

**BASIC ASSESSMENT REPORT FOR THE PROPOSED  
PROSPECTING IN SEA CONCESSION AREA 14C BY TRANS  
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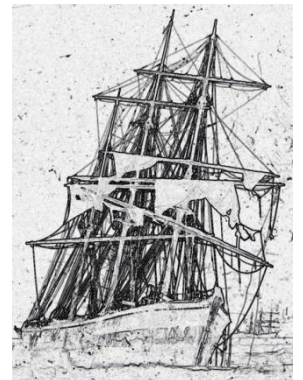
**Appendix 4:  
Heritage Specialist Study**

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# Underwater Heritage Impact Assessment, Prospecting Application for Sea Concession 14C, West Coast, South Africa



**UNDERWATER HERITAGE IMPACT ASSESSMENT FOR A PROSPECTING APPLICATION FOR SEA CONCESSION 14C, WEST COAST****WESTERN CAPE****SOUTH AFRICA****Report #:** 2022/WC/004**Status:** Final**Revision #:** 2**Date:** 07 April 2022**Prepared for:** Anchor Environmental Consultants (Pty) Ltd**Representative:** Safiyya Sedick**Tel:** +27 21 701 3420**Address:** 8 Steenberg House, Silverwood Close, Tokai**E-mail:** [safiyya@anchorenvironmental.co.za](mailto:safiyya@anchorenvironmental.co.za)**Prepared by:** Vanessa Maitland**ASAPA Registration #:** 326**Field:** Maritime Archaeology**Address:** 203/71 Elandskraal, Sedgefield Rural, Western Cape**Cell:** 082 490-4066**E-Mail:** [vanessa@cocojams.co.za](mailto:vanessa@cocojams.co.za)**Declaration:**

I, Vanessa Maitland, declare that I have no financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services.



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07-04-2022

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## GLOSSARY OF ACRONYMS

<b>ASAPA</b>	Association of Southern African Professional Archaeologists
<b>EIA</b>	Environmental Impact Assessment
<b>HIA</b>	Heritage Impact Assessment
<b>MUCH</b>	Maritime and Underwater Cultural Heritage (Includes underwater and land maritime heritage)
<b>NHRA</b>	National Heritage Resources Act (No. 25 of 1999)
<b>NM</b>	Nautical Mile
<b>UHIA</b>	Underwater Heritage Impact Assessment

## 1. INTRODUCTION

This report is an Underwater Heritage Impact Assessment (UHIA), a part of the Environmental Impact Assessment (EIA) for a Prospecting Licence in Sea Concession 14C, West Coast.

This report fulfils Section 38 of the National Heritage Resources Act (NHRA) (25 of 1999) which states that an assessment of potential heritage resources in the development area needs to be done. It is a desktop survey of existing shipwreck databases in the areas, as delineated in Section 5. It concludes with recommended management measures for the area, in terms of cultural heritage resources.

## 2. TERMS OF REFERENCE

The aim of this desktop survey is to determine if there are any known shipwrecks within the defined area.

The scope of work consisted of the following:

- Desktop study, consisting of a database of known and suspected wrecks in the area ascertained through study of available written and oral resources

The objectives were to:

- Identify potential MUCH sites within the designated area
- Recommend management measures for sites before and during development

## 3. HERITAGE RESOURCES

### 3.1. THE LEGISLATION

According to Section 32 (1) of the NHRA (No. 25 of 1999), heritage objects consist of:

“An object or collection of objects, or a type of object or list of objects, whether specific or generic, that is part of the national estate and the export of which SAHRA deems it necessary to control, may be declared a heritage object, including— (a) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects, meteorites and rare geological specimens.”

The Act further stipulates that the term “archaeological” includes:

“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 respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), 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.”

Section 35 of the Act states:

“(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority—

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;”

(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.”

Furthermore Section 38 of the Act states:

“(1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50 m in length;
- (c) any development or other activity which will change the character of a site—
  - (i) exceeding 5 000 m<sup>2</sup> in extent; or
  - (ii) involving three or more existing erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

(2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection (1)—

- (a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
- (b) notify the person concerned that this section does not apply.

(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): provided that the following must be included:

- (a) The identification and mapping of all heritage resources in the area affected;
- (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;
- (c) an assessment of the impact of the development on such heritage resources;
- (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- (e) the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- (f) if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- (g) plans for mitigation of any adverse effects during and after the completion of the proposed development.

(4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development, decide—

- (a) whether or not the development may proceed;
- (b) any limitations or conditions to be applied to the development;
- (c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
- (d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
- (e) whether the appointment of specialists is required as a condition of approval of the proposal.

(5) A provincial heritage resources authority shall not make any decision under subsection (4) with respect to any development which impacts on a heritage resource protected at national level unless it has consulted SAHRA.

- (6) The applicant may appeal against the decision of the provincial heritage resources authority to the MEC, who—
- (a) must consider the views of both parties; and
  - (b) may at his or her discretion—
    - (i) appoint a committee to undertake an independent review of the impact assessment report and the decision of the responsible heritage authority; and
    - (ii) consult SAHRA; and
  - (c) must uphold, amend or overturn such decision.
- (7) The provisions of this section do not apply to a development described in subsection (1) affecting any heritage resource formally protected by SAHRA unless the authority concerned decides otherwise.
- (8) The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.
- (9) The provincial heritage resources authority, with the approval of the MEC, may, by notice in the *Provincial Gazette*, exempt from the requirements of this section any place specified in the notice.
- (10) Any person who has complied with the decision of a provincial heritage resources authority in subsection (4) or of the MEC in terms of subsection (6) or other requirements referred to in subsection (8), must be exempted from compliance with all other protections in terms of this Part, but any existing heritage agreements made in terms of section 42 must continue to apply.”

### **3.2. CONCLUSION – THE LEGISLATION IN TERMS OF THE PROJECT**

There is extensive national legislation covering MUCH sites. Within the scope of this project, Section 38 of the NHRA (25 of 1999), states that an assessment of potential heritage resources in the concession area needs to be done. This is the purpose of the desktop study. These processes identify potential MUCH sites. If a potential MUCH site is uncovered during the work, a maritime archaeologist needs to be contacted to assess the find. Thereafter, in conjunction with SAHRA, a decision will be made regarding the significance of the site. If it is deemed to be culturally significant, the company can apply to the Maritime Unit of SAHRA for a permit for removal, excavation or destruction in terms of Section 35 of the NHRA.

## **4. STUDY APPROACH AND METHODOLOGY**

### **4.1. EXTENT OF THE ASSESSMENT**

This desktop survey is concerned with MUCH and covers the area as described in Section 5. However, shipwrecks are a difficult cultural resource to pin to a specific area, and therefore this UHIA covers a broader area, than the designated areas.

In addition to shipwrecks, a much larger part of our cultural heritage encompasses pre-colonial history. It is not possible to do a desktop assessment of Stone Age sites underwater. However, the possibility of their existence must be borne in mind. The transition from Middle to Later Stone Age and the earliest part of the LSA took place during the coldest time of the last glacial period, when sea levels were much lower than today. Therefore, while sampling and prospecting is being undertaken, artefacts from this period may be part of the materials recovered.



