



PGS
HERITAGE

Proposed TGS Seismic Survey

Located approximately 120 km offshore of St Helena Bay, extending north along the western coastline to approximately 230 km offshore of Hondeklip Bay, off the West Coast, South Africa.

Heritage Impact Assessment

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REVISION HISTORY

Version	Issue Date	Description of Changes
001	28 September 2022	First draft

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Declaration of Independence

- I, Wouter Fourie, declare that –
- General declaration:
- I act as the independent heritage practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting heritage impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in section 38 of the NHRA when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected from a heritage practitioner in terms of the Act and the constitutions of my affiliated professional bodies; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the NEMA.

Disclosure of Vested Interest

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;

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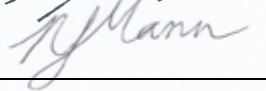
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ACKNOWLEDGEMENT OF RECEIPT

Report Title	The proposed TGS Seismic Survey Project		
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EXECUTIVE SUMMARY

PGS Heritage (Pty) Ltd was appointed by Environmental Impact Management Services Consulting (Pty) Ltd (EIMS) on behalf of TGS Geophysical Company (UK) (TGS) to undertake a Heritage Impact Assessment (HIA) that forms part of the Basic Environmental Assessment (BA) for their proposed 3D seismic survey off the West Coast of South Africa. The application area is located between approximately 120 km offshore of St Helena Bay, extending north along the western coastline to approximately 230 km offshore of Hondeklip Bay, Off the West Coast, South Africa.

Site Name

TGS West Coast 3D Reconnaissance Project

Site Location

The proposed project is located offshore between approximately 120 km offshore of St Helena Bay, extending north along the western coastline to approximately 230 km offshore of Hondeklip Bay.

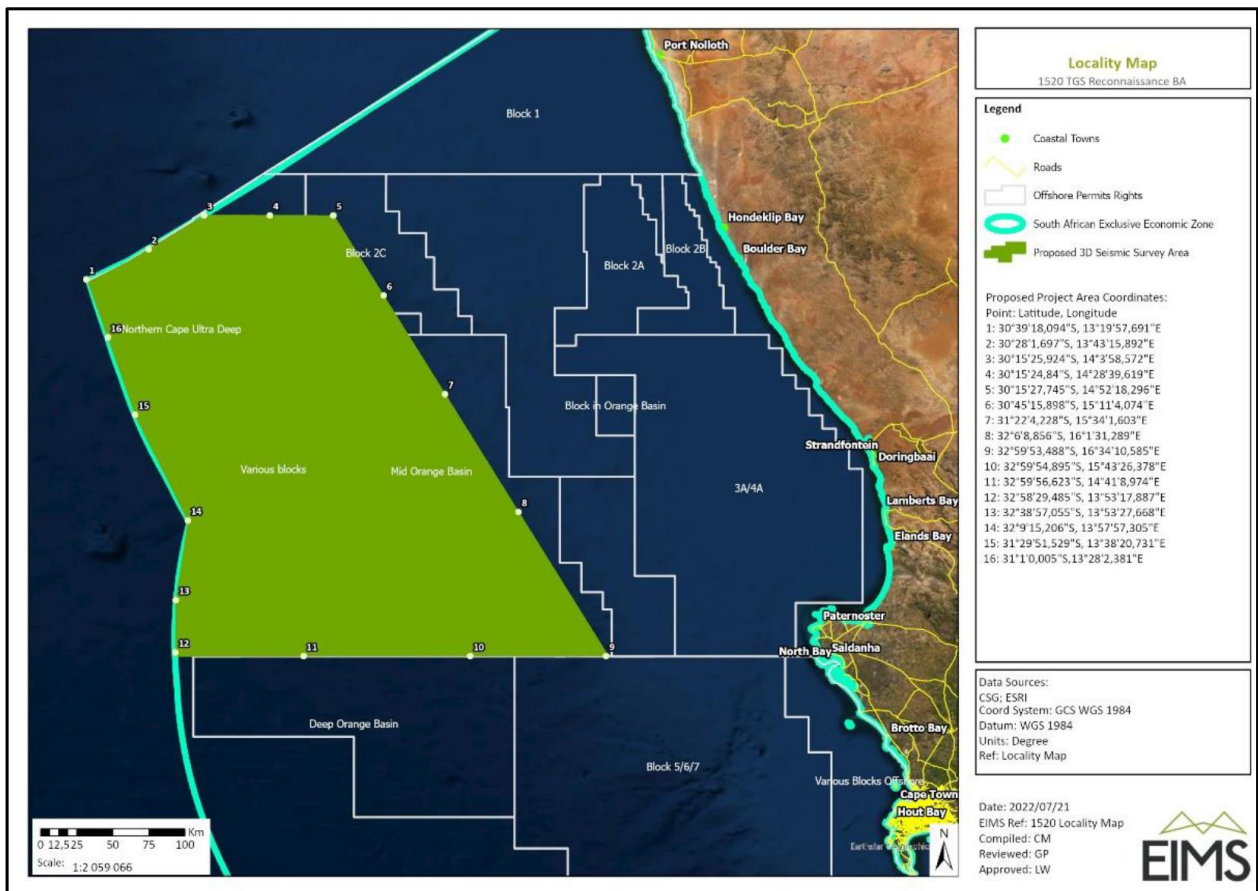


Figure 1 – Map indicating the location of the proposed survey project (green polygon) (source: EIMS).

Heritage Statement

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It must be noted that, first and foremost, a large section of the affected communities not only view them as small-scale fishers but also as indigenous people and, as such, are intrinsically linked to the ocean and the land they have lived on for centuries. The resurgence movement through which Khoi and San descendants are reclaiming their identity has in recent decades afforded these communities the ability to re-establish their cultural roots and grounding in an ancient landscape. This sentiment is echoed in the founding affidavit submitted (5 Feb 2022) during the appeal submitted to the first Searcher application by CJ Adams. It notes that the ocean is not only important for fishing but also has spiritual meaning and is a place of healing and holds healing powers for the indigenous communities. It further expanded that the ocean and its resources play an important part in their community's history and heritage.

Community identity and culture are thus strongly linked to the ocean and what it can provide, physically and spiritually. Communities have coexisted with the ocean for generations. This existence has created a culture and heritage that defines their way of living, community, and kinship unique to the West Coast of South Africa. Cook (2001) describes this as maritimity, a process whereby the sum of cultural adaptations made by coastal populations becomes imbued with meaning and culture. This is evident in community structures, cultural events, and seasonal activities.

The public meetings and focused discussions with interlocutors have shown that these communities and groupings are struggling economically due to decades of turmoil in the fishing industry. An industry plagued by the closing of fish processing plants, fishing licence and quota issues, and diminishing catches due to environmental and industrial impacts, to name a few. This economic downturn leads to social issues within the communities. Foremost are poverty, loss of social fabric, substance abuse, teenage pregnancies, and violence. In all the interviews, the above issues were raised as central to their social existence and community experience.

As with Smith (2015), Loulanksi (2006), and Ndoro (2105) emphasised that culture is more than just the tangible but is also shared beliefs, values, language, traditions, functionality, meaning and community connections. Considering the various values and heritage significance as listed in section 3(3) of the NHRA, the cultural and living heritage associated with the communities and indigenous people along the southwestern and west coast of South Africa holds heritage significance. It is part of the national estate and holds importance as a way of life for small-scale fishers and Khoisan descendants alike. The physical and spiritual interaction with the ocean and the shorelines through millennia resulted in a maritimity that developed into the cultural fabric as they experience it today.

The significance of such intangible and living cultural heritage features can potentially have a combined heritage grading of Grade II or even Grade I through further research. However, grading inevitably implies the investigation into and consideration of a Provincial or Heritage declaration of significance for a largely intangible cultural heritage. This is problematic as the NHRA provides for the proclamation/declaration of place, objects, or structures as Provincial or National Heritage Sites and only refers to intangible/living heritage relating to such place, objects, or structures.

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Impact Statement

The scientific studies conducted for this project identified impacts on the fishing stock as low for all types of species.

By inference, a potential impact on fishing yield could be expected and thus potential economic impact on communities due to reduced caught fish volumes.

We considered that the recommended mitigation measures, as listed in the specialist reports for the project, focus on the reduction of impacts on fish species and the projected reduction of the impact on the commercial and small-scale fishery catch yield. These mitigation measures should then indirectly positively impact the potential negative impacts on the cultural heritage of the communities to be impacted.

By using the impact assessment methodology as provided by EIMS, we can project a pre-mitigation negative impact on a regional scale over the long term with a moderate intensity due to the potential indirect impact on the communities and, ultimately, their heritage, with a high probability of this impact occurring. The pre-mitigation impact on heritage resources is rated as MEDIUM. The potential residual impact on heritage resources, with mitigation measures from the scientific studies is projected as LOW with a medium confidence factor.

PGS is aware of the current Searcher application and the potential of another application soon occurring in the Orange Basin. Communities have expressed a definite concern about the multiple application occurring in their fishing waters and the potential long-term effect of these surveys resulting in Oil and Gas companies starting applications for production rights based on the findings of these reconnaissance surveys. *It is, however, the understanding that only one 3D survey will be done in the overlapping areas even if the various applications are successful over the same area.*

At this stage, cumulative impacts are purely speculative. Still, the potential for the future increase in cumulative impacts due to current and future seismic surveys and the potential for future Oil and Gas production cannot be excluded but is not quantifiable at this stage for cultural heritage.

Recommendations

The following recommendations are based on the UNESCO ICH guidelines. They are aimed at safeguarding the cultural heritage of the small-scale fishers and cultural groupings in the influence of this project:

- Re-assess post-project the potential effects on the identified communities and their intangible cultural heritage. This will require consideration of the socio-economic baseline developed during this environmental impact process against quantified economic damage and losses and human development impacts in a follow-up socio-economic. It will enable the heritage specialist to evaluate the link between the socio-economic changes induced by the proposed project as it relates to changes in the intangible cultural heritage practices of the communities.

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- Based on the outcomes, **provide resources and support for communities** to develop and undertake safeguarding measures or plans to enhance the **mitigation capacity of their intangible cultural heritage** by **fostering dialogue, mutual understanding and reconciliation** between and within communities. It is anticipated that this can be achieved through the implementation of the mitigation measures in the Social Impact Assessment.

We know that 3D seismic surveys can locate wrecks on the surface and sometimes below sediments. Any shipwrecks or pieces noted during the survey must be shared with the SAHRA MUCH Unit for inclusion in the national database. These could then be identified and incorporated into the EMP.

Considering the assessment based on the fieldwork findings and the scientific studies relating to the impact on fisheries, I am of the opinion that the impact of the proposed project on the intangible cultural heritage resources and practices can be mitigated through the implementation of the recommendations in this report.

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TERMINOLOGY AND ABBREVIATIONS

Archaeological resources

This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;
- features, structures, and artefacts associated with military history which are older than 75 years and the site on which they are found.

Cultural significance

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic, or technological value or significance

Development

This means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place or influence its stability and future well-being, including:

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or boards;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil

Early Stone Age

The archaeology of the Stone Age between 700 000 and 2 500 000 years ago.

Fossil

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Mineralised bones of animals, shellfish, plants, and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage

That which is inherited and forms part of the National Estate (historical places, objects, fossils as defined by the National Heritage Resources Act 25 of 1999).

Heritage resources

This means any place or object of cultural significance and can include (but not limited to) as stated under Section 3 of the NHRA,

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, and
- sites of significance relating to the history of slavery in South Africa;

Holocene

The most recent geological period which commenced 10 000 years ago.

Late Stone Age

The archaeology of the last 30 000 years associated with fully modern people.

Late Iron Age (Early Farming Communities)

The archaeology of the last 1000 years up to the 1800's, associated with iron-working and farming activities such as herding and agriculture.

Middle Stone Age

The archaeology of the Stone Age between 30 000-300 000 years ago, associated with early modern humans.

Palaeontology

Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Abbreviations	Description
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AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
CRM	Cultural Resource Management
ECO	Environmental Control Officer
EIA practitioner	Environmental Impact Assessment Practitioner
EIA	Environmental Impact Assessment
EIMS	Environmental Impact Management Services Consulting (Pty) Ltd
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
I&AP	Interested & Affected Party
LSA	Late Stone Age
MSA	Middle Stone Age
NEMA	National Environmental Management Act
NHRA	National Heritage Resources Act
PHS	Provincial Heritage Site
SADC	Southern African Development Community
SAHRA	South African Heritage Resources Agency
Searcher	Searcher Geodata UK Ltd

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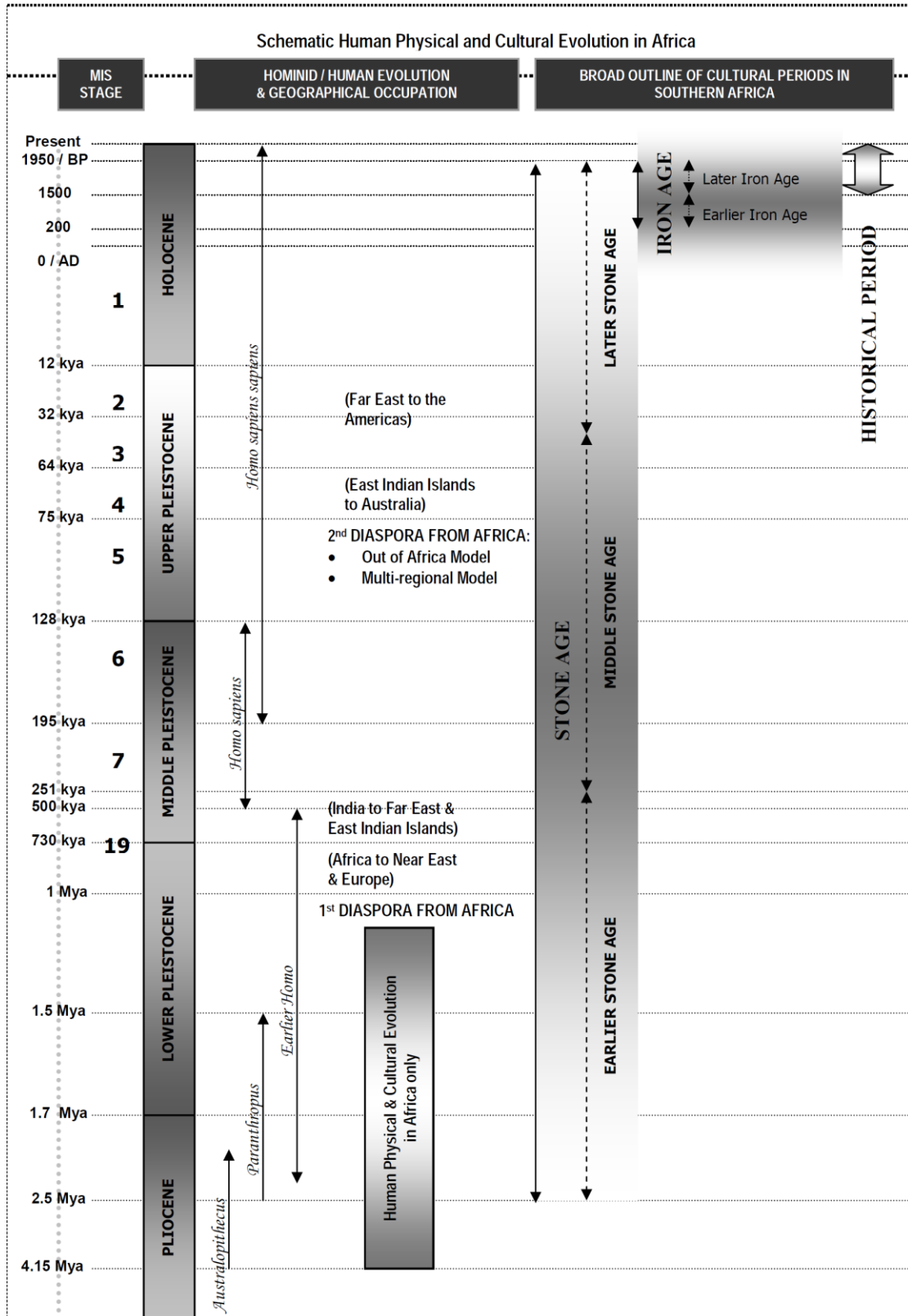


Figure 2 – Human and Cultural Timeline in Africa

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1 INTRODUCTION

PGS Heritage (Pty) Ltd was appointed by Environmental Impact Management Services Consulting (Pty) Ltd (EIMS) on behalf of S TGS Geophysical Company (UK) (TGS) to undertake a Heritage Impact Assessment (HIA) that forms part of the Basic Environmental Assessment (BA) for their proposed 3D seismic survey off the West Coast of South Africa. The application area is located between approximately 120 km offshore of St Helena Bay, extending north along the western coastline to approximately 230 km offshore of Hondeklip Bay, Off the West Coast, South Africa.

