		Equitable Housing Policies - surely a potential benefit for local communities is that their existing property may increase in value?	This is indeed a benefit on a personal wealth level. However, housing is a fixed asset, and a house with a higher value doesn't mean you can afford the associated higher costs related to rates, taxes and maintenance. Clarifications regarding the beneficiary have been added to the text.

Paul Lochner	40		Table 10		Coastal livelihoods - The opportunity to integrate aquaculture and local communities into the SEZ is overlooked. For example, if the SEZ goes ahead, there will need to be freshwater supply, and an intended benefit for the local community is to oversize the planned desalination and water supply required to provide reliable water supply to the local community and municipality. This aspect is currently overlooked in this chapter. Freshwater supply could support new aquaculture that could assist mitigate the existing trend of declining fish stocks and declining catches.	We have added text related to the opportunity of alternative livelihoods such as aquaculture to the table and updated the recommendation accordingly.
Dr Nina Rivers	1	3-5		if appropriate, suggest being more specific and say "...for the proposed green hydrogen development..."		The Executive summary has been substantially changed and the text in question removed in its entirety.
Dr Nina Rivers	1	23		suggest a footnote of who you mean by 'experts' for 'expert consultations' as fishers are experts of the ocean and coast in their own right. If you flesh this out later then guide the reader to that section		We have clarified that we consulted scientific experts.
Dr Nina Rivers	2	2		Add a footnote of what you mean by 'gentrification'		
Dr Nina Rivers	2	13		add an 's' to: "to development project"		Change implemented
Dr Nina Rivers	2	13-15		Rather say "Current stakeholder engagement processes..." than "in use"		Change implemented
Dr Nina Rivers	2	16-21		Strongly agree with this key risk : Fragmented Environmental and Social Impact Assessments (ESIAs) and suggest you recommend that this Chapter 1 be read very closely with Chapter 4 (Heritage) and Chapter 5 (Socio-economics) among other mitigating factors		Change implemented
Dr Nina Rivers	2	27-30		give brief examples of these "other marine industries" in brackets		Change implemented
Dr Nina Rivers	2	33		add 's' to grounds: juvenile nursery ground,		Change implemented
Dr Nina Rivers	2	37		Suggest adding 'meaningful' as well: inclusive and meaningful stakeholder engagement. Then draw from Rivers et al. (2023. Pathways to integrate Indigenous and local knowledge in ocean governance processes: Lessons from the Algoa Bay Project, South Africa. Frontiers in Marine Science, Vol.9: 1-17) on what we mean by 'meaningful stakeholder engagement-see footnote 3 "By "meaningful" we mean engagement processes are not merely tokenistic but stakeholders have access to all relevant information, they understand it fully and have the capacity, agency and power to question, criticise and change processes they are not satisfied with" (page 11)		We've strengthened the references to meaningful stakeholder collaboration throughout the report in line with this comments and other's made by the reviewer.
Dr Nina Rivers	2	42-43		suggest including 'capacities' as well : "...that empower marginalised groups..."		Change implemented
Dr Nina Rivers	2	37-45		It is also not just marginalised communities who need to be capacitated but decision makers as well, with skills to be able to listen and know how to engage meaningfully with marginalised communities and to be able to take on board their suggestions where applicable. Suggest you mention this and give recommendations of how this could be done. Eg. training workshops with government officials/authorities on how to develop and facilitate meaningful stakeholder engagements (not just tick box exercises or mere consultation but actual dialogue and collaboration)-see Jacob, Celine et al. 2023. A two-way process - Social capacity as a driver and outcome of equitable marine spatial planning. Marine Policy.		Clarification around decision-making capacity has been added throughout the report where appropriate.
Dr Nina Rivers	3	16		Suggest to add 'sensitivity' as well: and cultural sensitivity and sustainability		Change implemented
Dr Nina Rivers	3	18		With regards to "resilient and empowered coastal communities" suggest that this Chapter give concrete examples of what this would look like and how this can be practically implemented		We have included a definition for resilient and empowered coastal communities within the report. We see resilient and empowered coastal communities are an endpoint for development planning and that all the recommendations for mitigation made within the report actively contribute towards building such communities.