## 4.2. METHODOLOGY

### 4.2.1. DESKTOP SURVEY

A shipwreck database was compiled from the available written and oral sources and is available in Section 6.

#### LIMITATIONS

- The database is a research tool that is constantly evolving as information is uncovered and added.
- The solitary nature of many wrecks means that information may be scarce and/or inaccurate. Therefore, without definitive information, shipwrecks are allocated to an area, based on limited information and certain assumptions regarding the dynamic nature of the environment.
- Shipwrecks that may initially be considered outside of the area, may drift more many miles on the surface or just under the water surface after being abandoned. Therefore, these are also included in the Desktop Survey.

## 5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

### 5.1. SITE LOCATION AND DESCRIPTION

The Sea Concession, 14C is considered in this report (**Error! Reference source not found.**). The area c. 1060 km<sup>2</sup> and is between Doring Bay and Donkin Bay on the west coast of South Africa.

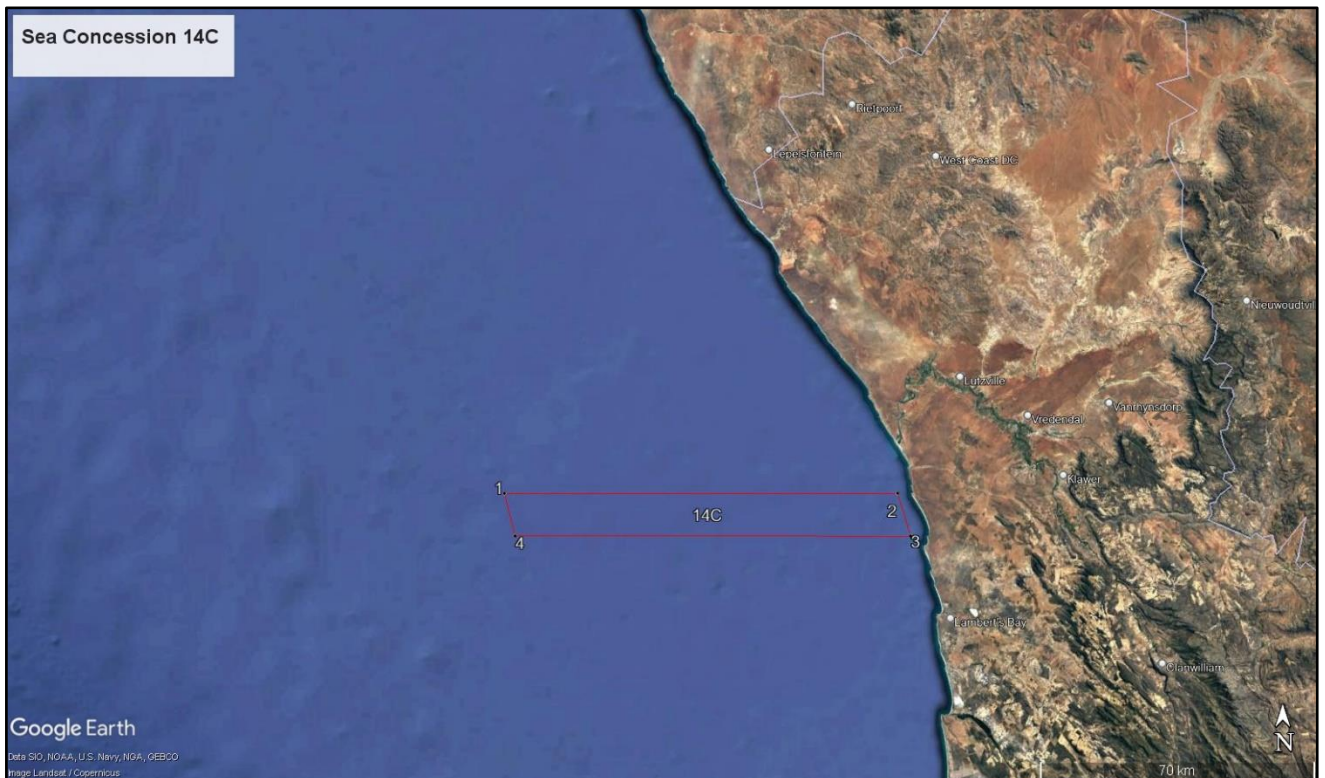


Figure 1: Location of Sea Concession 14C (Anchor 2022; Google Earth 2022)

## 5.2. SHIPWRECK DATABASE

The nature of the environment, poor historical reporting and the length of time since the wrecks occurred means that underwater cultural heritage sites may literally be anywhere and are thus hard to pinpoint with any accuracy beforehand. It is important to have a database because if MUCH sites are uncovered during the project, it will be easier to identify the wreck and thus assess its cultural and historical significance.

There are several points to bear in mind when compiling and making use of any shipwreck database.

- The first recorded European voyages down the west coast of Africa were by the Portuguese. When the Portuguese first sent out their explorers, they stuck close to the coastline, in order to map the land. The present-day Cape Voltas may be a survival of the Portuguese name Volta das Angras. 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. This statement is borne out by the Cabral Fleet of 1500 (#11-14 below).
- There is some anecdotal evidence that the Phoenicians circumnavigated Africa (Herodotus 1954). However, if this is true, these ships had to stick right to the coastline and therefore are unlikely to be far offshore.
- 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.

The Shipwreck Database uses several conventions to assess the impact of projects on heritage resources (Appendix I). The important ones, in terms of this project are:

Certainty of prediction:

- **Definite:** More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- **Probable:** More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- **Possible:** More than 40% sure of a particular fact, or of the likelihood of an impact occurring
- **Unlikely:** Less than 40% sure of a particular fact, or the likelihood of an impact occurring