1.1 SCOPE OF THE STUDY

The aim of the study is to identify the heritage resources that may be impacted upon by the proposed project. The HIA aims to inform the BA to assist the developer in managing the discovered heritage resources in a responsible manner, to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999) (NHRA).

1.2 SPECIALIST QUALIFICATIONS

This HIA Report was compiled by PGS Heritage (PGS).

The staff at PGS has a combined experience of nearly 90 years in the heritage consulting industry. PGS and its staff have extensive experience in managing HIA processes. PGS will only undertake heritage assessment work where they have the relevant expertise and experience to undertake that work competently.

The following individuals were involved with this study:

- Wouter Fourie, the Project Coordinator and Principal Heritage Practitioner, is registered with the ASAPA as a Professional Archaeologist and is accredited as a Principal Investigator; he is further an Accredited Professional Heritage Practitioner with the Association of Professional Heritage Practitioners (APHP).
- Nikki Mann, the author of this report, is registered as a Professional Archaeologist with the Association of Southern African Professional Archaeologists (ASAPA). She has 4 years of experience in the heritage assessment field and holds a Master's degree (MSc) in Archaeology from the University of Cape Town.

1.3 ASSUMPTIONS AND LIMITATIONS

Not detracting from the stakeholder engagement completed, it is necessary to realise that the intangible heritage elements identified during engagements do not necessarily represent all

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possible intangible cultural heritage elements present in this region. Various factors account for this, including the layered histories (e.g., memory of conflict, dispossession, and disempowerment through time) associated with the West Coast region, specifically in terms of intangible and living heritage resources associated with the ocean landscape. The values attributed to the ocean by the communities do not necessarily align to provide one definitive single significance to the ocean. Instead, the depth and complexity of values assigned to intangible heritage in this landscape depends on peoples' relationship to the ocean and their feelings about the proposed project.

1.4 LEGISLATIVE CONTEXT

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

- Notice 648 of the Government Gazette 45421- general requirements for undertaking an initial site sensitivity verification where no specific assessment protocol has been identified
- National Environmental Management Act (NEMA), Act 107 of 1998 – Appendix 6
- National Heritage Resources Act (NHRA), Act 25 of 1999

1.4.1 NEMA – APPENDIX 6 REQUIREMENTS

The HIA report has been compiled considering the NEMA Appendix 6 requirements for specialist reports, as indicated in the table below. For ease of reference, the table below provides cross-references to the report sections where these requirements have been addressed.

1.4.2 THE NATIONAL HERITAGE RESOURCES ACT

- National Heritage Resources Act (NHRA) Act 25 of 1999
 - Protection of Heritage Resources – Sections 34 to 36; and
 - Heritage Resources Management – Section 38

The NHRA is utilised as the basis for the identification, evaluation, and management of heritage resources and in the case of Cultural Resource Management (CRM), those resources are specifically impacted by development as stipulated in Section 38 of NHRA. This study falls under s38(8) and requires comment from the relevant heritage resources authority.

2 TECHNICAL DETAILS OF THE PROJECT

The following background information is provided by EIMS.

2.1 LOCALITY

TGS proposes to undertake a 3D seismic survey off the West Coast of South Africa. The proposed project area approximately 120 km offshore of St Helena Bay, extending north along the western coastline to approximately 230 km offshore of Hondeklip Bay over several petroleum licence blocks

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(Figure 3). The area of interest for the proposed 3D seismic survey is approximately 57 400 km² in extent.

The survey area corner coordinate points are as follows:

Table 1 - Coordinates of the proposed survey area.

Point	Latitude	Longitude	Point	Latitude	Longitude
1	32°59'53.46"S	16°35'02.75"E	6	30°40'16.36"S	13°20'38.26"E
2	32°59'57.95"S	13°53'17.25"E	7	30°32'53.92"S	13°35'15.39"E
3	32°39'06.43"S	13°53'26.20"E	8	30°15'21.82"S	14°04'05.31"E
4	32°09'29.22"S	13°58'04.38"E	9	30°15'27.76"S	14°52'28.65"E
5	31°31'44.64"S	13°39'01.12"E			

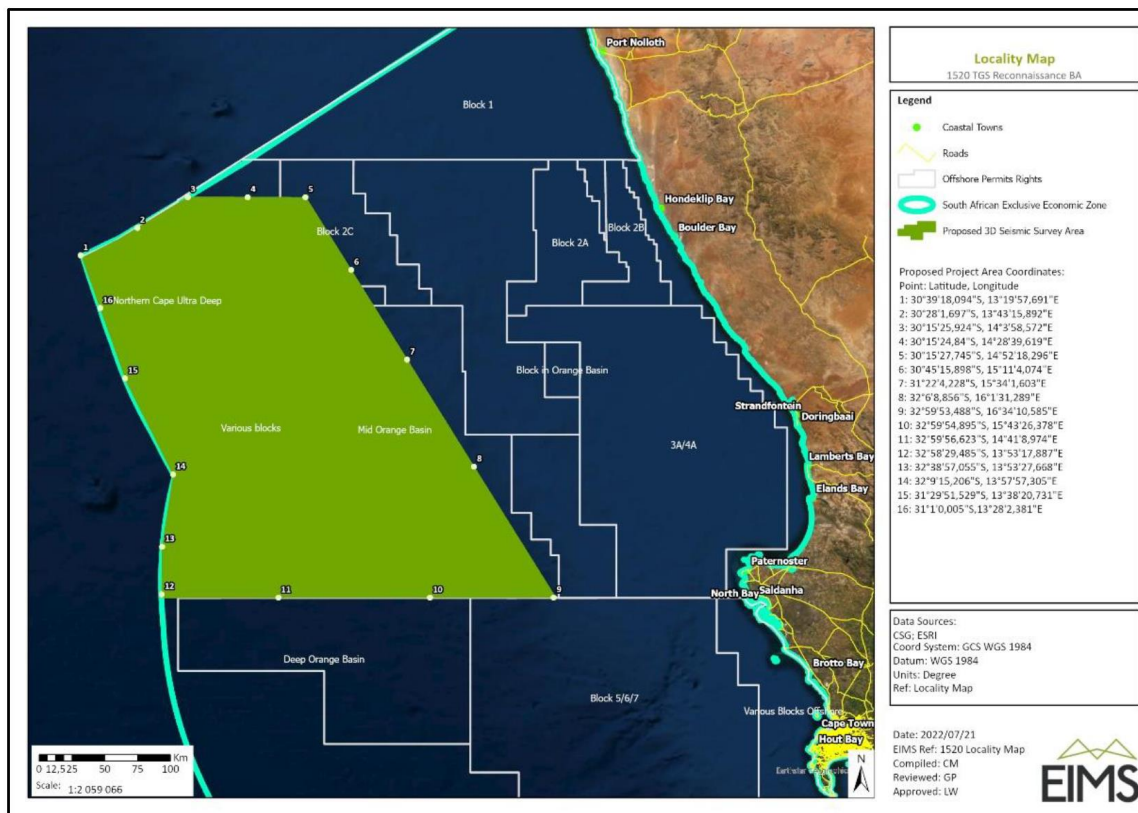


Figure 3 – Map indicating the location of the proposed survey project (green polygon) (source: EIMS).

2.2 TECHNICAL PROJECT DESCRIPTION

TGS is planning to conduct a seismic campaign over in the Orange Basin during the best available window of opportunity in either 2023 or 2024, subject to granting of the Reconnaissance Permit and vessel availability. The Reconnaissance Permit Area is approximately 57 400 km² in extent. Water depths in the Reconnaissance Permit Area range from ~500 m to nearly 4 000 m. The area is situated roughly between the Orange River mouth and Cape Columbine, approximately 120 km offshore at its closest points. The total 3D survey duration would be in the order of up to four months.

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The anticipated acoustic source (airgun) and hydrophone array would consist of 24 active guns with operating pressures of 2 000 pound-force per square inch (psi), situated some 50 m behind the vessel at a depth of 7 - 8 m below the surface. The 3D survey will involve multiple streamers (up to 12 streamers spaced 100 m apart) up to 12 000 m long, towed at a depth of approximately 8 m.

The seismic vessel would steam a series of predefined transects describing the survey grid, the headings of which would be fixed and reciprocal. During surveying the seismic vessel would travel at a speed of between four and six knots and the sound sources would be “fired” by the airgun array. As the seismic vessel would be restricted in manoeuvrability (a turn radius of approximately 5 km is expected), other vessels should remain clear of it. A support vessel usually assists in the operation of keeping other vessels at a safe distance.

Each triggering of a sound pulse is termed a seismic shot, and these are fired at intervals of 6 - 20 seconds (depending on water depth and other environmental characteristics) (Barger & Hamblen 1980). Each seismic shot is usually only between 5 and 30 milliseconds in duration, and despite peak levels within each shot being high, the total energy delivered into the water is low. Airguns have most of their energy in the 5-300 Hz frequency range, with the optimal frequency required for deep penetration seismic work being 50-80 Hz.

Sound levels from individual airguns use today in the seismic industry range from 200 to 232 dB re 1 μ Pa at 1 m, for small to large individual guns, respectively. For airgun arrays, sound levels range from 235 dB re 1 μ Pa at 1 m for a small array (500 cubic inches) to 260 dB re 1 μ Pa at 1 m for large arrays (7 900 cubic inches) (Bröcker 2019). The majority of the produced energy is below 250 Hz, with 90% of the energy between 70 to 140 Hz, although pulses do contain some higher frequencies up to 16 kHz (Bröcker 2019). It must be noted, however, that the sound level specifications for airgun arrays refer to sound levels in the vertical direction directly beneath the airgun array, generally near its centre, with nominal sound levels in the horizontal direction being ~10-20 dB lower (Caldwell & Dragoset 2000; Dragoset 2000).

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3 ASSESSMENT METHODOLOGY

The section below outlines the assessment methodologies utilised in the study.

3.1 METHODOLOGY FOR ASSESSING HERITAGE SITE SIGNIFICANCE

This HIA report was compiled by PGS for the proposed project. The applicable maps, tables and figures are included, as stipulated in the NHRA (no 25 of 1999) and the National Environmental Management Act (NEMA) (No. 107 of 1998). The HIA process consists of three steps:

Step I – Literature Review and initial analysis: The background information to the field survey relies greatly on the Heritage Background Research undertaken for the study area.

Step II – The first phase of stakeholder engagement was part of the Public Participation process conducted by EIMS for the project. These public meetings were attended by a specialist from PGS to identify heritage themes highlighted by attendees to the meetings. Individuals and grouping were then identified to engage with in focussed meetings and interviews.

Step III – Focussed interviews with identified individuals and cultural group representatives. The aim was to build a database of tangible and intangible heritage that could potentially be impacted by the proposed project.

3.2 HERITAGE SIGNIFICANCE

Heritage significance classification standards use is based on the heritage classification of s3 in the NHRA and developed for implementation keeping in mind the grading system approved by SAHRA for archaeological impact assessments. The update classification and rating system as developed by Heritage Western Cape (2021) is implemented in this report

Site significance classification standards prescribed by the Heritage Western Cape Guideline (2016), were used for the purpose of this report (**Table 2** and **Table 3**).

Table 2 - Rating system for archaeological resources

Grading	Description of Resource	Examples of Possible Management Strategies	Heritage Significance
I	Heritage resources with qualities so exceptional that they are of special national significance. Current examples: Langebaanweg (West Coast Fossil Park), Cradle of Humankind	May be declared as a National Heritage Site managed by SAHRA. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	Highest Significance

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Grading	Description of Resource	Examples of Possible Management Strategies	Heritage Significance
II	Heritage resources with special qualities which make them significant, but do not fulfil the criteria for Grade I status. Current examples: Blombos, Paternoster Midden.	May be declared as a Provincial Heritage Site managed by Provincial Heritage Authority. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	Exceptionally High Significance
III	Heritage resources that contribute to the environmental quality or cultural significance of a larger area and fulfils one of the criteria set out in section 3(3) of the Act but that does not fulfil the criteria for Grade II status. Grade III sites may be formally protected by placement on the Heritage Register.		
IIIA	Such a resource must be an excellent example of its kind or must be sufficiently rare. Current examples: Varschedrift; Peers Cave; Brobartia Road Midden at Bettys Bay	Resource must be retained. Specific mitigation and scientific investigation can be permitted in certain circumstances with sufficient motivation.	High Significance
IIIB	Such a resource might have similar significances to those of a Grade III A resource, but to a lesser degree.	Resource must be retained where possible where not possible it must be fully investigated and/or mitigated.	Medium Significance
IIIC	Such a resource is of contributing significance.	Resource must be satisfactorily studied before impact. If the recording already done (such as in an HIA or permit application) is not sufficient, further recording or even mitigation may be required.	Low Significance
NCW	A resource that, after appropriate investigation, has been determined to not have enough heritage significance to be retained as part of the National Estate.	No further actions under the NHRA are required. This must be motivated by the applicant or the consultant and approved by the authority.	No research potential or other cultural significance

Table 3 - Rating system for built environment resources

Grading	Description of Resource	Examples of Possible Management Strategies	Heritage Significance
I	Heritage resources with qualities so exceptional that they are of special national significance. Current examples: Robben Island	May be declared as a National Heritage Site managed by SAHRA.	Highest Significance
II	Heritage resources with special qualities which make them significant in the context of a province or region, but do not fulfil the criteria for Grade I status. Current examples: St George's Cathedral, Community House	May be declared as a Provincial Heritage Site managed by Provincial Heritage Authority.	Exceptionally High Significance
III	Such a resource contributes to the environmental quality or cultural significance of a larger area and fulfils one of the criteria set out in section 3(3) of the Act but that does not fulfil the criteria for Grade II status. Grade III sites may be formally protected by placement on the Heritage Register.		