Dr Nina Rivers	3	18-20		"Suggest adding ""if done well"" at the end: Aligning the Boegoebaai development with South Africa's broader sustainability goals can set a benchmark for future marine and coastal projects. "		Change implemented
Dr Nina Rivers	4	25-26		suggest adding 'diverse' as well: involving multiple and diverse stakeholders		Change implemented
Dr Nina Rivers	4	43		add 'meaningful': meaningful community participation		Change implemented
Dr Nina Rivers	4	33-49		Although SA legislation calls for 'transparent and inclusive' processes, government is very rarely able to execute these processes adequately. I suggest the authors acknowledge this here. See Rivers, N., Truter, H., Strand, M. et al. 2022. Shared visions for marine planning: insights from Israel, South Africa and the United Kingdom. Ocean & Coastal Management. <a href="https://doi.org/10.1016/j.ocecoaman.2022.106069">https://doi.org/10.1016/j.ocecoaman.2022.106069</a> . and also papers by Sowman, M and Sunde, J.	Changed, p4	Change implemented
Dr Nina Rivers	6	10-11		Regarding "traditional knowledge integration", agree and back up with following reference: Strand, M., Rivers, N. and Snow, B. 2022. Reimagining Ocean Stewardship: Arts-Based Methods to 'Hear' and 'See' Indigenous and Local Knowledge in Ocean Management. Frontiers in Marine Science. Marine Conservation and Sustainability. <a href="https://doi.org/10.3389/fmars.2022.886632">https://doi.org/10.3389/fmars.2022.886632</a> .		Change implemented
Dr Nina Rivers	6	33		Provide brief footnote of what 'telecoupling' is		Change implemented
Dr Nina Rivers	10	32		with regards to "There are more than 230 small-scale fishing communities..." suggest you specify-is this on the West Coast or in South Africa generally?		Nationally, clarified
Dr Nina Rivers	11	15-16		With regards to "mining and offshore oil and gas exploration" would suggest explaining a bit more about this and impacts on fisheries	Can you add a sentence on the effect of illegal international fishing in SA waters? Is there data on this? This links to earlier comment about possible benefit of access from Boegoebaai port to manage international fishing vessels in SA waters.	Both suggested changes have been made and the text updated.
Dr Nina Rivers	12	20-21		Suggest brief footnotes for these terms : filaments, retroreflections, and offshore Ekman transport		Change implemented
Dr Nina Rivers	22	10		Briefly specify what kind of mining		Clarified in text.
Dr Nina Rivers	22	27		add 'are': where alluvial diamonds are extracted		Change Implemented
Dr Nina Rivers	23	55		suggest to be more specific and add 'land and sea': eg has both land and sea access restrictions		Change Implemented
Dr Nina Rivers	24	98		add 'of': hamper the livelihoods of these coastal fishing communities		Change Implemented
Dr Nina Rivers	24	98-99		Briefly explain why there are water shortages and then would expect a discussion later on about possible risks and benefits of the proposed development with regard to water availability: "Due to water shortages over the last two years, Port Nolloth..."		Change implemented. The proposed development would require improving fresh water supply in the area, which then also holds potential for alternative livelihoods like tourism and freshwater aquaculture. Table 10 has been updated to reflect this aspect.
Dr Nina Rivers	24	108	Table 5	Suggest table description rather reads: Key coastal livelihood activities for each community of interest		Corrected
Dr Nina Rivers	28	2		Think a word is missing, possibly 'development': The proposed t represents		Corrected
Dr Nina Rivers	28	7		A word is missing: mandates d stakeholder engagement		Corrected
Dr Nina Rivers	28	8		Delete 'to': robust enough to in		Corrected

Dr Nina Rivers	28	12		Specify what 'its' refers to: each contributing to shaping its trajectory		Clarification added as suggested
Dr Nina Rivers	29	8-13		Suggest to add here that private sector dominance may also sideline marginalised groups		Clarification added as suggested
Dr Nina Rivers	29	33		Add full stop: considerations This scenario		Clarification added as suggested
Dr Nina Rivers	30	7		Suggest to add 'meaningful' as well: By prioritising inclusive engagement		Clarification added as suggested
Dr Nina Rivers	28	1		I see Indigenous rights groups represented in Figure 6 but do not read about them as a primary stakeholder group under Section 2.2 Is there a reason for this? I am not too familiar with the area but would think there is a good representation of this group there. If this is the case then would suggest highlighting this group along with small-scale fishers, NGOs and government.		Thank you for noting the Indigenous Rights Groups in Figure 6 and their importance. We recognise them as primary stakeholders and have placed them within the NGO category in the Venn diagram. We did this because the groups often function as NGOs advocate for their rights, environmental protection and cultural preservation. This allows us to consider their combined impact with other community organisations. Importantly, we understand that the Indigenous communities have their own distinct nature and specific rights. In our analysis we do consider their view points and concerns , particularly their traditional connections to the coastal environment and resources, even though they are grouped under NGOs.