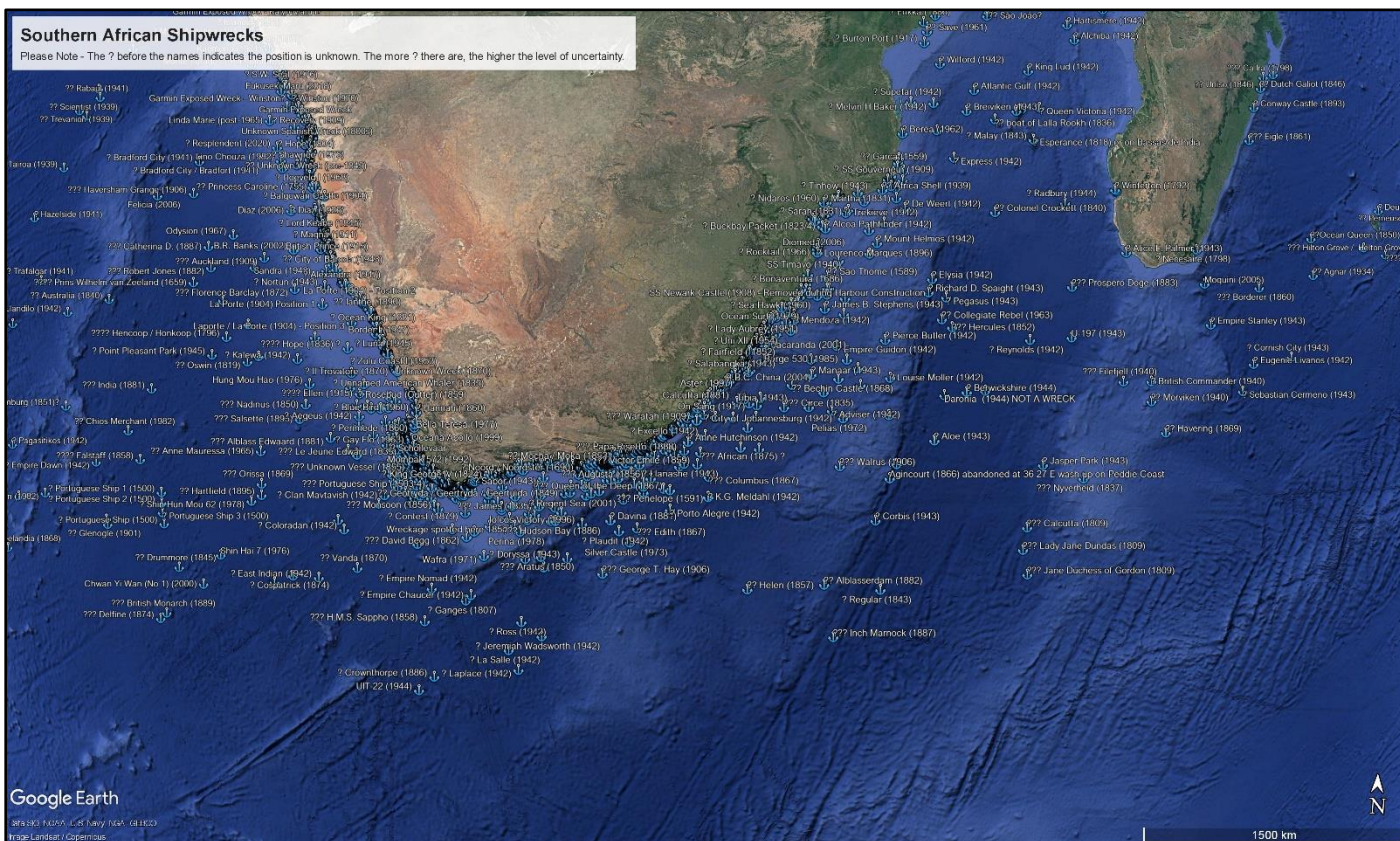


Figure 2: South African Shipwrecks (Google Earth 2022; Wallace 1929; Turner 1988; Levine 1989; van den Bosch 2009; SAHRIS 2017; Reocities 2017; Maitland 2022; u-boat.net 2017)

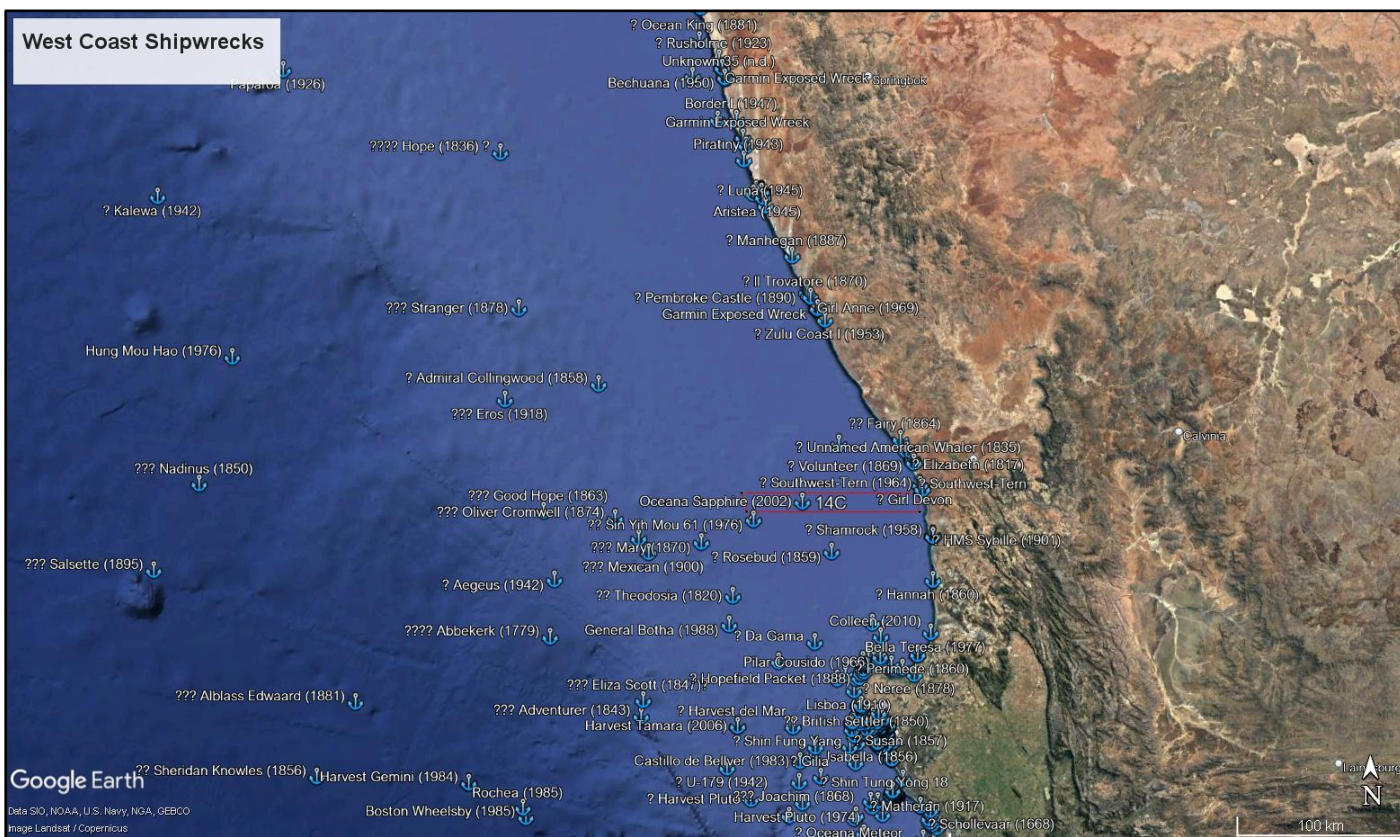


Figure 3: West Coast Shipwrecks (Google Earth 2022; SLR 2018; Turner 1988; Levine 1989; van den Bosch 2009; SAHRIS 2017; Reocities 2017; Maitland 2022; u-boat.net 2017)