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Grading	Description of Resource	Examples of Possible Management Strategies	Heritage Significance
IIIA	Such a resource must be an excellent example of its kind or must be sufficiently rare. These are heritage resources which are significant in the context of an area.	This grading is applied to buildings and sites that have sufficient intrinsic significance to be regarded as local heritage resources; and are significant enough to warrant that any alteration, both internal and external, is regulated. Such buildings and sites may be representative, being excellent examples of their kind, or may be rare. In either case, they should receive maximum protection at local level.	High Significance
IIIB	Such a resource might have similar significances to those of a Grade III A resource, but to a lesser degree. These are heritage resources which are significant in the context of a townscape, neighbourhood, settlement, or community.	Like Grade IIIA buildings and sites, such buildings and sites may be representative, being excellent examples of their kind, or may be rare, but less so than Grade IIIA examples. They would receive less stringent protection than Grade IIIA buildings and sites at local level.	Medium Significance
IIIC	Such a resource is of contributing significance to the environs. These are heritage resources which are significant in the context of a streetscape or direct neighbourhood.	This grading is applied to buildings and/or sites whose significance is contextual, i.e. in large part due to its contribution to the character or significance of the environs. These buildings and sites should, consequently, only be regulated if the significance of the environs is sufficient to warrant protective measures, regardless of whether the site falls within a Conservation or Heritage Area. Internal alterations should not necessarily be regulated.	Low Significance
NCW	A resource that, after appropriate investigation, has been determined to not have enough heritage significance to be retained as part of the National Estate.	No further actions under the NHRA are required. This must be motivated by the applicant and approved by the authority. Section 34 can even be lifted by HWC for structures in this category if they are older than 60 years.	No research potential or other cultural significance

3.2.1 Methodology used in Determining the Significance of Environmental Impacts

The methodology used to determine the environmental impact significance was provided by EIMS and is explained in **Appendix B**.

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4 DESKTOP STUDY

4.1 OVERVIEW OF THE STUDY AREA AND SURROUNDING LANDSCAPE

For the last 200 000 years, the West Coast has been an attractive region for hunter-gatherers, pastoralist groups and modern-day fisher people, due to its wealth of marine and terrestrial resources. The ocean is an integral part of West Coast's natural and cultural heritage. West Coast residents are proud of their unique 'Weskus' culture. According to Schultz (2010), "a family's association with the West Coast is their claim to Khoisan heritage as constituting a historical bond with the cape West Coast".

4.1.1 PRE-COLONIAL ARCHAEOLOGICAL CONTEXT

Marine resources have a long history of human exploitation. Evidence from archaeological sites suggest that the West Coast region was occupied from the Early Stone Age (ESA) through to the Middle Stone Age (MSA) and Later Stone Age (LSA), up until the arrival of early European settlers from the 18th century onwards. There are numerous sites (including shell middens, stratified cave deposits, rock art, stone tools, and fish traps) recorded along the coast that demonstrate that the rocky shorelines were attractive to hunter-gatherers through time (e.g., Halkett, 2003; Halkett and Dewar, 2007; Sadr *et al.*, 1992; Kaplan, 1993, 1996, 1998, 2008, 2011a, 2014; Morris, 2006; Webley, 2009; Jerardino *et al.*, 2013). Much of what we know about settlement, subsistence strategies and diet along the coast is linked to these shorelines (Parkington 1976; Hart & Miller, 1994). Whilst gorges and stone sinkers are probably the best evidence for technical fishing equipment in the LSA, marine shell middens also demonstrate that the coastal zone was particularly favoured by LSA people (Deacon, 1995).

4.1.2 SHELL MIDDENS

Marine shell middens have been identified within 1km of the coastline, near estuaries and in dune fields which lie adjacent to rock shores. While pre-historic people likely favoured the rocky shorelines for ease of access to marine resources, middens have also been found further inland, where people would have been able to exploit additional resources such as game life and fresh water.

In some instances, these shell middens are associated with domestic artefactual debris which suggests that they in fact represent occupation sites of long duration. Whilst the opposite can be said for midden sites that do not contain a formal stone artefact component, and instead may represent visits of short duration. These pre-historic people were the ancestors of the San and Khoikhoi.

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According to archaeologists, several shell middens in the Vredenburg Peninsula are associated with both San and Khoikhoi groups who were harvesting the shorelines and estuaries of the West Coast in a sustainable and patterned manner (Parkington et al. 1988).

4.1.3 STONE FISH TRAPS

The remains of fish traps (*visvywers*; *stone-walled tidal fish traps*) have been recorded along the South African coastline from St Helena Bay to Mossel Bay (Goodwin, 1946; Avery 1975; Phillip et al., 2010). Along the south-western coastline, these traps, which use “the tidal range to allow fish to enter pre-built enclosures and be trapped at low tide”, provide evidence of early fishing techniques. The preserved fish traps vary in shape, size, and spatial complexity. Identifying the architects of these traps is, however a contentious issue.

Initially, researchers believed that the fish traps on the south coast were ancient maritime resource systems that originated among LSA people after 2000 years ago with the arrival of Khoikhoi herders (Avery, 1975; Gribble, 2006). More recent research suggests that the development of fish traps along the southern and western coasts dates to the 19th century. Furthermore, these structures may have been introduced by European farmers as part of the farming-fishing system when intensive exploitation of inshore fish by local farmers occurred (Hine, 2008, 2009; Hine et al. 2010).

In 1987, Graham Avery recorded a tidal fish trap in Mauritzbaai, south of Jacobsbaai (Kaplan 2004). Hart and Halkett (1992) have also identified the remains of at least six traps in the intertidal zone at Wilde Varkens Valley, St Helena Bay.

4.1.4 INDIGENOUS PEOPLES

4.1.5 INTRODUCTION

Before the colonial era, there were several diverse ancient tribes who traversed the valleys and plains of the present-day West Coast region of South Africa. The origins of the West Coast fishing communities can be traced back to the San and Khoikhoi peoples who lived within this region. Together, the Khoi and the San are the First Peoples of South Africa.

In 1928, a German physical anthropologist Leonard Schultze, created the term ‘Khoisan’, to stress the similarities between the Khoikhoi and the San (Le Fleur and Jansen, 2013; Secorun, 2018).

The settlers used the term ‘Bushmen’ when referring to the San, and many of whom the colonists’ called ‘Bushmen’ were, in fact, Khoikhoi or former Hottentot. Today, this term is considered derogatory, and instead, scholars would rather refer to hunters and herders together as ‘Khoisan’.¹

¹ <https://www.sahistory.org.za/article/khoisan>

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It should be noted that although Khoi and San Peoples may share some experiences, culturally, they remain two distinct groups, and the general preference amongst both Khoi and San people is to be called by their clan names.

4.1.6 THE SAN²

During almost the entire Holocene period, small groups of San hunter-gatherers were present in southern Africa. The San are the direct descendants of the first peoples of southern Africa.³ It should be noted that the term “San” is used to cover over a dozen distinct hunter-gatherer groups who speak distinctive “click” languages (incl. the Khwe, !Xun, Ju'hoansi, Naro, !nuu and other groups). These groups lived across Namibia, South Africa, Botswana, and Zimbabwe. The San were small groups of nomadic people who lived by the ethos of “all people are equal”. They hunted and gathered resources and did not keep livestock.

It is generally agreed amongst academics that the San were the first inhabitants of the Cape region. During the latter part of the Holocene, there were hunter-gatherers living on the West Coast who made seasonal use of the coastal resources (Parkington and Hall, 1987). Several archaeological sites, including Duyker Eiland, which is in Britannia Bay, confirmed the importance of shellfish, seals, marine birds, crayfish, and beached whales as a food source for the local inhabitants during this time (Robertshaw, 1979).

4.1.7 THE INTRODUCTION OF KHOIKHOI

For thousands of years, the Khoikhoi⁴ people have occupied and moved around Southern Africa as nomadic herders. The Khoikhoi were large groups of nomadic herders who owned substantial herds (incl. cattle and sheep) and migrated for pasture, water, and food resources. It is understood that Khoikhoi peoples have a spiritual connection to land, where land is perceived as a gift from nature to be cared for.

Note that the Khoikhoi term is an umbrella term which refers to different tribes. The Khoikhoi people comprise four historical groupings: the Griqua, Nama, Koranna and Cape Khoi (incl. further subgroupings). Today, the Nama people are primarily located in the Northern Cape. The Griqua are in the Western Cape, Eastern Cape, KwaZulu Natal and Gauteng, and various other parts of the country. The Korana people, live primarily in Kimberly and the Free State. The Cape Khoi are in the Western and Eastern Cape.

Evidence suggests that around 2000 years ago, the pastoralist Khoikhoi entered South Africa along the West Coast into the Cape region (Smith, 1987, Sealy and Yates 1994; Henshilwood, 1996;

² *The Khoikhoi and the early Dutch settlers called these groups Sonqua (literally ‘San’)* .

³ <https://www.hr-dp.org/files/2015/07/06/G0516746.pdf>

⁴ *Note that the use of the terminology of Khoikhoi or Khoekhoe is used by various scholars and writers. This report will be using Khoikhoi as the standard.*

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Avery, 1975; Schweitzer, 1979; Deacon et al., 1978;). They brought a new way of life, from its northern origins, to South Africa. The Khoikhoi introduced domesticated livestock and new material culture (incl. pottery) into the region. They relied more on sheep as a meat resource and hunted and gathered (Schapera, 1933). Groups living close to the coast would also exploit shellfish, seals, and other marine resources. The St Helena Bay (Slipper Bay) region appears to have provided the Khoikhoi with invaluable resources, including whale meat obtained via 'cetacean traps'⁵.

One of the most important West Coast pastoralist sites, Kasteelberg, is an open-air archaeological site located 4km from the coast. It provides evidence of occupation by herders between 1800 and 1600 years ago (Klein, 1986). The occupants of the site focused on harvesting seals and the presence of sheep bones also indicated that the inhabitants were most likely herding domestic stock (Klein, 1986; Smith, 2006).

It is thought that the indigenous people in the Cape populated a region from Northern Namibia to the Cape of Good Hope and from the Atlantic Ocean to the Fish River in the East (**Figure 4**). The area between Saldanha and Vredenburg was occupied by the CochoQua and the ChariGuriQua (GuriQua) group occupied the lower Berg River area which included St Helena Bay and regions around Picketberg.

Some researchers choose to use the term "Peninsular Khoikhoi" when referring to the *Gorachoquas*, *Goringhaiquas* and the *Goringhaiconas* ("strandlopers") and "Surrounding Khoikhoi" for the *Cochoqua*, *Chainouqua* and *Hessequa* (see Brink, 2000; Nienaber, 1989; Wilson, 1990).

⁵ "Places where whales often strand themselves along the shore are known as 'cetacean traps'. These are areas where minima in the earth's magnetic field cross the shoreline, and where there are offshore reefs." (<http://www.sawestcoast.com/history.html>)

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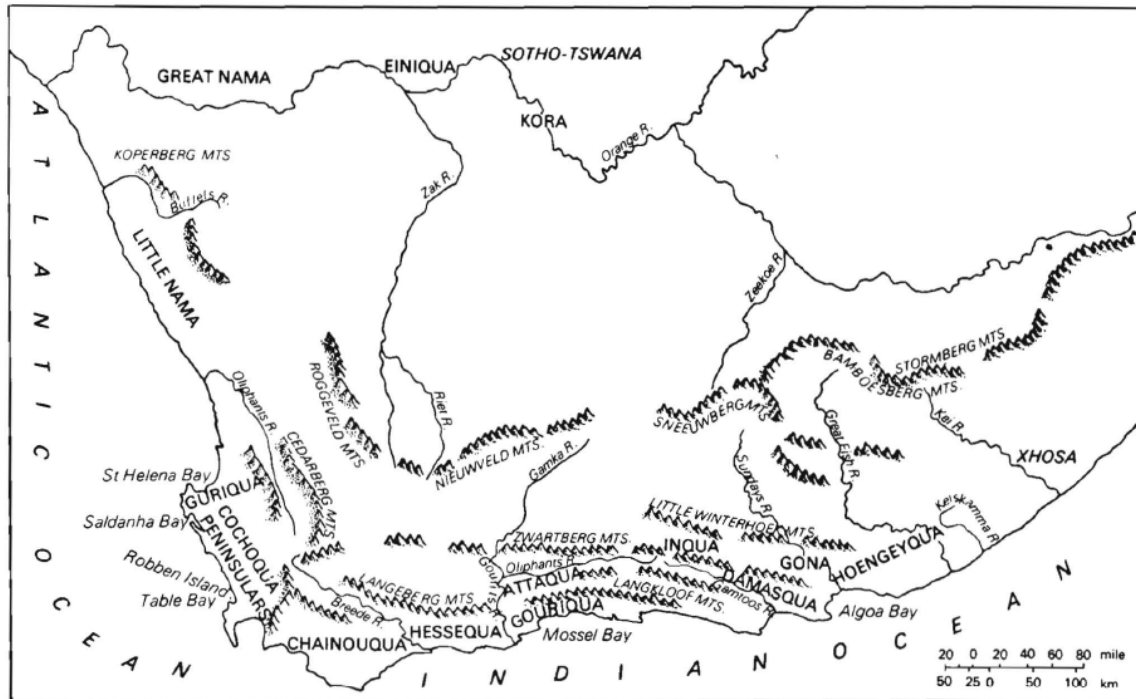


Figure 4 – Map illustrating the approximate locations of Khoikhoi before contact with the Europeans (in the southwest Cape ca. 1650) (Source: Elphick and Giliomee, 1979).

In the pre-colonial era, the relations between the Khoikhoi and the San were relatively stable due to a mutual acknowledgement of territories. Although the San and Khoikhoi seemed to have co-existed for a period, it appears that, to some degree, the San groups were displaced (Elphick, 1977; Parkington *et al.* 1986). It's assumed that the Khoikhoi moved into areas that had previously been utilised by the San, thus forcing the San to move into more isolated coastal regions (Manhire, 1987). The San's "settlement and subsistence strategy changed from one based on the large-band occupation of open areas and the hunting of large game towards the more intensive utilisation of rock shelters, in small groups and a foraging-based economy" (Barnard, 1992). Unfortunately, indigenous groups who lived on the coast were the first people to be severely impacted by colonial oppression (Boezak, 2017).

4.1.8 COLONIAL DISPOSSESSION

First contact between indigenous pastoralist groups and Europeans occurred during the 15th and 16th centuries when Portuguese mariners would sail down the coast. Before the Dutch East India Company's ('VOC') governance over the southernmost tip of Africa, European merchants, and travellers en route to or from Asia would call in at the natural harbour of Saldanha Bay for refreshment. Encampments were also set up along the coast by survivors of shipwrecks, and in their journals, they would recall how they met and traded with indigenous groups (Smith, 1985; Raven-Hart, 1967). Written records reveal that in 1497, the GuriQua and the San (SonQua) witnessed the arrival and departure of Vasco da Gama in St Helena Bay (Raven-Hart, 1967; Axelson, 1998). Although the Saldanha Bay harbour was more sheltered than Table Bay and

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allowed for the crews to trade livestock from the Khoikhoi in the area (Raven-Hart, 1967; Smith, 1985), there was not enough fresh water available to allow for the establishment of large permanent settlements.