Dr Nina Rivers	30	7-9		"With regards to this argument ("By prioritising inclusive engagement and addressing the concerns of marginalised groups, the initiative could foster community buy in and enhance its legitimacy") I dont like the term 'buy in' as it alludes to what Flannery et al ( ) coin as ""choreographed participation"" in ""post-political practices"" ""Post-political practices disempower stakeholders by replacing debate and dissensus with practices of governing concerned with "consensus, agreement, accountability metrics and technocratic environmental management" (Swyngedouw 2009, p. 604). Post-political practices subsequently frame 'issues' as being beyond politics or as being no longer contestable. Instead, problems are grounded in an all-consuming model of free-market neoliberal capitalism (Wilson and Swyngedouw 2014), the continuation of which becomes the solution to all issues"". Perhaps helpful to engage with Flannery et al.'s chapter Politics and Power in Marine Spatial Planning Wesley Flannery, Jane Clarke, and Benedict McAteer in Zauch, J. and Gee K. (2019) Marine Spatial Planning: past, present, future in order to reframe a more careful argument about the place and role of 'inclusive engagement'. "		We have used (and retained the term), as 'buy in' from stakeholders is terminology that is broadly understood across various scales and contexts. Given the report is written for a broad audience, from a diversity of backgrounds, we have decided to retain the term to develop common understanding. However, we have added some clarification on pp 31 to frame this initial buy-in as an important step in a meaningful inclusive engagement process with communities. Ultimately, our report recommends that communities must be seen as collaborators on the project, suggesting we need to move beyond processes where communities are expected to agree with decisions that are being made for them, and not with them.
Dr Nina Rivers	32		Table 7	Under Cross-Cutting Themes: Enviro Stewardship: Implement monitoring systems to track environmental and social impacts. Consider citizen science monitors as well...see recommendations by Flannery et al (2019) in Wesley Flannery, Jane Clarke, and Benedict McAteer in Zauch, J. and Gee K. (2019) Marine Spatial Planning: past, present, future		Change made as suggested
Dr Nina Rivers	32		Table 7	Capacity Building and Advocacy: Authors suggest partnering with NGOs to help capacitate-suggest private sector is also engaged and collaborated with as this aligns with current funding models for sustainability		Change made as suggested
Dr Nina Rivers	32		Table 7	With regards to: Transparent Communication: Develop culturally appropriate communication strategies. Suggest to make explicit here that technical reports and language are translated so anyone and all can understand and that innovative ways of communicating potentially complex concepts around risks and benefits are done clearly and efficiently. A practical recommendation here is that if government and the development agencies do not have these skills that they invest in outsourcing this to a company that does and can do this well		Change made as suggested
Dr Nina Rivers	33	3		I appreciate space is limited in this report but do suggest letting the voices of the communities themselves come through this report regarding the concerns they have of the proposed development eg. insert verbatim quotes from interviewed community representatives backing up the key risks and concerns highlighted in this report		Unfortunately, interviews were not transcribed verbatim and as such, we cannot supply direct quotes. Space in the report is also severely limited.
Dr Nina Rivers	33	11		re transdisciplinary development planning-if this is a primary recommendation then suggest it is detailed more in the recommendations and made very practical for practitioners as academics are still trying to settle on definitions and what transdisciplinary praxis looks like. Eg. working with stakeholders does not merely mean holding 'consultations' with them but actually collaboratively building a knowledge base together from which to make informed decisions...etc.		Clarification text has been added to Section 3.4. We have also provided a definition to expand on the term transdisciplinary as a footnote to ensure that our use of the term is clear.

Dr Nina Rivers	33	19-20		Emphasise the following in executive summary as well as list of recommendations further along in the chapter: further, directed studies with primary fieldwork and extensive stakeholder engagement are needed		The Executive Summary has been updated in line with this comment and other's made by the various reviewers.