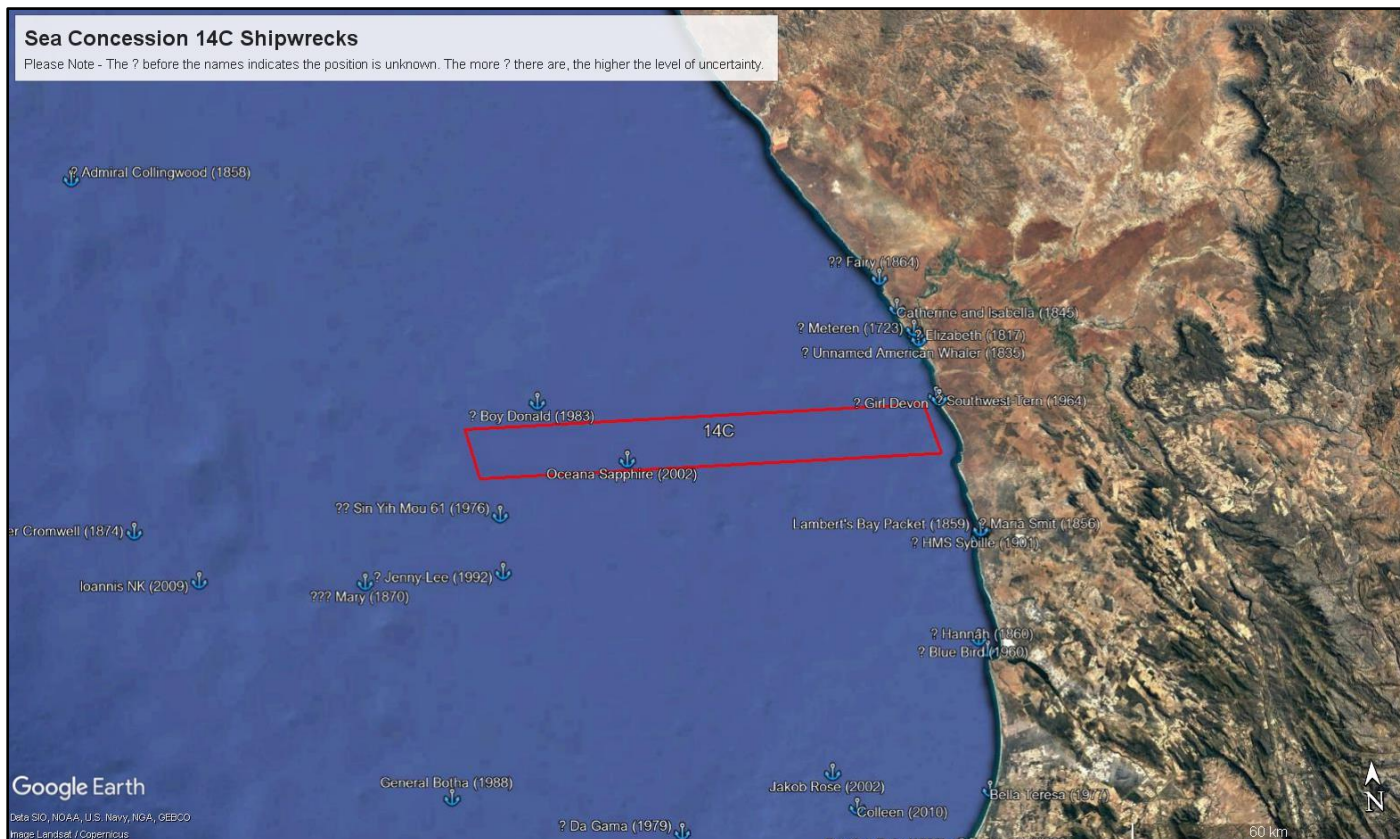



Figure 4: Shipwrecks in and around Sea Concession 14C (Google Earth 2022; SLR 2018; Turner 1988; Levine 1989; van den Bosch 2009; SAHRIS 2017; Reocities 2017; Maitland 2022; u-boat.net 2017)

### 5.2.1. SHIPWRECKS DEFINITELY IN 14C

#	Name	Events	Nation	Date	History	Location	Significance
1	<i>MV Oceana Sapphire</i>	Sank	RSA	2002-03	This 22 m long fishing vessel of 99 tons was built by Swafil in Lüderitz, Namibia in 1973/4. It has a wooden hull.	31 54.64S 17 30.77E 146 m depth Coordinates van den Bosch	None
							
					Figure 5: Oceana Sapphire (SA Trawler Heritage)		

### 5.2.2. SHIPWRECKS POSSIBLY IN 14C

#	Name	Events	Nation	Date	History	Location	Significance
2	<i>Boy Donald</i>	Sank	RSA	1983-03-22	This 20 m long fishing vessel was built in 1961 and owned by the Lamberts Bay Fishing Company. The boat was under Capt J. Hunter when it foundered. At least five of the crew were rescued. It sank rapidly and the search was concentrated in an area 55 miles northwest of Lamberts Bay. This vessel may be in the concession area.	Offshore	None
3	<i>Girl Devon</i>	Sank	RSA	1971-01-14	Under Capt. P. Muggel, this cutter sank near Doring Bay.	Near Doring Bay	None
4	<i>Ioannis NK</i>	Sank	Panama	2009-07-23	This bulk carrier, laden with sugar sank at the coordinates given. The crew were rescued by the South African Airforce. These coordinates are from the SAN charts and are likely correct. The wreck is to the west of the concession.	West of 14 C 32 05.60S 16 31.20E	None
5	<i>Jenny-Lee</i>		RSA	1992-02-18	This tuna fishing vessel under Capt F. da Luz was sunk after being swamped by a giant wave, approximately 52	Offshore	None

#	Name	Events	Nation	Date	History	Location	Significance
					NM west of Lamberts Bay. It may be in the concession area.		
6	<i>Southwest Tern</i>	Disabled, aground, broke up	Namibia / RSA	1964-09-13	Mr A.R. Shooter had recently purchased this vessel from South West Fishing Industries. This 14.5 m long rock lobster fishing boat was built in 1951, by F. Nieswandt of Lüderitz. The Southwest Tern (L-14) was on its way to Cape Town from Luderitz when it became disabled, the radio broke and the boat drifted for three days. She eventually grounded near a beach, 32 km north of Lamberts Bay, and broke up. All four crew members made it ashore safely.	East of 14 C Doring Bay	None