It was only in 1652 that the VOC decided to occupy the Cape and establish the first permanent European settlement in South Africa. The VOC established a station at Table Bay to supply Company fleets travelling between Europe and the Indies with refreshments (i.e., meat, wheat, vegetables, and freshwater) (Ward, 2009). When the Dutch colonists arrived, they encountered several Khoikhoi groups. The largest concentration of Khoikhoi lived in the lush pasture lands of the south-western Cape region.

Initially, the relationship between the Dutch and the Khoikhoi was one of cooperation, and the VOC established trading agreements with local chiefs to get regular supplies of fresh meat (Elphick, 1977). As the colony grew, the VOC decided to decrease their dependency on local trade with the Khoikhoi. Their alternative plan was to give land to free burghers to supply meat and grain to the Company.

Khoikhoi and San lives were impacted upon by both internal strife and direct conflict with the Europeans over the disregard of traditional customs, the privatisation of land, and exhausting indigenous resources (i.e., overfishing and farming). As the Dutch took over more of the Khoikhoi's grazing land for farms, much of the Khoikhoi and San peoples' traditional lands were dispossessed (Elphick, 1977; Bredekamp, 1986; Elphick and Malherbe 1989; SAHistory, 2012). In 1657, the Goringhaiqua tribe were ordered to move to the east of the Liesbeeck boundary and this 'eviction' event would be instrumental for the first war against colonial intrusion (Bredekamp and Newton-King, 1984). The First Khoikhoi-Dutch War lasted the whole of 1659 (Elphick, 1977).

According to Sleight (1993: 148), "In 1672, two sons of the weakened Peninsular Khoisan chiefs signed a contract, which they probably did not fully understand, and sold huge tracts of land from Table Bay to Saldanha Bay in the North and to the Hottentots Hollands mountains in the East to the VOC for an incredible low price (which they did not even fully receive)".

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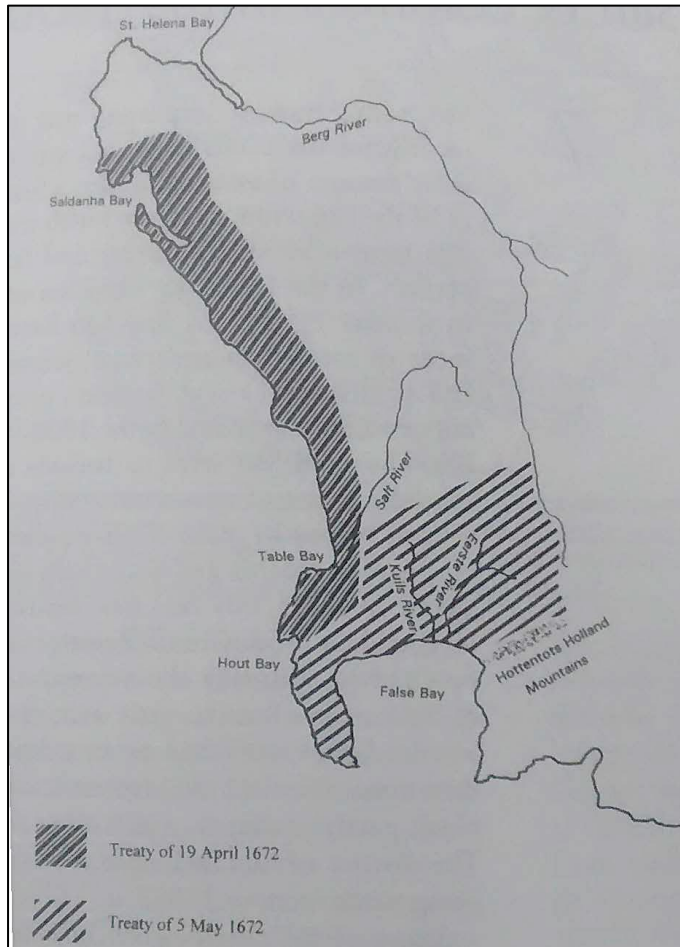


Figure 5– Map illustrating the 1672 land ‘sale’ (Source: Boonzaier et al., 1996: 79).

After a few more instances of territories being ignored and further land appropriation, another war of resistance was initiated by the Cochoqua, and the Second Khoikhoi-Dutch War commenced (1673-1677). This led to more Khoikhoi groups being forced to relocate to areas further up the coast.

According to writings of early settlers, it appears that some San groups, who pursued a hunting and foraging lifestyle, may have still resided in the mountainous regions of the Cape where they were less likely to clash with the Khoi or Dutch settlers (Parkington et al. 1986). Regions that were less desirable for the colonists, such as Namaqualand, became places of refuge for the San and Khoikhoi who were able to continue many aspects of their traditional ways of life in this area for some time (Raper and Boucher, 1988).

In 1713, the small-pox epidemic led to the death of many Khoikhoi people living in the southwestern Cape. The surviving Khoisan became assimilated as domestic/farm workers due to the high demand for labour by the Dutch. In rural areas, the Khoisan were forced into what was referred to as semi-bonded labour (Ward, 2009).

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By the late 18th century, the Cape settler colony's territories *incorporated the Berg (c. 1700), Olifants (1750), and Buffels (1798) rivers.*

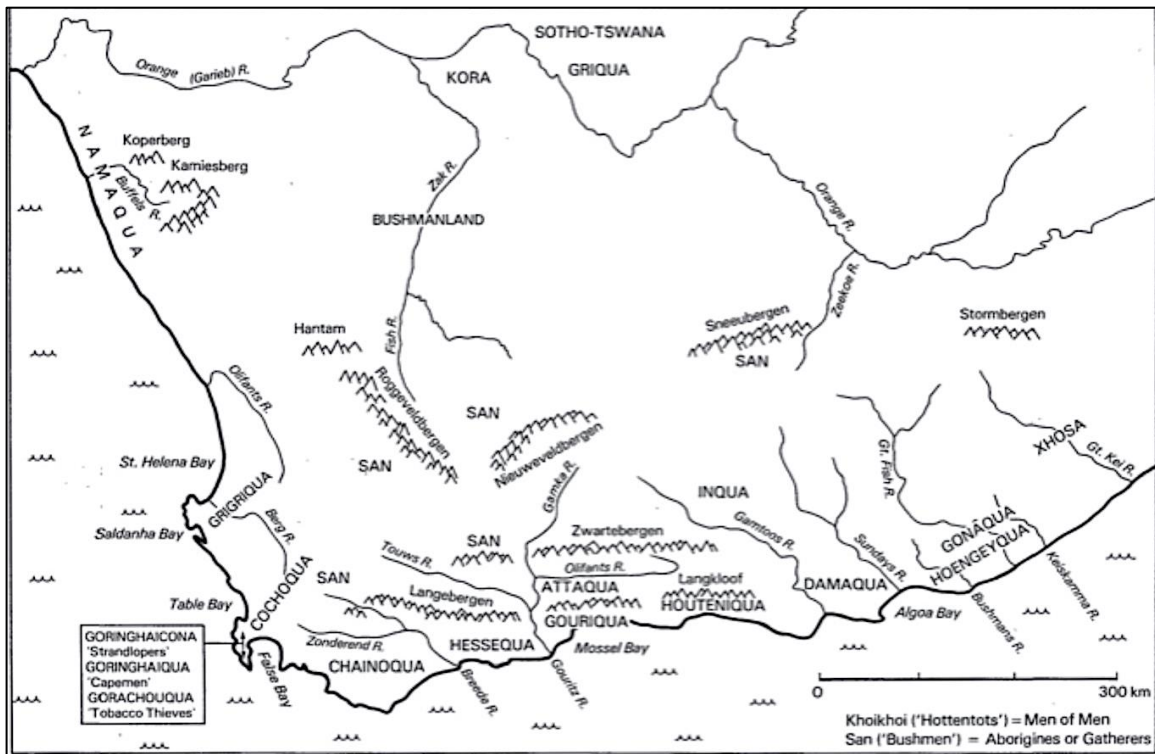


Figure 6 – Map illustrating the Khoikhoi and San groupings in South Africa during the 17th and 18th centuries (Source: Bredekamp and van den Berg, 1986).

4.1.9 THE HISTORY OF FISHING ON THE WEST COAST

4.1.10 17TH CENTURY

During the 17th century, the VOC established an outpost at St Helena Bay (Saldanha Bay Municipality, 2020). From 1670, free burghers started to fish regularly in St Helena Bay (Sleigh, 1993). They introduced methods to the region that were not previously available to indigenous fishermen, such as metal hooks, boats, nets and bulk processing and storage.

4.1.11 18TH CENTURY

During the 18th century, the Cape settler's economy was primarily based on slave labour which was imported from Asia and East Africa. The agricultural sector which was maintained by free burghers (freed from Company service) was not stable and due to the trade of the Khoikhoi's livestock being intermittent, the settlers had to make alternative arrangements for food resources. This led to Robben Island being exploited for seals, penguins, and seabirds (Penn, 1996; Ward, 2009). Large rural landowners established private coastal fishing posts to supply marine resources to the Company; the local region; passing ships and for export (Muller 1942; De Kock 1968). Soon, Dassen Island, Saldanha Bay and St Helena Bay developed as significant centres to supply the

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VOC with additional resources to sustain the growing number of people in the Cape colony, including the substantial number of slaves kept by the Company. According to Sleigh (1993), the slaves were given salted fish, seal meat, penguin, and bird eggs whilst the rest of the colony preferred to consume meat.

According to Marincowitz (1985: 40–46) *“With exclusive land grants closing the north-western frontier, from the 1740s growing numbers of ex-slaves, dispossessed Khoekhoe, failed farmers, evicted tenants and bywoners (tenant farmers), new immigrants and fugitives from colonial and military justice moved onto the beaches of the west coast”*.

Early fishing, sealing and whaling activities, by European and American whalers, around Saldanha Bay, especially near Marcus Island/Outer Bay and at Salamander Point, have been extensively documented in the archival/historical record (Griffiths et al. 2004; David & van Sittert, 2008). Although the inshore whale population declined after 1830, processing continued at Donkergat in Saldanha Bay (Halkett 1998).

4.1.12 19TH CENTURY

By the mid 19th century, scattered subsistence communities had emerged along the West Coast. Before the arrival of industrial fisheries, residents in St Helena Bay employed basic fishing technology (small-scale line fishing, beach seine nets and rowing boats) and fishing activities were informally organized by boat and net owners.

Malay slaves and other residents moved into the region to work as farm labourers. Over time, the unique fishing skills of enslaved Malay people intermingled with the fishing skills of the indigenous people. This led to the establishment of small fishing villages along the West Coast (incl. Saldanha, Langebaan and St Helena Bay).

After the emancipation of slaves, new laws were introduced to control both the freedom of movement and independent livelihoods of people who did not own land. This forced fishermen on the West Coast “to either develop artisanal skills, become wage labourers or squat on coastal government land to eke out a living from small scale production and seasonal work” (Van Sittert 1992: 12-14).

Using business capital in both the local and international markets, entrepreneurs were able to lease Crown land and establish coastal industries along the West Coast (Van Sittert 1992).

By the 1880s, a Cape Town-based trading company, Stephan Brothers, was able to monopolise the West Coast trade. The company bought the main grain shipping points along the West Coast,

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including the southern shore of St Helena Bay, where they established Laaiplek (translates to 'loading place') at the mouth of the Berg River (Van Sittert 2001: 197).

4.1.13 20TH CENTURY

Although the local fishing industry on the West Coast employed a substantial number of locals at the start of the 20th century, the industry is associated with a history of hardship. The industry's collapse in the mid-20th century left numerous West Coast communities impoverished (Van Sittert, 2001). Despite all the obstacles thrown at them, the West Coast fishing communities were resilient and continued their fishing tradition throughout the 20th century.

Historically, small-scale fishers have constantly had to compete against big scale fisheries. For example, Piketberg coastal fisheries used a method of fishing called beach seining to supply inland farmers with cheap ration fish. When there was a decline in snoek sources further south, Italian immigrant fishermen from Cape Town travelled up the West Coast on boats with set nets. Ultimately, their method of fishing impacted the supply of fish for the sedentary fishermen.

By 1900, the Stephan Brothers company were in control of nearly every suitable bay from Saldanha Bay to Lamberts Bay. They also owned numerous farms which were often acquired in exchange for debt. In 1909, the company negotiated an agreement with the State to establish an Exclusive Trek Seine Fishing Zone along the Malmesbury coast (Van Sittert 1992: xxxii). This move meant that the company was able to dominate a new manufacturing industry which further exacerbated resource owners and local fishermen.

During World War One, there was a crayfish canning boom in the Cape. The sourcing of crayfish moved rapidly up the West Coast during this period (Griffiths et al. 2004). By the early 1920s, the overexploitation of crayfish resulted in an exhaustion of crayfish stocks and West Coast factories were forced to close. This meant that the small-scale seine fishermen, and fishermen who netted in the backwaters, were left even more vulnerable to the financial depression of the 1930s.

Then, in 1934, in an act of retaliation, "Saldanha Bay fishermen invaded the Piketberg area on motorboats carrying Italian lampara nets and, with the support of Government, wiped out the non-motorised Berg River inshore fisheries run by consortiums of farmers, fishery owners and canners" (Van Sittert 1992: 211–237).

In 1951, increasing catches along the West Coast, meant that both skippers and fishermen yielded good financial returns. By 1955, South Africa had the largest fishing industry in the southern hemisphere (Griffiths et al. 2004).

With the Apartheid system arriving, the indigenous identity of the Khoisan was further disrupted through the Race Classification Act and the Populations Registration Act. The Khoisan were forcibly categorised as "Coloured" (Boswell and Thornton, 2021). This label further dispossessed the

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people from their heritage. Under the Group Areas Act (1950) the towns of the West Coast were divided into segregated residential and business areas. The forced removals marked yet another era of forced removals from areas that indigenous people occupied. Despite the discrimination, the communities continued their tradition of fishing that had been passed on through the generations of fisher families.

4.1.14 MARITIME HERITAGE RESOURCES

The following section was developed by maritime archaeologist Vanessa Maitland.

The first recorded European voyages down the west coast of Africa were by the Portuguese. When the first Portuguese explorers travelled down the west African coast, they stuck close to the coastline, to map the land. However, occasionally they were swept towards the Americas, as is evident by the fate of the fleet of Pedro Alvares Cabral, in 1500. This was first Portuguese fleet which was to sail annually to the Indies. Twenty days after the fleet left Brazil, which they had “discovered”, it was struck by storms and four ships, including the one under command of Bartolomeu Dias, foundered somewhere in the southern Atlantic. Different researchers put them anywhere between Tristan da Cunha and the Cape.

Bartolomeu Dias and his fleet passed the Orange River Mouth in 1487/1488 (Axelson, 1973). Thereafter, the rate of exploration and trade increased exponentially, as is evidenced by the increase in shipwrecks over the centuries. These early voyages were not well documented, and the archives often merely report that a fleet of a certain number of vessels left and only a certain amount returned, with only vague references to their place and manner of loss. Therefore, there are many undocumented wrecks, along the coastline and even more offshore.