Dr Nina Rivers	33	30		suggest adding "negative": resulting in further negative socio-economic consequences		Change made as suggested
Dr Nina Rivers	34	18		kelp does not need to be capitalised: "on Kelp harvesting..."		Corrected
Dr Nina Rivers	36	28		add 'meaningful': and meaningful community engagement		Change made as suggested
Dr Nina Rivers	37	8		add 'commercial, small-scale and traditional': perspectives of fishers		Change made as suggested
Dr Nina Rivers	37	8-10		Suggest adding: "Meaningful, equitable and collaborative engagements are required with traditional, small-scale and This includes integrating the perspectives of commercial fishers in order to integrate their perspectives into decision-making..."		Change made as suggested
Dr Nina Rivers	38		Table 9	Authors recommend co-managment frameworks and practices-Although co-management is a very good recommendation I feel that it is pertinent to note that although South African legislation does support this, there are very many challenges that exist in actually realising this as marine resources management and governance is still very top-down. The ICMA supports co-management by introducing Coastal Management Committees, which can include IPLCs in decision-making. Perhaps a practical recommendation could be that any potential developments have to support government to support, capacitate and resource these Committees in order to be as effective and strong as they can be. Suggest authors think of other practical ways that co-managment frameworks can be actualised.		Clarification text has been added to Table 9 to expand and strengthen the recommendation in line with the reviewer's suggestion.
Dr Nina Rivers	39	19		Suggest adding "in Boegoebaai" to make the reading of this proposed development more concrete as a development that will impact upon specific communities in a specic place..."The proposed development..."		Change made as suggested
Dr Nina Rivers	39	34		Add 'be'; not overlooked		Corrected
Dr Nina Rivers	39	34		Unfinished sentence:...with a real risk of irreversibly transforming the....?		Corrected
Dr Nina Rivers	39	36-37		Change to 'safeguarding' : ...and safeguard		Corrected
Dr Nina Rivers	40	2 to 3		Change to 'promote': and promoting		Corrected
Dr Nina Rivers	40	3 to 6		Suggest add 'and practices': people centred policies....		Change made as suggested
Dr Nina Rivers	40		Table 10	Add 'capacitate': Equitable Housing Policies: Recommendations: Encourage and capacitate community participation in housing decisions to maintain sociocultural integrity.		Change made as suggested
Dr Nina Rivers	41	2		Add 'and equitable': Effective and equitable development planning		Change made as suggested
Dr Nina Rivers	41	4		Suggest 'adaptive' or 'responsive' rather than "structured" participation		Change made as suggested
Dr Nina Rivers	41	6		Suggest adding 'or ignoring': overlooking or ignoring underlying social and environmental challenges		Change made as suggested

Dr Nina Rivers	42	4		Suggest adding 'diverse': diverse knowledge systems		Change made as suggested
Dr Nina Rivers	42	6		Add 'meaningful' : Embedding meaningful community engagement		Change made as suggested
Dr Nina Rivers	42	21-24		Suggest this line go into 'Recommendations' (line 25) section to highlight this point as it is key! "By viewing communities as genuine partners throughout planning and implementation, local buy-in is enhanced, benefits are distributed more fairly, and development pathways become more enduring and appropriate to the specific social-ecological context."		Change made as suggested . We have also refined the text in the recommendation (pp 44).
Dr Nina Rivers	42-43		Table 11	"Under ""Miscommunication and mistrust among stakeholders due to lack of transparency""-seems Impact and Benefit needs to be switched around?"		Corrected
Dr Nina Rivers	42-43		Table 11	This table is really good and addresses the primary impacts and benefits well. In order to enhance the recommendations in this table however, suggest authors consider Table 1 (especially sections 4.1-4.3) in Rivers et al. (2023). Pathways to integrate Indigenous and local knowledge in ocean governance processes: Lessons from the Algoa Bay Project, South Africa. Frontiers in Marine Science, Vol.9: 1-17.		The recommendations in the table have been enhanced as suggested.
Dr Nina Rivers	43		Table 11	Remove extra 'lack of': Requirement for cultural sensitivity as a there is a lack of lack of respect for local customs and practices.		Corrected
Dr Nina Rivers	44	3-4		Suggest adding 'truely' before 'equitable: how to achieve 'truely' equitable and sustainable marine and coastal development		Change made as suggested
Dr Nina Rivers	44	7-8		Suggest adding 'preservation' after 'heritage': cultural heritage preservation		Change made as suggested
Dr Nina Rivers	44	12		Suggest adding 'to this group' after challenges: pose serious challenges to this group		Change made as suggested
Dr Nina Rivers	44	20		Suggest continue being explicit about who the affected parties are by adding 'ie. small-scale fishers, traditional fishers, Indigenous peoples and local marginalised communities' after 'project': directly affected by the project		We have not implemented this change as we are here offering a general comment that is applicable to anyone who will be affected by the proposed development, regardless of context or role. We feel adding the clarification suggested would narrow the interpretation of the statement.