### 5.2.3. SHIPWRECKS IMPROBABLY IN 14C

#	Name	Events	Nation	Date	History	Location	Significance
<b>5.2.3.1. SHIPWRECKS WITH NO HERITAGE SIGNIFICANCE</b>							
7	<i>Chios Merchant</i>	Leaking, sank	Greek	1982-10-10	It was leaking but under control when the leak worsened dramatically. After sending out an SOS, the crew abandoned the vessel in a sinking condition at 520.9 NM west of the Orange River Mouth (van den Bosch 2009). It may have drifted quite far from its original reported position.	Circa. 520.9 NM west of the Orange River Mouth	None
8	<i>Sin Yih Mou 61</i>	Exploded, sank	China	1976-3-29	300-ton fishing vessel, exploded and sank possibly in the vicinity of Port Nolloth, the crew abandoned the boat (van den Bosch 2009).	129.5 NM northwest of Cape Town, near Port Nolloth	None
<b>5.2.3.2. SHIPWRECKS WITH A LOW HERITAGE SIGNIFICANCE</b>							
9	<i>Berea</i>	Disappeared	RSA	1933-11-4	This steam whaler disappeared after leaving Table Bay.	West Coast?	Low
10	<i>Ellen</i>	Capsized		1915	Capsized by a wave. None of the databases list a location. However, the West Coast was a prime fishing area, so it is left in the database.	Unknown	Low
11	<i>Eros</i>	Foundered	Britain	1918-05-26	This 174-ton steel steamer had been sent to the Cape for the Namaqua Copper Company. After several voyages, it was laid up in order to alter its specifications. On 25 May, it left Table Bay for Port Nolloth under Captain Robert Brooks. However, it foundered en-route and one man died. (Levine 1989) According to van den Bosch (2009), the vessel is off Port Nolloth and according to the Miramar Ship Index (2009), it is off Lambert's Bay The information is contradictory and further research may show that it grounded on the coast or sank between the two points. However, it is included here for the moment.	West Coast	Low
12	<i>Glenogle</i>	Fire, abandoned	Britain	1901-10-27	According to van den Bosch (2009), this 914-ton steel barque caught fire and was abandoned at 34 38.00S, 03 40.00E. The Equatorial current which runs west to east here could have pulled the abandoned vessel into the Benguela current and up the west coast.	Atlantic Ocean	Low
13	<i>Valkyrie</i>	Wrecked		1894-5-16	This sailing cutter was apparently lost "Off Port Nolloth (Levine 1989) or "Off the coast of Africa" (van den Bosch 2009).	West Coast	Low
<b>5.2.3.3. SHIPWRECKS WITH A MEDIUM HERITAGE SIGNIFICANCE</b>							
14	<i>Admiral Collingwood</i>	Foundered	Britain	1858	This 360-ton barque under Captain Smith was bound from London for Algoa Bay when it apparently foundered 320km off St Helena Bay. (Levine 1989) This may put her in the West Coast area.	West Coast	Medium

#	Name	Events	Nation	Date	History	Location	Significance
15	<i>Alblass Edwaard</i>	Fire and abandoned		1881-11-28	Caught fire and abandoned on 28-11-1881.	Off South Africa	Medium
16	<i>Australia</i>	Fire, sank	Britain?	1840-12-27	This 250-ton brig, under Capt. A. Yule was built in Dundee, Scotland in 1839. It was on its maiden voyage to Australia with passengers and cargo when the vessel caught fire and sank, apparently 9.6 nautical miles (NM), north of the Olifants River Mouth. However, it was 800 km west of the Cape of Good Hope when the fire broke out. The twenty-eight passengers and crew entered the lifeboats shortly before it was overwhelmed by the flames. A boy died at sea and a man died after they made land at Olifants River after nine days at sea. Farmers helped the survivors reach Cape Town. (van den Bosch 2009)  This vessel could have drifted into the concession area.	West Coast	Medium
17	<i>Catterina D.</i>	Fire, abandoned	Austria	1887-10	This 610-ton barque from Liverpool for Cape Town with a cargo of coal caught fire. It was apparently abandoned before it sank, 480km west of Hottentot Point. The captain and crew reached Walvis Bay in the lifeboats. (Levine 1989) As it was abandoned before it sank, this vessel is included in the database.	West Coast	Medium
18	<i>Elizabeth Jane</i>	Unknown		1834-01-20	This vessel seems to be a whaler that operated in Tasmania and the southern oceans. Although I can find no further information on its status at this time, I have left it in the database.	Unknown	Medium
19	<i>Florence Barclay</i>	Fire, abandoned	Britain	1872-11-7	This 243-ton barque was built in 1866. Under Captain J.H. Voller, it was bound from Hull for Table Bay and Mauritius. Somewhere off the west coast, the vessel caught fire and was abandoned. The crew were in three lifeboats, one of which disappeared during the first night at sea. The other two boats arrived at Pomona Island (Namibia) three days later. The survivors were taken to Table Bay by the <i>Lilla</i> . (Levine 1989) As the crew beached only 120km north of the concession areas, I have included this vessel.	West Coast	Medium
20	<i>Good Hope</i>	Fire, sank	Cape?	1863-7-31	I have very little information on this wreck. Only that it was a Cape trader and burned at sea (van den Bosch 2009).	Unknown	Medium
21	<i>Haab</i>	Abandoned	Norway	1897-10-8	This 861-ton wooden barque was according to Levine (1989) grounded on Dassen Island. Van den Bosch (2009) states the vessel was abandoned 260 NM from Table Bay. According to the Brisbane Courier 04-11-1897, the vessel caught fire and was abandoned, the crew, in lifeboats, eventually landed on Dassen Island. Dassen Island is only c. 35 NM from Table Bay (i.e., the Port). 260.5 NM means that the vessel was abandoned in the vicinity of the concession and may be anywhere between there and Dassen Island.	Between Port Nolloth and Dassen Island	Medium
22	<i>Hartfield</i>	Fire, sank	Britain	1895-9-9	According to van den Bosch (2009) and Levine (1989), this 852-ton iron barque caught fire at 34 30.00S, 11 30.00E, 259 NM west of Table Bay. The Equatorial current which runs west to east here could have pulled the abandoned vessel into the Benguela current and up the west coast.	West Coast	Medium
23	<i>India</i>	Abandoned	Sweden	1881-8-24	Abandoned at 7° E. The currents may have pulled it towards the West Coast or further out into the Atlantic.	West Coast / Atlantic Ocean	Medium
24	<i>Joachim</i>	Fire, abandoned	German	1868-10-10	Apparently the 763-ton barque under Captain Helenmeyer was on a voyage from Bremen to Rangoon with a cargo of coal. When it "burnt off the Cape". The crew were rescued by the American vessel, <i>China</i> and brought to Cape Town (Levine 1989).	Off the Cape	Medium
25	<i>Juno</i>	Fire, abandoned	Sweden	1885-4-9	The 1274-ton schooner, under Captain T. Keyller was bound from Norway for Melbourne with a cargo of deals (timber). It caught fire and was abandoned at	Atlantic Ocean	Medium