There is some anecdotal evidence that the Phoenicians circumnavigated Africa (Herodotus, 1954). If this is true, these ships had to stick right to the coastline and therefore are likely to be inshore. There’s increasing evidence that the Chinese voyages of the 1400s explored parts, if not all, of the African coast (Paine, 2013). However, once again the archival evidence to date, and availability to Western researchers, limits this knowledge.

There are many ships that are only recorded as having disappeared between Europe and the Far East and Americas. As well as between local ports. The mechanics of sailing vessels and winds meant that for a ship to get from Europe to the Cape, they often sailed via South America. There are also numerous missing U-boats and other war vessels from WW1 and WW2 that may be found.

Thousands of ships have disappeared in the southern Atlantic Ocean, a portion of these can be seen in **Figure 7**. There are numerous historical reports of abandoned vessels being seen by other ships (**Figure 8**).

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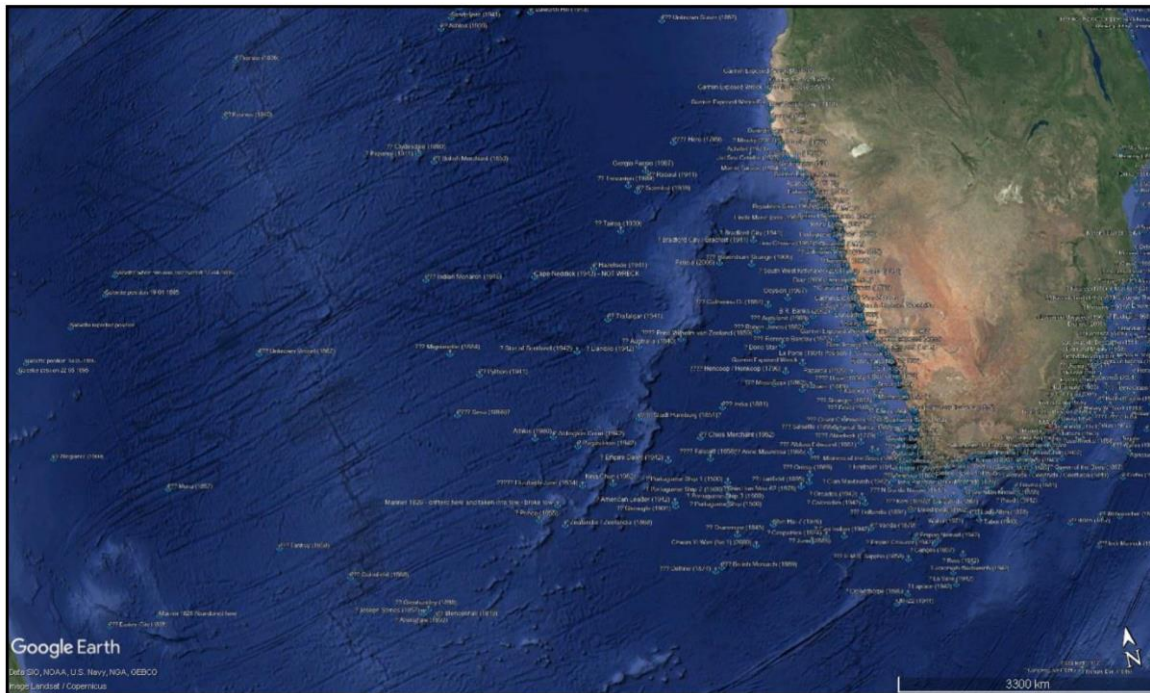


Figure 7 - A portion of the ships wrecked off South Africa and in the southern Atlantic

on the Wednesday resumes her trip North.

Captain Worster, of the ship *Walmate*, which arrived at Port Chalmers from London yesterday, reported that on May 22nd, in latitude 17° 33' S. longitude 33° 40' W., he encountered the hull of the British ship *Salsette* which caught fire when bound from London to Melbourne and was abandoned by the crew on April 18. The vessel was completely burnt out, nothing but the shell being left, with a mass of ashes still burning in the bottom of the hold. As the hull was lying right in the track of vessels, and was a dangerous obstruction, Captain Worster had a rivet knocked out of the bottom, and it was expected that it would sink in a couple of days.

Figure 8 - Report in *The Auckland Star* 26-07-1895, by the *Walmate* on the drifting hulk of the *Salsette*

4.1.15 ARCHIVAL AND HISTORICAL MAPS

Relevant historical maps were studied to identify the tribes that historically occupied the West Coast region. Historical maps for various years (1747 and 1850) were available for utilisation in the background study.

4.1.15.1 MAP OF CAPE OF GOOD HOPE, 1747

(Publisher: Pierre d'Hondt)

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The map depicted in **Figure 9** is titled Kaart van de Kaap de Goede Hoop (“Map of Cape of Good Hope”). The map dates from 1747. The land surveyor/mapmaker was Jacques Nicolas Bellin (Publisher: Pierre d’Hondt).

4.1.15.2 SECTION OF CAPE COLONY, 1812

(David Rumsey Historical Map Collection: Image No. 0028063).

The map depicted in **Figure 10** is titled “Cape Colony”. The full title of the map is “Colony of the Cape of Good Hope. ”. The map dates from 1812. The map was drawn from Mr. Barrow’s survey by A. Arrowsmith and S. Lewis (Publisher: Thomas & Andrews). “Relief shown by hachures”.

4.1.15.3 SECTION OF SOUTH AFRICA (CAPE COLONY), 1832

(David Rumsey Historical Map Collection: Image No. 0247106).

The map depicted in **Figure 11** is titled “South Africa (Cape Colony)”. The map dates from 1832. The authors of the map were W.M. Higgins and D. John (Publisher: W.S. Orr & Co.).

4.1.15.4 CAPE COLONY, 1850

(Publisher: J. & F. Tallis)

The map depicted in **Figure 13** is titled “Cape Colony”. The map dates from 1850. The map was drawn and engraved by John Rapkin, and illustrations were by H. Warren (Publisher: J. & F. Tallis).

4.1.15.5 SECTION OF CAPE PROVINCE, TRANSVAAL, &C. – WESTERN SECTION, 1922

(David Rumsey Historical Map Collection: Image No. 2113082)

The map depicted in **Figure 12** is titled “Cape Province, Transvaal, &c. – western section”. The map dates from 1922. The author of the map was John Bartholomew and Son (Publisher: The Times).

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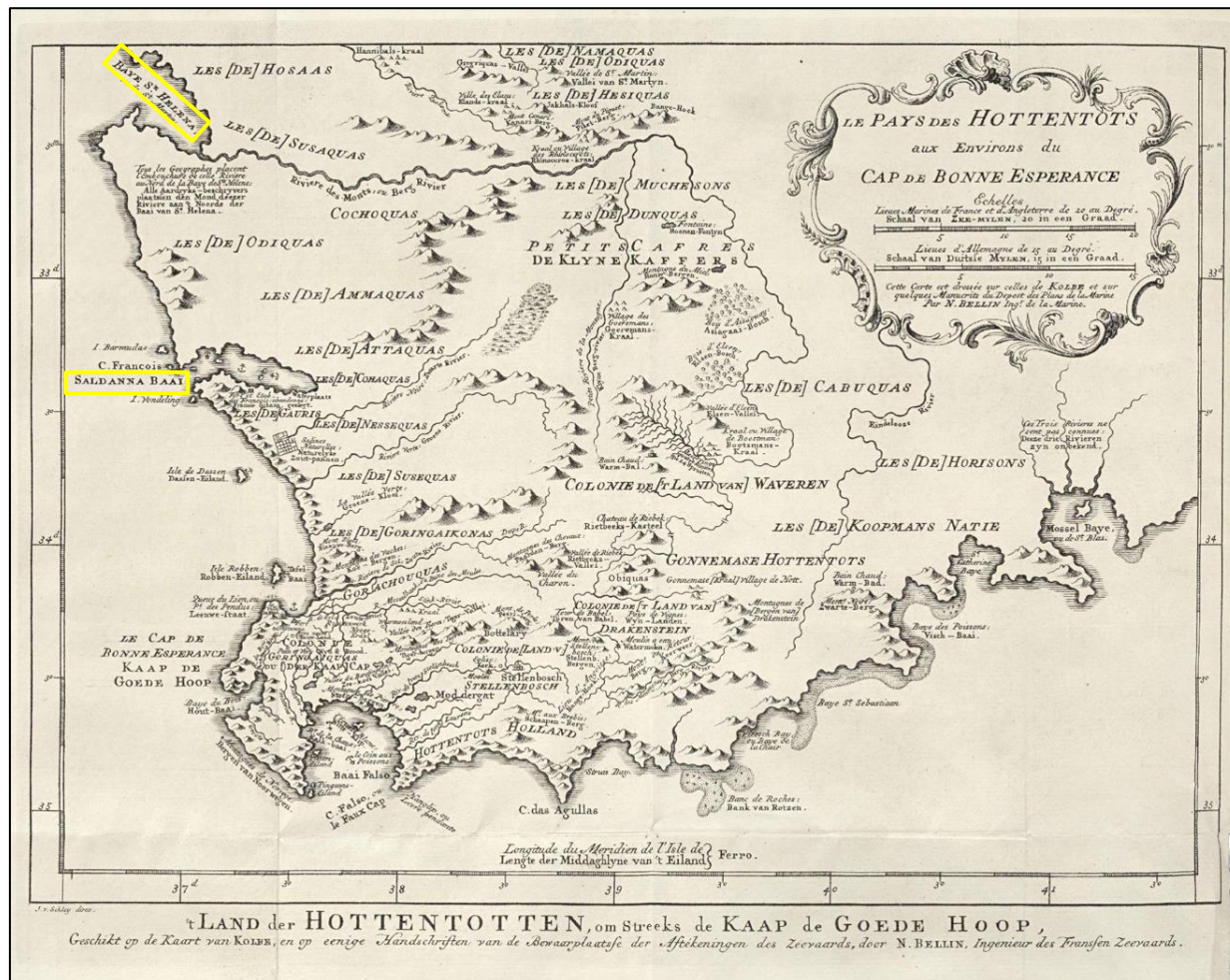


Figure 9– 1747 historical map titled “Map of Cape of Good Hope”⁶ (yellow polygons: West Coast towns).

⁶ Source: https://commons.wikimedia.org/wiki/File:AMH-7958-KB_Map_of_the_Cape_of_Good_Hope.jpg

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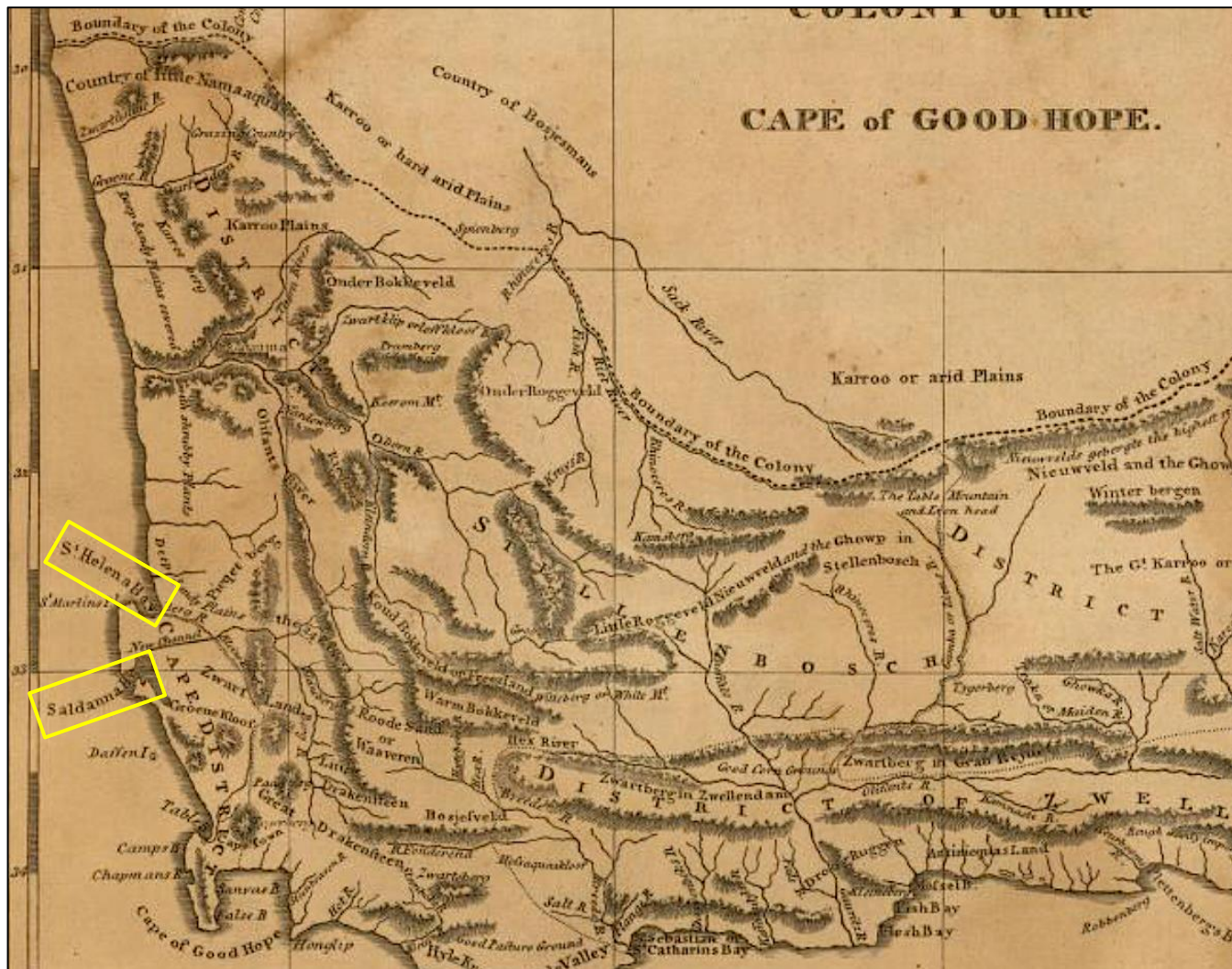


Figure 10 - Section of the 1812 Cape Colony map (yellow polygons: West Coast towns).

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Figure 11 - Section of the 1832 South Africa (Cape Colony) map (yellow polygons: West Coast towns).