Dr Nina Rivers	44	23		Suggest adding 'and supplimentary' after 'alternative':alternative livelihoods		Change made as suggested
Dr Nina Rivers	44	25		Suggest adding 'and capacity': that build trust and capacity		Change made as suggested
Dr Nina Rivers	1-44	1-33		A well written and researched report, considering all aspects of Fisheries and Coastal Livelihoods. Sound recommendations made as well. Would have liked to see more of the actual voices of the fishers and other interviewees in this report however. If there is scope to add direct quotes from interviewees that support the risks and benefits identified as well as recommendations from them, then would suggest authors do this.		Thank you. As mentioned in response to a earlier comment, we don't have verbatim recording or transcription of the interviews so are unable to supply direct quotes.
Greg Schreiner	overall comment				The study is well researched with some substantive findings, but these seem lost in the Executive Summary (ES) which is very general and tepid. My suggestion is to increase the length of the ES to 3 pages and add in an iconic image (see below). Use punchy, informative language that a policymaker can do something with. The ES is by far the most important element of the study...	Thank you for your comments. We have revised the executive summary as suggested and in line with the various reviewers comments.
Greg Schreiner	overall comment				Bring more of the receiving environment into the ES. The overarching objective of WP1 is to showcase the nature/sensitivity of the receiving environment, the impacts that are likely to manifest, and how we should consider these impacts/manage them in future planning e.g. future EIAs, municipal planning docs etc.	Change made as suggested

Greg Schreiner	overall comment				For WP1, we, by in large, avoid the language of RISK and OPPORTUNITY, since this language is specifically calibrated with highly specific meanings for WP2. For WP1, we can talk about positive and negative impacts. This will cause confusion otherwise.	Language in report has been adjusted where appropriate to frame as negative and positive impacts instead of risk and opportunity as suggested.
Greg Schreiner	overall comment				I would still like to see an integrated overlay map of where the different stakeholder groups are doing stuff on the sea or near the coast (this should be the iconic image for the ES). CSIR can help generate this map. The map can rather spatially specific (if data exists) or more notional. Map: fishing areas, aquaculture, subsistence users, recreational users, tourism hotspots, offshore mining etc.	The creation of an integrated map has been discussed and resolved with the CSIR team.
Greg Schreiner	28	20			Government are the largest stakeholder group and most powerful, why would this increase bureaucracy?	The text has been clarified - bureaucracy has the potential to increase as governance structures and regulations become more complex. The presence of government officials do not in essence lend itself to increased bureaucracy.
Greg Schreiner	29	24			Where are these small-scale fisheries, how many are there, where do they operate? The findings on small-scale fisheries are too general	The text in the Executive Summary and report has been strengthened to foreground the small scale fisheries finding. The Annex reports also contain a lot of contextual detail related to the SSF.
Greg Schreiner					If a port were developed at that specific site, who exactly would be displaced/compromised?	The Port Nolloth fishermen use Boegoebaai as a safe haven during storms. It must also be borne in mind that fishers are not operating in the area anymore due to being squeezed out of the area previously.
Greg Schreiner	overall comment				Remove background context about the SEA, this will be covered in other introductory chapters e.g. Ins 1-8 of ES; Pg 4 Ins 1-14, Figure 2	Change has been made as suggested
Greg Schreiner	11		Figure 3		Figure 3 needs an overlay of where the study area is located in reference to the identified fishing areas	We've added another map that shows the study area in relation to the fishing intensity in more detail.
Greg Schreiner	28	2 and 7			Check errors	Corrections made
Greg Schreiner	overall comment				Need to stratify the "local community" instead of implying that all of the community are against the development programme. I'm certain the community will be split between those against on principle, those somewhat in support (if benefits flow equitably), and those ambivalent/unsure.	We've added some detail in this regard to the Executive summary and the descriptions of the receiving Environment. In essence - Hondeklipbaai fishing coop is neutral, they feel they will not be affected due to the distance from Boegoebaai. The tourism industry in Kleinsee is positive as it may increase revenue in the sector but some feel it may lead to increased pollution on the coast due to increased ship traffic. Port Nolloth - business owners positive re job creation; fishing coop negative due to ocean squeeze and sensitive ecosystem. Alexander Bay - generally positive- if it leads to job creation in the area (with specific reference to locals community member employment).