#	Name	Events	Nation	Date	History	Location	Significance
					approximately 37 24.00S,11 30.00E. the 22-man crew took to the lifeboats and set off towards the Cape. The currents washed them towards the Orange River. They attempted to beach the lifeboat 32km south of the river but capsized and there were only four survivors. These four were picked up by the <i>Namaqua</i> and taken to Cape Town. (Levine 1989; van den Bosch 2009). It follows that if the current brought the lifeboat towards the Orange River, that the same principle could apply to the abandoned schooner.		
26	<i>Luba / Luban</i>	Fire, abandoned	Cape	1864-2-11	This barque was on its way from Leith for Cape Town with a cargo of coal and coal tar when it caught fire and sank 86.3 NM off Table Bay. The crew were rescued. (Levine 1989; van den Bosch 2009) This position is in the general vicinity of the concession.	West Coast	Medium
27	<i>Mary</i>	Disappeared	Britain	1870-07-24	Under Captain Anderson, this vessel left Simon's Bay for Falmouth and disappeared. (Levine 1989) As the intended route goes up the west coast, I have included this vessel.	Atlantic Ocean	Medium
28	<i>Mississippi</i>	Abandoned	USA	1862-08-31	This 2030-ton steamship was abandoned about 450 km off the West Coast after severe weather was causing extensive leaks. It may have drifted closer to land before sinking.	Off West Coast	Medium
29	<i>Mona</i>	Fire, abandoned	Britain	1887-09	The 1045-ton barque under Captain Pearson was on a voyage from Grimsby to Durban with coal when it caught fire at 27° 14' S 24° 55' W. The following day the crew took to the lifeboats. After a week, the crew were picked up by the German barque, <i>Livingstone</i> and landed at Mossel Bay. (Levine 1989) The current was clearly pushing the survivors towards the Cape coast and, so it follows that their vessel, abandoned before sinking, may also have been pulled by the currents towards the west coast.	Off West Coast	Medium
30	<i>Oliver Cromwell</i>	Fire, abandoned	Britain	1874-8-30	This vessel, on a voyage from Newcastle to Aden with a cargo of coal, caught fire. The crew were rescued by the barque <i>Saxon</i> and brought to Table Bay (Levine 1989). There is very little information on this vessel, so it is included in the database.	Unknown	Medium
31	<i>Orissa</i>	Fire, abandoned	Britain	1869-9-27	This 634-ton, three-masted, wooden ship was built in 1862. Under Captain R. Adams, bound for Mauritius with a cargo of coal, it caught fire and was abandoned 343.2 NM west of Table Bay. (Levine 1989; van den Bosch 2009). The Equatorial current which runs west to east here could have pulled the abandoned vessel into the Benguela current and up the west coast.	Atlantic Ocean	Medium
32	<i>Oswin</i>	Leaking, abandoned	Britain	1819-1-27	This vessel was en-route to the East. According to Captain Ray, the commander of the vessel, the ship rounded the Cape and sprung a leak in the vicinity of the Agulhas Bank and while the pumps were working 24 hours a day, they were unable to make any headway on the leak. By the next day, there was 1.5m of water in the hold and this was increasing. The crew launched the longboat and filled it with supplies. "Embarking in the boat the commander and crew steered for Saint Helena and were from 31 Jan to 12 Feb exposed to great sufferings and anxiety, until they reached Saint Helena. During this time, they ran about 1400 miles and were particularly fortunate in making the Island to a mile." (The Asiatic Journal 1820: 388) Despite having rounded the Cape, the Benguela current seems to have pulled the vessel back around the Cape while they were attempting to repair it. They state that they travelled 1400 miles after abandoning it. Depending on whether this newspaper report was using nautical miles or statute miles, makes a difference to the	Off West Coast	Medium



#	Name	Events	Nation	Date	History	Location	Significance
					location of the wreck. Statute miles puts the vessel off Lüderitz, nautical miles places the wreck in the vicinity of the West Coast.		
33	<i>Stranger</i>	Fire, abandoned	Britain	1878-8-27	This 288-ton barque was built in 1872. Under Captain Bendon, it was bound from London to Port Nolloth with a general cargo. The vessel caught on fire and was abandoned at sea. Two days after taking to the lifeboats, the crew arrived at Port Nolloth. (Levine 1989) The location of the abandonment puts this vessel firmly in the West Coast area.	West Coast	Medium
<b>5.2.3.4. SHIPWRECKS WITH A HIGH HERITAGE SIGNIFICANCE</b>							
34	<i>Abberkerk</i>	Wrecked		1779	Built in 1772. Wrecked between Cape and Holland. Voyage 8033.2	Off South Africa	High
35	<i>Aegeus</i>	Torpedoed, sank	Greece	1942-10-31	This 3 792-ton steamship left Trinidad for Saldanha Bay and then Durban. It never arrived. After WWII, German records indicated that it was torpedoed by the U-177 at 32° 30' s 16° 00' E. (Levine 1989; van den Bosch 2009)  These coordinates are just west of the concession and are where the U-boat reports torpedoing the vessel, not necessarily where it sank. In addition, the coordinates mentioned are subject to the technical limitations of the period.	West Coast	High
36 – 39	<i>Cabral Fleet</i>	Lost	Portugal	1500	Levine (1989) states: "Thirteen vessels under command of Pedro Alvares Cabral – the first Portuguese fleet which sailed annually to the Indies – and found Brazil. Twenty days after the fleet sailed from Brazil, it was struck by storms and four ships, including the one under command of Bartolomeu Dias, foundered. Duffy [Shipwrecks and Empire, 1955] writes that the ships were lost off the Cape of Good Hope, but, according to Axelson [Levine cites personal correspondence], the fleet could not have been off the Cape of Good Hope then; they would have been in the vicinity of the shortly-to-be-discovered islands of Tristao da Cunha." There is such scant and contradictory information regarding the loss of these four vessels that I am including them in this database, even though the chances of them being here is exceedingly slim.	Unknown – Atlantic Ocean	High
40	<i>Columbine</i>	Torpedoed, sank	South Africa	1944-06-16	This 3 268-ton steamship owned by the South African government was initially a German vessel. It was seized at the start of WWII. On 16 June 1944, it had 52 people on board when it was torpedoed by the U-198. 23 people died when their lifeboat capsized, including two naval officer wives. The coordinates for its torpedoing are 32° 44' S and 17° 22' E. (Levine 1989; van den Bosch 2009)  These coordinates are south of the concession and is where the U-boat reports torpedoing the vessel, not necessarily where it sank. In addition, the coordinates mentioned are subject to the technical limitations of the period.	West Coast	High
41	<i>Discovery</i>	Disappeared	Britain	1644	Lost between India and Britain	Unknown	High
42	<i>Honcoop / Hencoop</i>	Disappeared	Netherlands / Britain	c.1796	This vessel was taken from the Dutch by the British at The Battle of Saldanha (1871), it was being sailed at a prize back to England when it disappeared (The London Gazette: 1796)	Atlantic Ocean	High
43	<i>Nortun</i>	Torpedoed	Panama	1943-03-20	This 3 663-ton ship was bound from Table Bay to Bahia when it was torpedoed and sunk by the U-516 about 130km south-west of Lüderitz at 28° 00' S 14° 55' E. (Levine 1989; van den Bosch 2009).  These coordinates are north of the concession and is where the U-boat reports torpedoing the vessel, not necessarily where it sank. In addition, the coordinates	Off West Coast  Approximately: 28° 00' S 14° 55' E. **	High



#	Name	Events	Nation	Date	History	Location	Significance
					mentioned are subject to the technical limitations of the period.		
44	<i>U-179</i>	Depth charges	Germany	1942-10-8	U-179 was responsible for torpedoing the British steamship <i>City of Athens</i> , about 45km to the south-east on the same day as the U-boat was surprised on the surface by <i>H.M.S. Active</i> . As it dived, the British vessel launched depth charges. Van den Bosch (2009) gives its coordinates as 33 25.00S, 17 10.00E. All hands were lost (61 crew) (Levine 1989; U-boat.net 2017). These coordinates are just south of the concession and is where the vessel reports depth charging the U-boat, not necessarily where it sank. In addition, the coordinates mentioned are subject to the technical limitations of the period.	West Coast Approximately: 33 25.00S, 17 10.00E. **	High

#### 5.2.4. WRECKS THAT SHOULD BE REMOVED FROM THE WEST COAST DATABASES

These are included, as they are in many databases and should be removed, for the reasons given below. Their inclusion mitigates against a belief that they were ignored.