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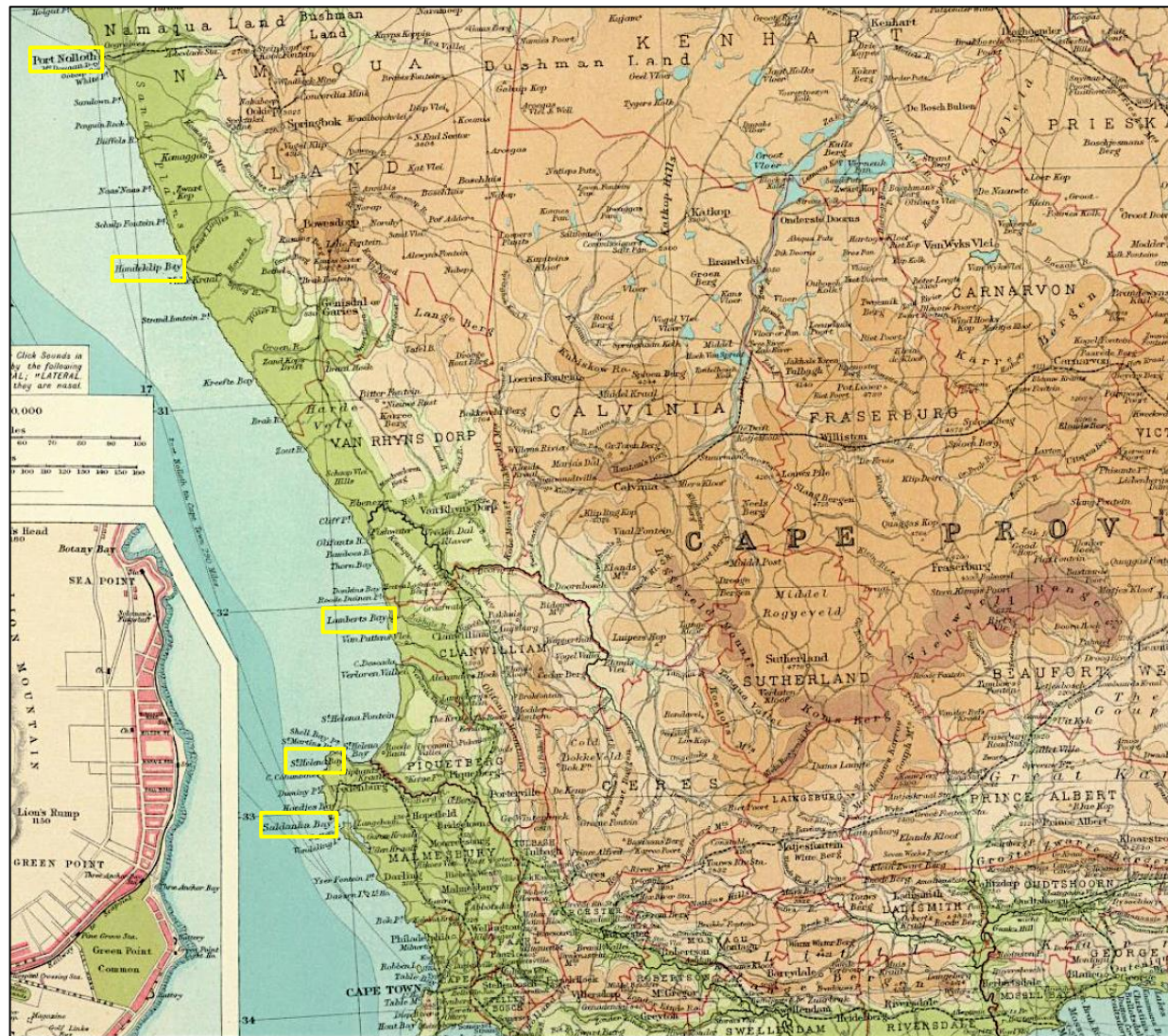


Figure 12 - Section of the Section of Cape Province, Transvaal, &c. – western section, 1922 (yellow polygons: West Coast towns).

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Figure 13 – 1850 historical map titled “Cape Colony”⁷ (yellow polygon: West Coast towns).

⁷ Source: https://commons.wikimedia.org/wiki/File:1850_Tallis_Map_of_the_Cape_Colony.png

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4.2 PREVIOUS HERITAGE IMPACT ASSESSMENT REPORTS FROM THE STUDY AREA AND SURROUNDINGS

A search of the South African Heritage Resources Information System (SAHRIS) database revealed that numerous archaeological and heritage impact assessments had been undertaken within the surroundings of the West Coast. These reports solely focused on tangible heritage and do not fully address the intangible heritage of the West Coast region. Therefore, this report will not reference these impact assessments.

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5 INTANGIBLE HERITAGE

'Intangible heritage' (also referred to as 'Living Heritage') is a term which is used to describe "aesthetic, spiritual, symbolic or other social values people may associate with a site, as well as rituals, music, language, know-how, oral traditions and the cultural spaces in which these 'living heritage' traditions are played out."⁸ Through its efforts to safeguard Intangible heritage UNESCO and its member states developed the Convention for the Safeguarding of the Intangible Cultural Heritage (ICH).⁹

The following section is extracted from a UNESCO webpage that explains the importance of Intangible Heritage:

"While fragile, intangible cultural heritage is an important factor in maintaining cultural diversity in the face of growing globalization. An understanding of the intangible cultural heritage of different communities helps with intercultural dialogue and encourages mutual respect for other ways of life.

The importance of intangible cultural heritage is not the cultural manifestation itself but rather the wealth of knowledge and skills that is transmitted through it from one generation to the next. The social and economic value of this transmission of knowledge is relevant for minority groups and for mainstream social groups within a State, and is as important for developing States as for developed ones.

Intangible heritage is:

- **Traditional, contemporary, and living at the same time:** *intangible cultural heritage does not only represent inherited traditions from the past but also contemporary rural and urban practices in which diverse cultural groups take part.*
- **Inclusive:** *we may share expressions of intangible cultural heritage that are similar to those practised by others. Whether they are from the neighbouring village, from a city on the opposite side of the world, or have been adapted by peoples who have migrated and settled in a different region, they all are intangible cultural heritage: they have been passed from one generation to another, have evolved in response to their environments and they contribute to giving us a sense of identity and continuity, providing a link from our past, through the present, and into our future. Intangible cultural heritage does not give rise to questions of whether or not certain practices are specific to a culture. It contributes to social cohesion, encouraging a sense of identity and responsibility which helps individuals to feel part of one or different communities and to feel part of society at large.*
- **Representative:** *intangible cultural heritage is not merely valued as a cultural good, on a comparative basis, for its exclusivity or its exceptional value. It thrives on its basis in*

⁸ Report from meeting to define Intangible Cultural Heritage, Piedmont (Italy), March 2001 (<https://ich.unesco.org/doc/src/00077-EN.pdf>, accessed 22 July 2022).

⁹ UNESCO. 2003. Convention for the Safeguarding of the Intangible Cultural Heritage

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communities and depends on those whose knowledge of traditions, skills and customs are passed on to the rest of the community, from generation to generation, or to other communities.

- **Community-based:** *intangible cultural heritage can only be heritage when it is recognized as such by the communities, groups or individuals that create, maintain, and transmit it – without their recognition, nobody else can decide for them that a given expression or practice is their heritage.”*

In this assessment, marine-related intangible cultural heritage and people’s connection to the ocean is relevant. This type of heritage incorporates the unique ethos and identity of specific places linked with fishing villages; oral history; popular memory; cultural traditions; indigenous knowledge systems, rituals, beliefs, and practices (e.g., fishing techniques) associated with the ocean.

In some cultures, the ocean is regarded as a spiritual realm filled with healing powers and a means to connect to one’s ancestors. Gabie (2014) explains how water is the Khoisan’s “...’source of life, a sense of belonging and their permanence to nature’. Water is vital for various rituals and cleansing ceremonies.

According to Boswell and Thornton (2021), the Khoisan “advocate for deep connections and complementarity between humans and nature, recognising the agency and ‘direction’ provided by nature to humanity”.

Considering that the ICHC emphasises the declaration and listing of forms of Intangible Heritage, it can lead to a diminished recognition of intangible heritage not listed or formally recognised (Gimblett, 2004). The ICHC requires a State Party to develop an inventory of intangible heritage within their country or territory and then take measures to safeguard community participation (Article 11(a)) (Deacon and Smeets, 20013). As Smith (2015) argues, the European Authorised Heritage Discourse within UNESCO emphasises the declaration and the importance of heritage and things as defined by experts or those entities and nation states promoting their discourse. The ICHC, however, did provide the opportunity for communities on a sub-national level to promote and give legitimacy to their intangible heritage. Unfortunately, the ICHC and its operational standards place the responsibility of assessment, nomination, and listing on the State Parties. This leads to a gatekeeper process in which these Parties can decide and control what is listed and nominated through their national discourse to the detriment of the community or grouping.

The Khoisan has historical experienced marginalisation and stigmatisation since the onset of colonisation in Southern Africa. Section 4 of this report provides a narrative of the general history of the Khoisan on the West Coast and Western Cape, indicating a gradual disbanding of communities and cultural fabric of these indigenous groupings due to colonialism and economic

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influences. The last decade has however shown a renewed interest and growth in claiming their roots and history through the resurgence movement.

Natural Justice (2016) submitted that strides were made in the recognition and legitimising of the Khoisan. However, entrenched continuing historic race classifications and the lack of leadership recognition through such issues as the dragging finalisation of the Traditional and Khoi-San Leadership Bill, before its promulgation in 2019, is robbing these communities of a voice and standing within the larger South African landscape. This speaks to the recognition of their culture that is inclusive of tangible and intangible heritage.

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6 STAKEHOLDER ENGAGEMENT

6.1 INTRODUCTION

Public meetings were conducted by EIMS from 29 August to 3 September 2022 (**Table 4**) to inform Interested and Affected Parties (IAPs) of the proposed project and associated application process and allow them to raise comments/concerns.

Table 4 – Information relating to the public participation meetings

Town	Venue	Date	Time
Hout Bay	Hout Bay Public Library	Monday 29 August 2022	16:00 – 18:00
Cape Town	Life Conference Centre (Three Anchor Bay)	Tuesday 30 August 2022	16:00 – 18:00
Saldanha	Hoedjies Bay Hotel	Wednesday 31 August 2022	16:00 – 18:00
Lamberts Bay	Community Hall	Thursday 1 September 2022	16:00 – 18:00
Hondeklip Bay	Eric Baker Hall	Friday 2 September 2022	16:00 – 18:00
Port Nolloth	Port Nolloth Country Club	Saturday 3 September 2022	10:00 – 12:00

6.1.1 Issues Raised

The Public Participation process did raise some comments on heritage-related issues. Several individuals who attended the public meetings raised concerns about how their heritage will be impacted by the proposed project.

The people regard the ocean as an inseparable part of their identity. “The sea is in our blood” is a common expression community members use. The ocean and its marine resources symbolise an important part of their history and heritage. They have relied on the ocean for survival as their skill sets are catered toward fishing.

6.1.2 Hout Bay

During the public meeting at the Hout Bay Public Library no pertinent mention was made to heritage issues.

6.1.3 Saldanha

6.1.3.1 A MS MOSTERT RAISED THE FOLLOWING CONCERNS:

- Explained their close association with the ocean as small scale fishers and that an impact by the project will impact on their way of life and social cohesion.

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6.1.3.2 **A WEST COAST CHIEF KHAESEN MAART RAISED SEVERAL POINTS:**

- Mr Maart explained that the ocean is a precious and spiritual way of life. They have always lived in harmony with the ocean, and through generations, they have conserved and managed their own interaction with the ocean and its bounty.

6.1.4 **Lambertsbay**

6.1.4.1 **MR NIKOLAAS BOOYSEN**

- Objected that the San communities are still being ignored and not considered to interact with first to obtain free and informed consent.

6.1.5 **Focus Discussions**

During and after the consultation process for the Searcher Seismic application held in July 2022, focused meetings were held with selected representatives and grouping identified during the public engagements. These meetings were conducted by members of PGS. During the meeting, it was indicated that the TGS application will be forthcoming and that PGS will be the heritage consultant for this application as well.

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Table 5 - Summary of discussion with groups

Area	Date	Interlocutors	Association	Themes and issue identified and discussed
Lambertsbaai	18/08/2022	Rosey Shoshola Giovanni Cloete	Small scale fishers	<ul style="list-style-type: none"> ▪ Activities in small-scale fisheries keep youth away from social issues such as substance abuse. ▪ The waning of small-scale fisheries and their economic decline are linked to social issues such as gangsterism, substance abuse, and teenage pregnancies. ▪ Their heritage is closely linked to their life as a fishing community. Their interaction between families and various groupings within the community. ▪ Activities such as bartering, food dishes linked to specific days, and local and community festivals are intrinsically linked to their life as fishers. ▪ If they would not be able to continue their fishing activities will lead to a further decline in their community cohesion and cultural character. ▪ There is a definite link between declining fish yield and industrial impacts ▪ They feel there is already evidence of previous seismic activity's impact at the end of 2021 on snoek catches in this year, 2022.
Lambertsbaai	18/08/2022	Anthony Andrews Nicolaas Booyesen	West Coast Guriqua Council	<ul style="list-style-type: none"> ▪ Focus and emphasis was placed on the need for Free, Prior and Informed Consent (FPIC) required from the Guriqua Council and group as stipulated United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). ▪ They are not heard and engage with. ▪ The interlocutors further stressed their position as representatives and part of the Guriqua as first people of the West Coast ▪ They explained that their way of live is linked with the ocean as well as the land as some of the Guriqua had to move towards ocean subsistence after displacement from farms ▪ They are indelibly linked as to the ocean as economic fishers but due to the historic and current economic climate needs to make ends meet with other activities.
Saldanha	19/08/2022	Kevin Maart Magdalena Vertyb Magrieta Petro	Aikonese Cochoqua Khoi Tribal Council	<ul style="list-style-type: none"> ▪ Mr Maart explained the regional extent of the Cochoqua and linkages with the various sub-clans ▪ The historic impact on the decline of fisheries on the community and way of live was discussed ▪ The fear of the impact on the ocean and fish stock by current seismic projects was expressed ▪ They further expanded on the potential impact of the project on their social discourse and how it will further erode their social and cultural way of live.
Houtbaai	20/08/2022	Bradley van Sitters	≠Girokamllaes	<ul style="list-style-type: none"> ▪ The discussion with the interlocutors started off with Mr van Sitters giving a short background of the cultural and economic position of their group in Houtbaai.

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		<p>Basil van der Boss Chief Regan James Natahsa James Elston Gillian</p>	<p>Katz Korana Royal House</p>	<ul style="list-style-type: none"> ▪ It was explained that their people and Korana/Kora House are historically linked to the Cape and West Coast area and the various tribal and cultural groupings can be linked to the original tribes found at the start of colonial power visiting the Cape region and see them as one of the first nations of South Africa ▪ Mr van Sitter explained that they as tribal grouping has a very close spiritual and cultural relation with the ocean and seashores. He further explained that they are reclaiming this historical and ancient linkage. ▪ Although Government is slow in recognising the first people formally, however historically the proof of their existence is there. ▪ They as first and indigenous people have a responsibility as custodians of the environment to speak out against development and activities that will impact on the environment. ▪ They further expanded that their main concerns are the economic impact due to the seismic projects that will just compound the historic economic decline experience by their community. ▪ Chief James explained that they have already seen the impact of seismic activities on fishing stock. ▪ They have also not previously been engaged by government on such projects. They further feel the Government has already sold out on communities where resources are found with no real positive impact back to the communities. ▪ Social decline and cultural loss due to economic decline in the last twenty years will be indicative of the next twenty years.
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7 HERITAGE STATEMENT

One of the main issues raised by the communities interacted with during the Public Meetings is the lack of consultation within the communities to hear their concerns. This interaction needs to be at a level that is understood by the local community. This is further strengthened by the indigenous groupings emphasising the need for FPIC. One of the main tasks of this report is to address this lack of consultation through interacting with key groups and individuals and recognising their concerns.