Jabulani Maluleke	44	12			What are the governance gaps that the study has identified that would need to be reinforced by the developers, taking in to considerations that it is recommended that transparent governance frameworks need to be developed?	Governance gaps referred to here are high level and related to the implementation and application of statutes and regulations that govern the ocean and coastal and terrestrial space. As mentioned in the report, the ocean space is highly complex, with over 50 International and national laws governing the space. Many of these regulations appear to be in conflict, with decision-makers (including those in government) not equipped to navigate the complexities that arise. Regulations also do not always take the expanded scale of the ocean system (where impacts can propagate so much further due to the nature of the ocean), nor cumulative impacts into consideration. This often leads to poor decision-making. The issues related to stakeholder engagement within environmental authorisation processes related to oil and gas exploration (seismic) surveys are recent and clear example of how governance gaps can emerge. We have added text to clarify within the report.

Chapter 7: Port Sustainability Planning						
Peer reviewer name	Page range	Line/s	Table/Fig/Plate	Peer Reviewer Comment	Note to authors from Review Editors	Responses to Peer Review Comments by authors
Paul Lochner				ADD TWO PAGE SUMMARY THAT CONVEYS THE SCOPE OF THE STUDY AND KEY FINDINGS AND RECOMMENDATIONS – I think key info to add here is the summary table with 4 pillars of sustainability and criteria for each and related SDGs, and priority activities.		Added Executive Summary
Paul Lochner	Page 1	Line 8		This will become a chapter in the SEA. So we will edit this. “document” = “chapter”		Agreed
Paul Lochner	Page 2	Line 12		The general reader does not know about the 5th generation ports, and the categories of ports. Pls change this to a sentence that explains there are these 5 categories for ports, and modern ports now aspire to be 5th generation ports, such as Port of Singapore?? Give one example.		This was addressed with an example
Paul Lochner	Page 2	Line 25		Sustainable ports fits within wider context of sustainable maritime shipping, especially use of fossil fuels for marine fuels. IMO is addressing these shipping sustainability issues. Can you add a paragraph (below) to position this Port Sustainability study within wider context of Sustainable Maritime Shipping? Maybe mention IMO commitment to de-fossilize shipping fuels by ..., as this is directly relevant to Boegoebaai and GH2. SA is a member of the IMO.		Paragraph has been added
Paul Lochner	Page 3	Line 1	Table 1	In my opinion, the sustainability vision is that the new port is a net benefit. It is not just about avoiding negative impacts on the environment and people, but about providing a net benefit to env and people (socio-ecological system). The key question for Boegoebaai is “how can the port be designed and operated to provide a net socio-ecological benefit for the region?”		Agree, amended the related text in the table to reflect this
Paul Lochner	Page 4	Line 2		Can you pls add a text box with a summary of the Strategy or Plan from TNPA that sets out their vision and commitment to sustainable port planning? (include reference to the TNPA doc/website). This then shows what TNPA has committed to.		Could not find document, but provided a reference for some insight
Paul Lochner	Page 6	Line 5		Susan - I love this Pete Ashton term - but maybe it confuses the reader?? You can work it in if you wish. And this is not the worst horrendogram every 😊. It is busy, but clear.		Removed reference to horrendogram
Paul Lochner	Page 6	Line 6		You used “considering” in consecutive sentences. Doesn’t read well.		Amended the text
Paul Lochner	Page 7		Table 4	I think you should also have MARINE as this section includes dumping at sea & dredge disposal under ICMA ; and “Marine Pollution (Control and Civil Liability) Act (No. 6 of 1981)”		Agree, amended text in table
Paul Lochner	Page 12	Line 8		Figure 5 shows “sustainability performance” on scale from 0-100. Is this %? Its not clear how this was reached/measured? Or what this means? Is this the Sust Performance of existing ports in SA? Pls add a sentence to explain. I suggested some text.		Added text to better explain radar diagram
Paul Lochner	Page 12	Line 14	Figure 5	For what? For existing ports in SA?		This was for a hypothetical port, we have amended legend to better explain , ...Circles of Port Sustainability visualizing a port’s performance against various sustainability outcomes