#	Name	Events	Nation	Date	History	Location	Significance
1	<i>Adventurer</i>	Wrecked	Britain?	1843	From Sandown Bay (Isle of Wright?) to Table Bay or Algoa Bay. The Reocities website states the vessel was lost west of Saldanha. But the newspaper states lost in Sandown Port. Ann Barrett a researcher from the Isle of Wright stated the wreck is not on their lists. The vessel is not listed in Lloyds as per Levine (1989). The wreck may be in the South African Sandown Bay near Kleinmond, Western Cape. Therefore, although it in the database for the West Coast, I believe it needs more research.	Sandown Bay (Kleinmond) or Isle of Wright	
2	<i>Leonine Mary</i>	Disappeared	Cape	1859-2	This vessel is an entry mistake and confused for the <i>Leontine Mary</i> , a coaster that sank between Algoa Bay and East London in 1859.		
3	<i>Earl of Abergavenny</i>	Disappeared	Britain	1805	This English East Indiaman, under Captain J. Wordsworth was lost "off the Cape Coast" (van den Bosch 2009). However, removed off the database as it was actually wrecked on The Shambles, Isle of Portland (Cumming 2016)	The Shambles, Isle of Portland	
4	<i>Antoinette</i>			1854	The only database that mentions this wreck is SAHRIS. I could not find any mention of a vessel with this name wrecking in southern Africa from 1852 – 1856 in any historical newspapers.		
5	<i>Hope</i>			1836	The only reference to this vessel is in van den Bosch's (and therefore in SAHRIS) database. Possibly lost on the West Coast. However, I can't find any other evidence, in the historical newspaper, of this vessel.		
6	<i>Prins Wilhelm van Zeeland</i>		Netherlands	1659?	SAHRIS is the only database that has this wreck. The only reference to this vessel I could find was the Prins Willem which sank near Madagascar in 1662. However, as it is from a period with few records, I am leaving it in the database for now.		

\*\* Please note these coordinates are all approximations. The datums and methods used through time and within various areas, to record latitude and longitude, change. This can cause large deviations in real-world locations. Without knowing the datum and method that was used to record the coordinates, they cannot be converted accurately. In addition, the recording of coordinates has become much more accurate in the 21<sup>st</sup> century. All coordinates here WGS84.

## 6. CONCLUSIONS

A wide variety of sources were consulted to build this database. It may well be missing earlier, unrecorded wrecks. There is always the possibility of an early unknown wreck being found, as happened in Oranjemund when the *Bom Jesus* (1533) was discovered in 2008 during diamond mining operations (Alves 2011). There were no submerged objects or wrecks noted on SAN Chart 117.

In Sea Concession 14C there may be 44 shipwrecks, dating from the 1500s through to modern times.

According to the databases, there is DEFINITELY one modern wreck, within the area. This would be able to be verified with geophysical data.

There are five modern wrecks that are POSSIBLY in Sea Concession 14C. They were reported as being lost near the concession. This would be able to be verified with geophysical data.

The other 38 shipwrecks may be found in this area during work, although it is UNLIKELY. These are vessels that either disappeared between two ports or were abandoned mid-ocean. One tries, through research, to narrow down the areas where these vessels were lost, if they are still in the list, it is because there is insufficient information to remove them.

Two of the above shipwrecks are modern and are not protected by the NHRA.

Eight of the vessels are from the 20<sup>th</sup> century, with four that were sunk during World War II.

Twenty-one vessels are from the 19<sup>th</sup> century, the heyday of sailing vessels. Only two vessels are from the 18<sup>th</sup> century, and one is from the 17<sup>th</sup> century. Four are from the 16<sup>th</sup> century, although it is highly unlikely that they are in this area.

The significance of most of the wrecks is low or medium. There are, however, a few that may have a high significance factor. These include very old ships, war-time losses, and other vessels with a specific national or international significance. The significance of a shipwreck is hard to pinpoint without significant research and would have to be dealt with on an ad hoc basis if they are discovered.

The potential for recovering pre-Colonial, Stone Age artefacts must be borne in mind.

At the time of writing this report, no geophysical data for the area was available. When such surveys are undertaken, and any shipwrecks or shipwreck debris is noted, images and coordinates for these should be shared with the heritage practitioner and the MUCH Unit at SAHRA.

## 7. IMPACT TABLES

TABLE 1: FOR PRE-COLONIAL SITES AND ARTEFACTS

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 2	Long-term 3	Medium 6	Improbable	Low	- ve	Medium
<b>Mitigation measures:</b> Induction for site managers on archaeological site and artefact recognition. Geophysical surveys would possibly identify wrecks and wreck debris. Reporting of sites to the heritage practitioner for assessment and evaluation. Avoiding the wrecks would preserve these MUCH resources.								
With mitigation	Local 1	Low 2	Long-term 3	Medium 6	Improbable	LOW	+ ve	Medium

TABLE 2: FOR SECTION 5.2.1 SHIPWRECKS DEFINITELY IN 14C

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Long-term 3	Low 5	Definite	Low	- ve	High
<b>Mitigation measures:</b> There is no heritage significance currently. Induction for site managers on archaeological site and artefact recognition. Geophysical surveys would pinpoint the wrecks to avoid damaging equipment. Reporting of sites to the heritage practitioner for assessment and evaluation. Avoiding the wrecks would preserve these MUCH resources for future generations.								
With mitigation	Local 1	Low 1	Long-term 3	Low 5	Definite	LOW	+ ve	High

TABLE 3: FOR SECTION 5.2.2 SHIPWRECKS POSSIBLY IN 14C

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Long-term 3	Low 5	Possible	Very Low	- ve	Medium
<b>Mitigation measures:</b> There is no heritage significance currently. Induction for site managers on archaeological site and artefact recognition. Geophysical surveys would pinpoint the wrecks to avoid damaging equipment. Reporting of sites to the heritage practitioner for assessment and evaluation. Avoiding the wrecks would preserve these MUCH resources for future generations.								
With mitigation	Local 1	Low 1	Long-term 3	Low 5	Possible	VERY LOW	+ ve	Medium

FOR SECTION 5.2.3 SHIPWRECKS IMPROBABLY IN 14C

TABLE 4: 5.2.3.1 SHIPWRECKS WITH No HERITAGE SIGNIFICANCE

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Long-term 3	Low 5	Improbable	Very Low	- ve	Medium
<b>Mitigation measures:</b> There is no heritage significance currently. Induction for site managers on archaeological site and artefact recognition. Geophysical surveys would pinpoint the wrecks to avoid damaging equipment. Reporting of sites to the heritage practitioner for assessment and evaluation. Avoiding the wrecks would preserve these MUCH resources for future generations.								
With mitigation	Local 1	Low 1	Long-term 3	Low 5	Improbable	VERY LOW	+ ve	Medium