It must be noted that, first and foremost, a large section of the affected communities not only view them as small-scale fishers but also as indigenous people and, as such, are intrinsically linked to the ocean and the land they have lived on centuries. The resurgence movement through which Khoi and San descendants are reclaiming their identity has in recent decades afforded these communities the ability to re-establish their cultural roots and grounding in an ancient landscape. This sentiment is echoed in the founding affidavit submitted (5 Feb 2022) during the appeal submitted to the first Searcher application by CJ Adams. It notes that the ocean is not only important for fishing but also has spiritual meaning and is a place of healing and holds healing powers for the indigenous communities. It further expanded that the ocean and its resources play an important part in their community's history and heritage.

Community identity and culture are thus strongly linked to the ocean and what it can provide, physically and spiritually. Communities have coexisted with the ocean for generations. This existence has created a culture and heritage that defines their way of living, community, and kinship unique to the West Coast of South Africa. Cook (2001) describes this as maritimity, a process whereby the sum of cultural adaptations made by coastal populations becomes imbued with meaning and culture. This is evident in community structures, cultural events, and seasonal activities. Their culture and heritage historically had a physical manifestation in village layouts, boat building and the unique west coast architectural vernacular. This vernacular was appropriated by the rich to develop quasi-cultural village expressions in the modern expansions of West Coast towns such as Paternoster.

This uptake of the cultural heritage manifestations or elements of the indigenous communities by the public at large, provides a manner of legitimacy to their culture that is deeply entwined with the ocean and coastal landscape. It, unfortunately, does not translate into economic providence and brings no relief to their plight as subsistence communities. The changes in the fishing economies around the South African coast in the past four decades have resulted in a loss in income and livelihoods. It has inevitably impacted their community structures and activities which are a large part of their cultural heritage.

The public meetings and focused discussions with interlocutors have shown that these communities and groupings are struggling economically due to decades of turmoil in the fishing

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industry. An industry plagued by the closing of fish processing plants, fishing licence and quota issues, and diminishing catches due to environmental and industrial impacts, to name a few. This economic downturn led to social issues within the communities. Foremost are poverty, loss of social fabric, substance abuse, teenage pregnancies, and violence. In all the interviews, the above issues were raised as central to their social existence and community experience.

Considering the Article 8(j) and 10(c) Convention on Biological Diversity (29 December 1993), of which South Africa has been a signatory since 1995, the need to “...*respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices*” must be considered within the available South African legislation. As such, the NHRA (section 3) (2)) considers heritage resources that are part of the national estate to include:

- “places to which oral traditions are attached or which are associated with living heritage:
- Or as per subsection 3, has cultural significance or other special values because of –
 - a) its importance in the community or pattern of South Africa’s history;
 - b) its possession of uncommon, rare or endangered aspects of South Africa’s natural or cultural heritage;
 - c) its potential to yield information that will contribute to an understanding of South Africa’s natural or cultural heritage;
 - d) its importance in demonstrating the principal characteristics of a particular class of South Africa’s natural or cultural places or objects;
 - e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
 - f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
 - g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
 - h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;

As with Smith (2015), Loulanksi (2006), and Ndoro (2105) emphasised that culture is more than just the tangible but is also shared beliefs, values, language, traditions, functionality, meaning and community connections. Considering the various values and heritage significance as listed in section 3(3) of the NHRA, the cultural and living heritage associated with the communities and indigenous people along the southwestern and west coast of South Africa holds heritage significance. It is part of the national estate and holds importance as a way of life for small-scale fishers and Khoisan descendants alike. The physical and spiritual interaction with the ocean and

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the shorelines through millennia resulted in a maritimity that developed into the cultural fabric as they experience it today.

The significance of such intangible and living cultural heritage features can potentially have a combined heritage grading of Grade II or even Grade I through further research. However, grading inevitably implies the investigation into and consideration of a Provincial or Heritage declaration of significance for a largely intangible cultural heritage. This is problematic as the NHRA provides for the proclamation/declaration of place, objects, or structures as Provincial or National Heritage Sites and only refers to intangible/living heritage relating to such place, objects, or structures.

8 IMPACT STATEMENT

The impact assessment rating is based on the rating scale in **Appendix B**

The cultural heritage and living heritage related to the communities linked to fisheries and ocean subsistence and further identifying as indigenous communities can potentially be impacted by the proposed project. This impact is indirect and is in the community perceived to be primarily linked to their economic existence as a result in the loss of fishing yield. Investigation and discussion have shown that the historic economic decline of fisheries has resulted in the loss of social cohesion, activities, and traditions.

To deliberate the potential impact, we evaluated the Commercial and Small-scale Fisheries report completed by Capricorn Marine Environmental (2022) for the Searcher application as well as the Biodiversity and Ecosystem Services Assessment report (2022) completed for this application completed by Pisces Environmental Services (Pty) Ltd.

The Capricorn report summarises that *“With the implementation of the project controls and mitigation measures, the residual impact due to seismic noise is considered to be of LOW negative significance for the large pelagic longline sector. Due to the remote location of the proposed survey area, noise would be expected to attenuate to below threshold levels before reaching fishing grounds of all other sectors viz. the demersal trawl, midwater trawl, demersal longline, tuna pole-line, small pelagic purse-seine, traditional linefish, west coast rock lobster and small-scale fisheries sectors.”*

The Pisces (2002) survey notes, *“The proposed exploration activities to be undertaken by TGS are expected to result in impacts on marine invertebrate fauna in the Orange Basin, ranging from negligible to very low significance. Only in the case of potential impacts to turtles and marine mammals are impacts of low significance expected.”*

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The scientific studies conducted for this project thus identified impacts on fishing stock as low for all types species.

By inference, a potential impact on fishing yield could be expected and thus potential economic impact on communities due to reduced caught fish volumes.

We considered that the recommended mitigation measures, as listed in the specialist reports for the project, focus on the reduction of impacts on fish species and the projected reduction of the impact on the commercial and small-scale fishery catch yield. These mitigation measures should then indirectly positively impact the potential negative impacts on the cultural heritage of the communities to be impacted.

By using the impact assessment methodology as provided by EIMS, we can project a pre-mitigation negative impact on a regional scale over the long term with a moderate intensity due to the potential indirect impact on the communities and, ultimately, their heritage, with a high probability of this impact occurring. The pre-mitigation impact on heritage resources is rated as MEDIUM. The potential residual impact on heritage resources, with mitigation measures from the scientific studies is projected as LOW with a medium confidence factor.

8.1 CUMULATIVE IMPACTS

This section evaluates the possible cumulative impacts (IC) on heritage resources concerning the current application and other proposed applications that are ongoing in the Orange Basin.

The following must be considered in the analysis of the cumulative effect of development on heritage resources:

- **Fixed datum or dataset:** There is no comprehensive heritage data set for the Offshore and onshore impact region and thus we cannot quantify how much of a specific cultural heritage element is present in the region. The region has never been covered by a heritage resources study that can account for all heritage resources. Further to this, none of the heritage studies conducted can with certainty state that all heritage resources within the study area has been identified and evaluated;
- **Defined thresholds:** The value judgement on the significance of a heritage site will vary from individual to individual and between interest groups. Thus, implicating that heritage resources' significance can and does change over time. And so, will the tipping threshold for impacts on a certain type of heritage resource;
- **Threshold crossing:** In the absence of a comprehensive dataset or heritage inventory of the entire region we will never be able to quantify or set a threshold to determine at what

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stage the impact from developments on heritage resources has reached or is reaching the danger level or excludes the new development on this basis. (Godwin, 2011)

PGS is, however, aware of the current Searcher application and the potential of another application soon occurring in the Orange Basin. Communities have expressed a definite concern about the multiple application occurring in their fishing waters and the potential long-term effect of these surveys resulting in Oil and Gas companies starting applications for production rights based on the findings of these reconnaissance surveys. *It is, however, the understanding that only one 3D survey will be done in the overlapping areas even if the various applications are successful over the same area.*

The scientific studies conducted for seismic projects in the same are make the following comments relating to cumulative impacts:

- **Capricorn Marine – Commercial and Small-Scale Fisheries report (2022)**

Concurrent activities such as other planned speculative or proprietary seismic surveys in the Orange Basin could add to the cumulative impact on fisheries, especially if the activities are concurrent. The cumulative impact on any one fishery is expected to be of VERY LOW to LOW significance. Once completed there is not expected to be any residual impact. This would thus further mitigate any cumulative impact across fishery sectors. The potential that cumulative impacts of other hydrocarbon exploration activities on the fishing industry arise is considered to be possible to likely.

- **Pices Environmental Services – Biodiversity and Ecosystem Services Assessment for the Searcher and TGS applications (2022)**

While it is foreseeable that further exploration and future production activities could arise if the current Environmental Clearance Certificate is granted, there is not currently sufficient information available to make reasonable assertions as to nature of such future activities. This is primarily due to the current lack of relevant geological information, which the proposed exploration process aims to address. While there are many other rights holders in the South African offshore environment, most of these are not undertaking any exploration activities at present or would be concurrently with the proposed 3D survey, particularly not in the far offshore environment. Thus, the possible range of the future prospecting, mining, exploration, and production activities that could arise will vary significantly in scope, location, extent, and duration depending on whether a resource(s) is discovered, its size, properties, and location, etc. As these cannot at this stage be reasonably defined, it is not possible to undertake a reliable assessment of the potential cumulative environmental impacts. It is also possible that the proposed, or future, exploration fails to identify an economic petroleum resource, in which case the potential impacts associated with the production phase would not be realised.

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The report further notes that...*"Similarly, potential cumulative impacts on individuals and populations as a result of other seismic surveys undertaken either previously, concurrently or subsequently are difficult to assess."*

- **Pices Environmental Services – Biodiversity and Ecosystem Services Assessment for the TGS applications (2022)**

While it is foreseeable that further exploration and future production activities could arise if the current Environmental Authorisation is granted, there is not currently sufficient information available to make reasonable assertions as to nature of such future activities. This is primarily due to the current lack of relevant geological information, which the proposed exploration process aims to address. There are many other rights holders in the South African and adjacent Namibian offshore environment, but most of these are not undertaking any exploration activities at present or would be concurrently with the proposed 3D survey, particularly not in the far offshore environment. Thus, the possible range of the future prospecting, mining, exploration and production activities that could arise will vary significantly in scope, location, extent, and duration depending on whether a resource(s) is discovered, its size, properties and location, etc. As these cannot at this stage be reasonably defined, it is not possible to undertake a reliable assessment of the potential cumulative environmental impacts. It is also possible that the proposed, or future, exploration fails to identify an economic petroleum resource, in which case the potential impacts associated with the production phase would not be realised...

...Other than this project, there are currently three other applications for 3D surveying being prepared over much the same area of the Deep Water Orange Basin. Should these all be approved, it is, however, highly unlikely that the operators will undertake these surveys either concurrently or sequentially. This again emphasises that the number of applications submitted to PASA cannot be assumed to relate to a realistic assessment of cumulative impacts.

At this stage, cumulative impacts are purely speculative. Still, the potential for the future increase in cumulative impacts due to current and future seismic surveys and the potential for future Oil and Gas production cannot be excluded but is not quantifiable at this stage for cultural heritage.

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Table 6 - Impact table

IMPACT DESCRIPTION		Pre-Mitigation							Post Mitigation								Priority Factor Criteria			
Impact	Phase	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Pre-mitigation ER	Nature	Extent	Duration	Magnitude	Reversibility	Probability	Post-mitigation ER	Confidence	Cumulative Impact	Irreplaceable loss	Priority Factor	Final score
Impact on cultural heritage	Operation	-1	4	4	3	3	4	-14	-1	4	3	1	3	3	-8.25	Medium	1	1	1,13	-8.25

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9 CONCLUSIONS AND RECOMMENDATIONS

The background research and initial public participation in the available consultation days given to PGS have shown that the affected communities are largely linked to subsistence and small-scale fisheries along the west coast of the Western and Northern Cape Provinces of South Africa.

These communities have expressed their concerns about the effect that the proposed 3D reconnaissance project will have on the fishing stock that will ultimately impact their livelihoods. It is also evident that they do not place much faith in the findings of the scientific fishing stock studies for this and other similar projects.

9.1 HERITAGE STATEMENT SUMMARY

It must be noted that, first and foremost, a large section of the affected communities not only view them as small-scale fishers but also as indigenous people and, as such, are intrinsically linked to the ocean and the land they have lived on centuries. The resurgence movement through which Khoi and San descendants are reclaiming their identity has in recent decades afforded these communities the ability to re-establish their cultural roots and grounding in an ancient landscape. This sentiment is echoed in the founding affidavit submitted (5 Feb 2022) during the appeal submitted to the first Searcher application by CJ Adams. It notes that the ocean is not only important for fishing but also has spiritual meaning and is a place of healing and holds healing powers for the indigenous communities. It further expanded that the ocean and its resources play an important part in their community's history and heritage.

Community identity and culture are thus strongly linked to the ocean and what it can provide, physically and spiritually. Communities have coexisted with the ocean for generations. This existence has created a culture and heritage that defines their way of living, community, and kinship unique to the West Coast of South Africa. Cook (2001) describes this as maritimity, a process whereby the sum of cultural adaptations made by coastal populations becomes imbued with meaning and culture. This is evident in community structures, cultural events, and seasonal activities.

The public meetings and focused discussions with interlocutors have shown that these communities and groupings are struggling economically due to decades of turmoil in the fishing industry. An industry plagued by the closing of fish processing plants, fishing licence and quota issues, and diminishing catches due to environmental and industrial impacts, to name a few. This economic downturn led to social issues within the communities. Foremost are poverty, loss of social fabric, substance abuse, teenage pregnancies, and violence. In all the interviews, the above issues were raised as central to their social existence and community experience.

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As with Smith (2015), Loulanksi (2006), and Ndoro (2105) emphasised that culture is more than just the tangible but is also shared beliefs, values, language, traditions, functionality, meaning and community connections. Considering the various values and heritage significance as listed in section 3(3) of the NHRA, the cultural and living heritage associated with the communities and indigenous people along the southwestern and west coast of South Africa holds heritage significance. It is part of the national estate and holds importance as a way of life for small-scale fishers and Khoisan descendants alike. The physical and spiritual interaction with the ocean and the shorelines through millennia resulted in a maritimity that developed into the cultural fabric as they experience it today.

The significance of such intangible and living cultural heritage features can potentially have a combined heritage grading of Grade II or even Grade I through further research. However, grading inevitably implies the investigation into and consideration of a Provincial or Heritage declaration of significance for a largely intangible cultural heritage. This is problematic as the NHRA provides for the proclamation/declaration of place, objects, or structures as Provincial or National Heritage Sites and only refers to intangible/living heritage relating to such place, objects, or structures.

9.2 IMPACT STATEMENT SUMMARY

The scientific studies conducted for this project identified impacts on fishing stock as low for all species.

By inference, a potential impact on fishing yield could be expected and thus potential economic impact on communities due to reduced caught fish volumes.

We considered that the recommended mitigation measures, as listed in the specialist reports for the project, focus on the reduction of impacts on fish species and the projected reduction of the impact on the commercial and small-scale fishery catch yield. These mitigation measures should then indirectly positively impact the potential negative impacts on the cultural heritage of the communities to be impacted.

By using the impact assessment methodology as provided by EIMS, we can project a pre-mitigation negative impact on a regional scale over the long term with a moderate intensity due to the potential indirect impact on the communities and, ultimately, their heritage, with a high probability of this impact occurring. The pre-mitigation impact on heritage resources is rated as MEDIUM. The potential residual impact on heritage resources, with mitigation measures from the scientific studies, is projected as LOW with a medium confidence factor.