Paul Lochner	Page 13	Line 27		Move Fig 6 to come before Table 6, as it is mentioned earlier in text.		Done
Paul Lochner	Page 13		Table 6	These Sust Outcomes are useful - these are essentially the benchmark/reference for Port Sustainability goals that the SEA can propose for the Boegoebaai (BB) Port . But some need adapting to BB context. I think we can keep Table 6 as generic Sust criteria. And then unpack Tables 7-10 as customised criteria for BB Port. See comments under IMPLEMENTATION.		Agree

Paul Lochner	Page 14		Table 6	The "Port-City relations" under Social Dimension seems to assume the port is in a city. For Boegoebaai (BB), this is different - it is more a Port-region nexus - how does the port integrate with the regional communities (big issue, ofcourse) and regional infrastructure (I see this below in ECONOMIC? There is ofcourse no city at or near the port. This "description" can be adapted for BB.		Within the 'social dimension this talks to relations with adjacent municipalities. Here it will not be a city municipality, but there are local/district municipalities that they need to consider relations with (changed city to 'municipal')
Paul Lochner	Page 14		Table 6	This comment is linked to the description of the "Interconnectivity" sustainability outcome in the Economic Dimension. Regional infrastructure integration - see comment above - crucial for BB		Agree
Paul Lochner				PAUL HAS REWORKED TABLES 7 TO 10 – SEE SEPARATE DOC UPLOADED TO FOLDER. I WILL ALSO EMAIL IT TO BABALWA AND SUSAN. I THINK THE TABLES DO NOT NEED TO INCLUDE THE PHASES. I ALSO ADDED EXTRA ACTIVITIES, BASED ON TABLE 11, AND TAKING INTO ACCOUNT WHAT WE HAVE ALREADY LEARNED ABOUT THE BB PORT.		Revised and amended these accordingly
Paul Lochner	Page 16		Table 7	RESTRUCTURE TABLE TO REMOVE PORT DEV PHASES? I think having the 4 port dev phases makes the Table too complex, as so much of the content is across all phases.		Agree, revised and amended these tables
Paul Lochner	Page 20	Line 2		Up to here, the report is starting to get more relevant to BB. But then it goes global generic again. I think section 4.1 (World Port Sust Program) and the Section 4.2 (Toolkit) is also quite generic (e.g., Table 12) , though linked to TNPA. So, I think it would be good to have an intro paragraph here in Section 4 that provides a few lines on the World Port Sust Program and link to info in Appendix. And similarly, provides a few lines on Toolkit and relevance to BB, and link to full info in Appendix. We can discuss further.		The section of the report was restructured with a dedicated chapter (Chapter 4)specifically showing how this applies to sustainability planning for Boegoebaai
Paul Lochner	Page 21		Table 11	SDG no 8: Empty bullet?		Removed
Paul Lochner	Page 22	Line 1		See above comment		The section of the report was restructured with a dedicated chapter (Chapter 4)specifically showing how this applies to sustainability planning for Boegoebaai
Paul Lochner	Page 22	Line 1 to last		Take this further - What are the implications of this Toolkit for Boegoebaai and TNPA planning for BB Port? Pls add a clear link.		The section of the report was restructured with a dedicated chapter (Chapter 4)specifically showing how this applies to sustainability planning for Boegoebaai
Paul Lochner	Page 24	Line 6 to Line 14		SUSAN and BABALWA - for Implementation plan, we cannot write this here in this report. This "Port Sustainability" will be a Chapter in the SEA, alongside these other chapters on "Infrastructure planning": etc. This comparison and integration needs to happen in the SEA.  NB: We need to do this with the other specialists. We need an online workshop with key specialists to unpack and cross-check these sustainability criteria for the port, drawing on their expertise/insights. This will be a great value add.  I think we need two workshops (phased approach): First, internal workshop with relevant authors (e.g. infrastructure, socio-economic etc) Second, workshop with Transnet on sustainability criteria in Tables 7-10. I think we'll get better input in a workshop (discussion) than peer review from TNPA.  DISCUSS: 1) When to have these workshops relative to timing on other studies? 2) Should we customise Table 6 for BB, or have Table 6 as generic, and focus on Sust criteria for BB port in Tables 7 to 10? I think we can keep Table 6 generic, and focus on enhancing/customising Tables 7-10.		The section of the report was restructured with a dedicated chapter (Chapter 4)specifically showing how this applies to sustainability planning for Boegoebaai