**TABLE 5: 5.2.3.2 SHIPWRECKS WITH A LOW HERITAGE SIGNIFICANCE**

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 1	Long-term 3	Low 5	Improbable	Very Low	- ve	Medium
<b>Mitigation measures:</b> Induction for site managers on archaeological site and artefact recognition. Geophysical surveys would possibly identify wrecks and wreck debris. Reporting of sites to the heritage practitioner for assessment and evaluation. Avoiding the wrecks would preserve these MUCH resources.								
With mitigation	Local 1	Low 1	Long-term 3	Low 5	Probable	LOW	+ ve	Medium

**TABLE 6: 5.2.3.3 SHIPWRECKS WITH A MEDIUM HERITAGE SIGNIFICANCE**

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Medium 2	Long-term 3	Medium 6	Improbable	Low	- ve	Medium
<b>Mitigation measures:</b> Induction for site managers on archaeological site and artefact recognition. Geophysical surveys would possibly identify wrecks and wreck debris. Reporting of sites to the heritage practitioner for assessment and evaluation. Avoiding the wrecks would preserve these MUCH resources.								
With mitigation	Local 1	Medium 2	Long-term 3	Medium 6	Possible	LOW	+ ve	Medium

**TABLE 7: 5.2.3.4 SHIPWRECKS WITH A HIGH HERITAGE SIGNIFICANCE**

	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without mitigation	Local 1	Low 3	Long-term 3	High 7	Improbable	Medium	- ve	Medium
<b>Mitigation measures:</b> Induction for site managers on archaeological site and artefact recognition. Geophysical surveys would possibly identify wrecks and wreck debris. Reporting of sites to the heritage practitioner for assessment and evaluation. Avoiding the wrecks would preserve these MUCH resources.								
With mitigation	Local 1	Low 3	Long-term 3	High 7	Possible	MEDIUM	+ ve	Medium

**TABLE 8: SUMMARY TABLE**

Impact	Consequence	Probability	Significance	Status	Confidence
<b>Impact Pre-Colonial Sites</b>	Medium	Possible	LOW	-ve	Medium
With Mitigation	Medium	Possible	LOW	+ve	Medium
<b>Impact 5.2.1</b>	Low	Definite	LOW	-ve	High
With Mitigation	Low	Definite	LOW	+ve	High
<b>Impact 5.2.2</b>	Low	Possible	VERY LOW	-ve	Medium
With Mitigation	Low	Possible	VERY LOW	+ve	Medium
<b>Impact 5.2.3.1</b>	Low	Improbable	VERY LOW	-ve	Medium
With Mitigation	Low	Improbable	VERY LOW	+ve	Medium
<b>Impact 5.2.3.2</b>	Low	Improbable	VERY LOW	-ve	Medium
With Mitigation	Low	Probable	LOW	+ve	Medium
<b>Impact 5.2.3.3</b>	Medium	Improbable	LOW	-ve	Medium
With Mitigation	Medium	Possible	LOW	+ve	Medium
<b>Impact 5.2.3.4</b>	High	Improbable	MEDIUM	-ve	Medium
With Mitigation	High	Possible	MEDIUM	+ve	Medium

## CUMULATIVE IMPACTS

There has been a recent increase in applications for prospecting and exploration rights along the west coast and increased prospecting/survey activity in the short term and marine mining in the long-term is anticipated. This means that cumulative impacts of marine prospecting and mining should be considered at a broader spatial scale in a strategic manner.

The value and significance of heritage resources is a highly emotive and subjective field. Certain sites are deemed significant due to their age, or the activity they were engaged in at the time of the event, these include slave and war ships, others may be unique in respect of their construction and rarity in the archaeological record. Some wrecks are not unique or even very old but may have spiritual significance to a local fishing community due to fatalities at the time of wrecking. One must be careful not to project one's own values and belief systems onto the heritage resources and think about future generations. While some wrecks are not necessarily deemed important now, destruction without due diligence can have a negative future impact.

The wreck databases are built on reported wrecks. Ergo, the confidence in the historical reporting around inhabited port areas is generally higher. The west coast's low population density means that confidence in the historical reports is lower. There are, no doubt, many unreported wrecks, particularly older ones. Shipwreck sites are not always easily located. There are generally three stages to the formation of a wreck site. The first stage, the wreck event is precipitated by environmental conditions (storms) interacting with anthropogenic factors (captain's response to the environmental challenge). The second stage is a dynamic stage where the wreck interacts with and is transformed by the environment. The third stage is where the remains are assimilated with the environment. These stages do not necessarily progress linearly, and the stages may cycle, for example a second wreck can occur on the initial wreck and the process starts again; the second and third stages may be cyclical as storms could disturb the assimilated wreck site and transform the site further. Over hundreds of years, the site can be virtually indistinguishable from the surrounding seabed or reef. With the mitigation measures mentioned within this report, and assuming a best-case scenario, wrecks should be located during prospecting phases.

It is not possible to assess cumulative impacts with any level of confidence due to the unknown nature of the heritage resources in the region. Each wreck must be assessed as it is found, and if it is treated with the knowledge that we do not always know if is significant, whether locally or internationally, we can mitigate against high, negative cumulative impacts.

## 8. RECOMMENDED MANAGEMENT MEASURES

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the proposed development can be excavated/recorded (with an approved Mitigation Permit from the MUCH Unit at SAHRA) and a management plan can be developed for future action. Those sites that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

### Objectives

- Protection of heritage sites within the project boundary against vandalism, destruction, and theft.
- The preservation and appropriate management of new discoveries in accordance with the NHRA, should these be discovered during development activities.

### The following shall apply:

- The proposed geophysical surveys should be inspected for wrecks and wreck debris. If any are noted or suspected, these images should be shared with the heritage practitioner for evaluation and assessment against the database.
- The Environmental Control Officer should be given a short induction, by the heritage practitioners, on archaeological site and artefact recognition.
- The contractors and workers should be notified that archaeological sites might be exposed during the prospecting activities.
- Should any heritage artefacts be exposed during prospecting, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;

- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological, or palaeontological artefacts, as set out in the NHRA (Act No. 25 of 1999), Section 51. (1).

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SAN Chart 117



**APPENDIX I: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON HERITAGE RESOURCES****Significance**

According to the NHRA, Section 2(vi) the **significance** of heritage sites and artefacts is determined by its aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

**1. Historic value**

- Is it important in the community, or pattern of history
- Does it have strong or special association with the life or work of a person, group or organisation of importance in history
- Does it have significance relating to the history of slavery

**2. Aesthetic value**

- It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group

**3. Scientific value**

- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period

**4. Social value**

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

**5. Rarity**

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage

**6. Representivity**

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects
- Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class
- Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.

<b>7. Sphere of Significance</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>
International			
National			
Provincial			
Regional			
Local			
Specific community			

**8. Significance rating of feature**

1. Low
2. Medium
3. High

**Significance of impact:**

- low: where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium: where the impact could have an influence which will require modification of the project design or alternative mitigation
- high: where it would have a "no-go" implication on the project regardless of any mitigation

**Certainty of prediction:**

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Improbable: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

**Recommended management action:**

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs
- 5 = retain graves

**Legal requirements:**

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.