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aware of the current Searcher application and the potential of another application soon occurring in the Orange Basin. Communities have expressed a definite concern about the multiple application occurring in their fishing waters and the potential long-term effect of these surveys resulting in Oil and Gas companies starting applications for production rights based on the findings of these reconnaissance surveys. It is, however, the understanding that only one 3D survey will be done in the overlapping areas even if the various applications are successful over the same area.

At this stage, cumulative impacts are purely speculative. Still, the potential for the future increase in cumulative impacts due to current and future seismic surveys and the potential for future Oil and Gas production cannot be excluded but is not quantifiable at this stage for cultural heritage.

9.3 RECOMMENDATIONS

The following recommendations are based on the UNESCO ICH guidelines. They are aimed at safeguarding the cultural heritage of the small-scale fishers and cultural groupings in the influence of this project:

- Re-assess post-project the potential effects on the identified communities and their intangible cultural heritage. This will require consideration of the socio-economic baseline developed during this environmental impact process against quantified economic damage and losses and human development impacts in a follow-up socio-economic. It will enable the heritage specialist to evaluate the link between the socio-economic changes induced by the proposed project as it relates to changes in the intangible cultural heritage practices of the communities.
- Based on the outcomes, **provide resources and support for communities** to develop and undertake safeguarding measures or plans to enhance the **mitigation capacity of their intangible cultural heritage** by **fostering dialogue, mutual understanding and reconciliation** between and within communities.
- It is anticipated that this can be achieved through the implementation of the mitigation measures in the Social Impact Assessment.

We know that 3D seismic surveys can locate wrecks on the surface, and sometimes below sediments. Any shipwrecks or pieces thereof noted during the survey must be shared with the SAHRA MUCH Unit for inclusion into the national database. These could then be identified and be incorporated into the EMP.

Considering the assessment based on the findings of the fieldwork as well as the scientific studies relating to the impact on fisheries, I am of the opinion that the impact of the proposed project on

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the intangible cultural heritage resources and practices can be mitigated through the implementation of the recommendations in this report.

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APPENDIX A

ENVIRONMENTAL IMPACT METHODOLOGY

The impact significance rating methodology, as provided by EIMS, is guided by the requirements of the NEMA EIA Regulations 2014 (as amended). The broad approach to the significance rating methodology is to determine the environmental risk (ER) by considering the consequence (C) of each impact (comprising Nature, Extent, Duration, Magnitude, and Reversibility) and relate this to the probability/ likelihood (P) of the impact occurring. This determines the environmental risk. In addition, other factors, including cumulative impacts and potential for irreplaceable loss of resources, are used to determine a prioritisation factor (PF) which is applied to the ER to determine the overall significance (S). The impact assessment will be applied to all identified alternatives. Where possible, mitigation measures will be recommended for the impacts identified.

10.4 DETERMINATION OF ENVIRONMENTAL RISK

The significance (S) of an impact is determined by applying a prioritisation factor (PF) to the environmental risk (ER). The environmental risk is dependent on the consequence (C) of the impact and the probability (P) of the impact occurring. The consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M), and reversibility (R) applicable to the specific impact.

To this methodology, the consequence of the impact is represented by:

$$C = (E+D+M+R) \times N$$

4

Each individual aspect in the determination of the consequence is represented by a rating scale as defined in **Table 7** below.

Table 7 - Criteria for Determining Impact Consequence

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site)
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years),
	3	Medium term (6-15 years),
	4	Long term (the impact will cease after the operational life span of the project),

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Aspect	Score	Definition
	5	Permanent (no mitigation measure of natural process will reduce the impact after construction).
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease).
Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.
	5	Irreversible Impact

Once the C has been determined, the ER is determined in accordance with the standard risk assessment relationship by multiplying the C and the P. Probability is rated/ scored as per Table 8.

Table 8 - Probability Scoring

Probability	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur)

The result is a qualitative representation of relative ER associated with the impact. ER is therefore calculated as follows:

$$ER = C \times P$$

Table 9 - Determination of Environmental Risk

Consequence	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
	0	1	2	3	4	5
	Probability					

The outcome of the environmental risk assessment will result in a range of scores, ranging from 1 through to 25. These ER scores are then grouped into respective classes as described in **Table 10**.

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Table 10 - Significance Classes

Environmental Risk Score	
Value	Description
< 9	Low (i.e., where this impact is unlikely to be a significant environmental risk).
≥9 - <17	Medium (i.e., where the impact could have a significant environmental risk),
≥17	High (i.e., where the impact will have a significant environmental risk).

The impact ER will be determined for each impact without relevant management and mitigation measures (pre-mitigation), as well as post-implementation of relevant management and mitigation measures (post-mitigation). This allows for a prediction in the degree to which the impact can be managed/mitigated.

10.5 IMPACT PRIORITISATION

Further to the assessment criteria presented in the section above, it is necessary to assess each potentially significant impact in terms of:

1. Cumulative impacts; and
2. The degree to which the impact may cause irreplaceable loss of resources.

To ensure that these factors are considered, an impact prioritisation factor (PF) will be applied to each impact ER (post-mitigation). This prioritisation factor does not aim to detract from the risk ratings but rather to focus the attention of the decision-making authority on the higher priority/significance issues and impacts. The PF will be applied to the ER score based on the assumption that relevant suggested management/mitigation impacts are implemented.

Table 11 - Criteria for Determining Prioritisation

Cumulative Impact (CI)	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/ definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable Loss of Resources (LR)	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.

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	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).
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The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criteria represented in Table 12. The impact priority is therefore determined as follows:

$$\text{Priority} = \text{CI} + \text{LR}$$

The result is a priority score which ranges from 3 to 9 and a consequent PF ranging from 1 to 2 (Refer to **Table 12**).

Table 12 - Determination of Prioritisation Factor

Priority	Ranking	Prioritisation Factor
2	Low	1
3	Medium	1.125
4	Medium	1.25
5	Medium	1.375
6	High	1.5

To determine the final impact significance, the PF is multiplied by the ER of the post-mitigation scoring. The ultimate aim of the PF is an attempt to increase the post-mitigation environmental risk rating by a full ranking class if all the priority attributes are high (i.e., if an impact comes out with a medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a high significance).

Table 13 - Final Environmental Significance Rating

Environmental Significance Rating	
Value	Description
< -17	High negative (i.e., where the impact must have an influence on the decision process to develop in the area).
≥ -17 ≤ -9	Medium negative (i.e., where the impact could influence the decision to develop in the area).
> -9, <0	Low negative (i.e., where this impact would not have a direct influence on the decision to develop in the area).
0	No impact
<0, <9	Low positive (i.e., where this impact would not have a direct influence on the decision to develop in the area).
≥ 9 ≤ 17	Medium positive (i.e., where the impact could influence the decision to develop in the area).
≥ 17	High positive (i.e., where the impact must have an influence on the decision process to develop in the area).

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The significance ratings and additional considerations applied to each impact will be used to provide a quantitative comparative assessment of the alternatives being considered. In addition, professional expertise and opinion of the specialists and the environmental consultants will be applied to provide a qualitative comparison of the alternatives under consideration. This process will identify the best alternative for the proposed project.

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APPENDIX B
PGS TEAM CVS

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WOUTER FOURIE

Professional Heritage Specialist and Professional Archaeologist and Director PGS Heritage

Summary of Experience

Specialised expertise in Archaeological Mitigation and excavations, Cultural Resource Management and Heritage Impact Assessment Management, Archaeology, Anthropology, Applicable survey methods, Fieldwork and project management, Geographic Information Systems, including *inter alia* -

Involvement in various grave relocation projects (some of which relocated up to 1000 graves) and grave “rescue” excavations in the various provinces of South Africa

Involvement with various Heritage Impact Assessments, within South Africa, including -

- Archaeological Walkdowns for various projects
- Phase 2 Heritage Impact Assessments and EMPs for various projects
- Heritage Impact Assessments for various projects
 - Iron Age Mitigation Work for various projects, including archaeological excavations and monitoring
 - Involvement with various Heritage Impact Assessments, outside South Africa, including -
- Archaeological Studies in Democratic Republic of Congo
- Heritage Impact Assessments in Mozambique, Botswana, and DRC
- Grave Relocation project in DRC

Key Qualifications

BA [Hons] (Cum laude) - Archaeology and Geography - 1997

BA - Archaeology, Geography and Anthropology - 1996

Professional Archaeologist - Association of Southern African Professional Archaeologists (ASAPA)
- Professional Member

Accredited Professional Heritage Specialist – Association of Professional Heritage Practitioners (APHP)

CRM Accreditation (ASAPA) -

- Principal Investigator - Grave Relocations
- Field Director – Iron Age
- Field Supervisor – Colonial Period and Stone Age
- Accredited with Amafa KZN

Key Work Experience

2003- current - Director – Professional Grave Solutions (Pty) Ltd

2007 – 2008 - Project Manager – Matakoma-ARM, Heritage Contracts Unit, University of the Witwatersrand

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2005-2007 - Director – Matakoma Heritage Consultants (Pty) Ltd

2000-2004 - CEO– Matakoma Consultants

1998-2000 - Environmental Coordinator – Randfontein Estates Limited. Randfontein, Gauteng

1997-1998 - Environmental Officer – Department of Minerals and Energy. Johannesburg, Gauteng

Worked on various heritage projects in the SADC region including, Botswana, Mauritius, Malawi, Zambia, Mozambique, and the Democratic Republic of the Congo

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PROFESSIONAL CURRICULUM VITAE FOR NIKKI MANN

Key Qualifications:

MSc Archaeology (phytolith analysis) - University of Cape Town - 2017

BSc Honours Archaeology - University of Cape Town – 2014

Bachelor of Science (BSc) - University of Cape Town - Majors in Archaeology, and Environmental and Geographical Science -2013

Professional Archaeologist – Association of Southern African Professional Archaeologists (**ASAPA**)

Archaeological Experience

- 2021- Current – Archaeologist – PGS Heritage (Pty) Ltd
- Kathu Tyre Management Plant HIA. Kathu. EXM. Position: Heritage Specialist.
- Kathu Borrow Pit Screening. Kathu. EXM. Position: Heritage Specialist.
- Harmony Kareerand Pipelines Project. Between Klerkdorp and Potchefstroom, North West Province. EIMS. Position: Heritage Specialist
- Black Mountain PV. Northern Cape. Uvuna. Position: Heritage Specialist
- Proposed amendment of existing mining activities for Kolomela Mine. South-west of Postmasburg, Northern Cape. EXM. Position: Heritage Specialist.
- Proposed amendment of existing mining activities for Kudumane Mine. Hotazel, Northern Cape. SRK. Position: Heritage Specialist.
- Victoria West Pipeline project. Victoria West. iXEng. Position: Heritage Specialist.
- Koup 1 and Koup 2 WEF. Beaufort West, Western Cape. SiVEST. Position: Heritage Specialist.
- Victoria West Pipelines. Victoria West, Northern Cape. iXEng. – Position: Heritage Specialist.
- East Orchards Poultry Farm Project. Delmas, Mpumalanga. EcoSphere. – Position: Heritage Specialist.
- Phase 1 Archaeological Impact Assessment (Phase 1 AIA): Gunstfontein Wind Energy Facility (WEF) and overhead powerline, near Sutherland, Northern Cape, South Africa. – Position: Archaeological Specialist (November 2020).
- Phase 1 Archaeological Impact Assessment (Phase 1 AIA): Proposed development of an overhead powerline for the approved Oya PV Facility, between Sutherland and Matjiesfontein, Northern and Western Cape, South Africa. – Position: Archaeological Specialist (October 2020).
- Phase 1 Archaeological Impact Assessment (Phase 1 AIA): Proposed development of infrastructure for the approved Kudusberg Wind Energy Facility (WEF), between Sutherland and Matjiesfontein, Northern and Western Cape, South Africa. – Position: Archaeological Specialist (October 2020).
- Phase 1 Archaeological Impact Assessment (Phase 1 AIA): Proposed Square Kilometre Array (SKA) fibre optic cable, between Beaufort West and Carnarvon, Northern and Western Cape, South Africa. (September 2020).
- Phase 1 Archaeological Impact Assessment (**Phase 1 AIA**): Kolkies PV (Photovoltaics) Project, north of Touws River, Western Cape, South Africa. – Position: Archaeological Specialist (September 2020).
- Phase 1 Archaeological Impact Assessment (**Phase 1 AIA**): Pienaarspoort Wind Energy Facility (WEF) Project 1 and 2, north-west of Matjiesfontein, Western Cape, South Africa. – Position: Archaeological Specialist (September 2020).
- Phase 1 Archaeological Impact Assessment (**Phase 1 AIA**): Swellendam Wind Energy Facility (WEF), Swellendam, Western Cape, South Africa. – Position: Archaeological Specialist (August 2020).

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- **Phase 2 Archaeological Mitigation:** Proposed development of infrastructure in the Port of Ngqura within the Coega Industrial Development Zone (IDZ), Nelson Mandela Bay Municipality, Eastern Cape, South Africa: Contract Archaeologist, excavation of Later Stone Age (LSA) shell middens (July 2020). Contracted to work with PGS Heritage.
- Polihali Dam Heritage Management Project, Lesotho: Junior field archaeologist, excavation of Later Stone Age (LSA) sites (May 2019- May 2020) as part of PGS Heritage.
 - Duties included excavation of rock shelters, site supervision, site recording, photography, lab work, section drawing and digital illustration (Inkscape and Photoshop), assisting in report writing and implementation of HSE practices.
- Ledi-Geraru Research Project, Ethiopia: excavation of Early Stone Age (ESA) sites (February-March 2020; Directed by Dr David R. Braun)
- Gorras Farm, Northern Cape, South Africa: excavation of middens next to a corbelled building; Historical site (October 2018; supervised by Simon Lee Hall and UCT PhD student Ms Vuyiswa Thembehile Lupuwana)
 - Duties included excavation of middens and surface collection.
- **Phase 2 Archaeological Mitigation:** Proposed development of boreholes and associated pipelines for the Langebaan Aquifer within the Hopefield Private Nature Reserve, Hopefield, Western Cape. - Position: Archaeological specialist (August 2018).
- Koobi Fora Field School, Kenya: Intern, excavation of Early Stone Age (ESA) and Middle Stone Age (MSA) sites (June-July 2018; Directed by Dr David R. Braun, Kathryn Ranhorn (Postdoctoral Research Fellow at Harvard University) and Jonathan Reeves (PhD student at The George Washington University))
- Data extraction to SAHRIS (South African Heritage Resource Agency) for CTS Heritage (April 2018)
- Phase 1 Archaeological Impact Assessment (**Phase 1 AIA**): Matjiesfontein Road Extension Project. Matjiesfontein, Western Cape. – Position: Archaeological Specialist (April 2018).
- Ledi-Geraru Research Project, Ethiopia: excavation of Early Stone Age (ESA) sites (February-March 2018; Directed by Dr David R. Braun)
- Ferrycarrig, Irish National Heritage Park, Wexford, southeast Ireland: Excavation of ringwork castle site associated with the Anglo-Norman invasion of Ireland (January 2018; Directed by Dr Denis Shine and Dr Stephen Mandal)