Paul Lochner	Page 24	Line 16 to Line 21		I think we must work this into the Sustainability criteria for BB Port, with the specialists		Agree

Cebile Nzuzo	Page 2	Line 4		include "pollution of natural resources" in the list of activities mentioned		Included
Cebile Nzuzo	Page 3	Line 12		<p>"Transnet has committed Climate targets in their ESG Strategy, such a goal to ""Achieve net-zero emissions by 2040""</p> <p>an the following objectives</p> <ul style="list-style-type: none"> <li>•Reduce carbon footprint by 50% by 2030</li> <li>• Secure 50% of the financing for decarbonization initiatives by 2026, reaching 100% by 2030</li> <li>• Complete a climate change vulnerability and risk assessment across the value chain by 2025</li> <li>• Secure 25% of the financing for climate change adaptation by 2026, increasing to 50% by 2030 and 100% by 2040"</li> </ul>	I will share the approved ESG Strategy document	Transnet's climate target goal and objectvie was included in report with reference to ESG Strategy
Cebile Nzuzo	Page 3		Table 1	Energy efficiency from renewable sources shouldn't it be "Energy efficiency from alternative sources" instead	Consider using the word alternative sources instead of renewable sources for our context. I really love table 1 comparison	Amended text in Table
Cebile Nzuzo	Page 6		Table 4	You are missing "Marine Living Resources Act 18 of 1998" under marine and land-based pollution	I see you included this in page 36 under tourism	This is not a primary piece of legislation dealing with pollution, most key Acts were included in Table 4
Cebile Nzuzo	Page 11	Line 41 to 43		Please include these departments "Economics, Planning and Development, Project Delivery unit, Security, Utilities Development, Real Estate, New Business Development, Port Operations, Harbour Master, Human Resource, Customer Relation Management and Corporate Affairs"	Please mention all the departments that were consulted	Included
Cebile Nzuzo	Page 12	Line 36		Environment and Sustainability is not a department but a unit in the HSE department	Change "TNPA's Environment and Sustainability Department" to TNPA's Environment and Sustainability Unit	Amended
Cebile Nzuzo	Page 13	Line 18		Environment and Sustainability is not a department but a unit in the HSE department	Change "TNPA's Environment and Sustainability Department" to TNPA's Environment and Sustainability Unit	Amended
Cebile Nzuzo	Page 19	Line 5 to 6		Just appreciate the inclusion of the sentence	Thank you for including this part	Acknowledge, thank you
Jabulani Maluleke	Page 18		<b>Table 10</b>		What are IPCC scenarios? And how can these be intergrated into the development in order to ensure Climate resilient development.	Text amended as follows: -Planning and design of infrastructure for enhanced climate resilience to be undertaken using the future climate change scenarios (e.g. in terms of changes in, temperatures, sea level rise and intense storms) as prepared by the Intergovernmental Panel on Climate Change (IPCC) scenarios. TNPA is currently undertaking a project on climate change adaptation including downscaling relevant IPCC climate scenarios for application at specific port planning and design scales along South Africa's coast.
Jabulani Maluleke	Page 9	25			Taking into consideration the implementation of mechanism for funding opportunities, what must the developers do now in order to ensure that the project is ready for funding in the future?	In order to access these funding opportunities early design plan must clearly indicate sustainability end points. The processes and tools in this chapter provides guidance in this regard. Also included this in the text

Jabulani Maluleke					Is there any port in the world which can be used as a point of reference for the sustainable port planning, construction and operations?	Singapore's Tuas Port, officially opened in 2022, is a good example of an emerging 5 <sup>th</sup> generation port (Maritime Port Authority of Singapore 2024), but most ports in the world are in a transition phase. We have referenced to this port in Chapter 2 , end of 2nd paragraph on page 2
Jabulani Maluleke	29		Appendix A		besides the International obligations, national legislations and policies, is there any recognised standards which are used internationally that can be adopted?	The Nairobi Convention's Toolkit for Sustainable Port Development, specifically aimed at consolidating international best practice in sustainability for application in our region. The document has not yet been releases officially ((but has officially adopted by Nairobi Convention COP), but we included Table 12 that provides references to documents that provides guidance under different topics