

(Assessment conducted under Section 38 (8) of the  
National Heritage Resources Act (No. 25 of 1999) as part of an EIA)

Prepared for



**ACO Associates cc**  
Archaeology and Heritage Specialists

Prepared by

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Fieldwork by Liesbet Schietecatte  
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**Details of the specialist**

This study has been undertaken by Tim Hart BA Hons, MA (ASAPA, APHP) of ACO Associates CC, archaeologists and heritage consultants.

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## **CURRICULUM VITAE**

**Name:** Timothy James Graham Hart

**Profession:** Archaeologist

**Date of Birth:** 20/07/60

**Parent Firm:** ACO Associates

**Position in Firm:** Director

**Years with Firm:** 9

**Years experience:** 30 years

**Nationality:** South African

**HDI Status:** n/a

**Education:** Matriculated Rondebosch Boys High, awarded degrees BA (UCT) BA Hons (UCT) MA (UCT).

**Professional Qualifications:** Principal Investigator ASAPA, member of Association of Heritage Professionals (APHP)

**Languages:** Fully literate in English, good writing skills. Conversation in Afrikaans, mediocre writing skills, good reading skills. Some knowledge of Latin.

## **KEY QUALIFICATIONS**

- Bachelor of Arts in Archaeology and Psychology
- BA Honours in archaeology
- MA in Archaeology
- Recipient of Frank Schwietzer Memorial Prize (UCT) for student excellence
- Professional member (no 50) Association of Southern African Professional Archaeologists (ASAPA)
- Principal Investigator, cultural resources management section (ASAPA)
- Professional member in specialist and generalist categories Association of Heritage Professionals (APHP)
- Committee Member Heritage Western Cape, Committee Member SAHRA
- Awarded Department of Arts and Culture and Sport award for best heritage study in 2014,

## **Some recent Project Experience with respect to large projects:**

- Specialist Specialist consultant – Eskom's Kudu Integration project (identifying transmission line routes across Namaqualand)

- Specialist consultant – Eskom's Atantis Open Cycle Gas Turbine project, upgrade and power lines
- Specialist consultant – Eskom's Mossel Bay Open Cycle Gas Turbine project, substations and power lines
- Specialist consultant – Eskoms proposed Omega sub-station
- Specialist consultant – Eskoms Nuclear 1 programme
- Specialist consultant – Eskoms PBMR programme
- Specialist consultant – Department of Water Affairs raising of Clanwilliam Dam project
- Specialist consultant to De Beers Namaqualand Mines (multiple projects since 1995)
- Specialist consultant – Saldanha Ore Handling Facility phase 2 upgrade
- Three years of involvement in Late Stone Age projects in the Central Great Karoo
- Wind Energy systems: Koekenaap, Hopefield, Darling, Vredendal, Bedford, Sutherland, Caledon
- Specialist consultant – Eskom nuclear 1
- Bantamsklip Nuclear 1 TX lines
- Koeberg Nuclear 1 TX lines
- Karoo uranium prospecting various sites
- HIA Houses of Parliament
- Proposed Ibhubesi gas project, West Coast of South Africa.

## **Experience**

After graduating from UCT with my honours degree I joined the Southern Methodist University (SMU Dallas Texas) team undertaking Stone Age research in the Great Karoo. After working in the field for a year I registered for a Masters degree in pre-colonial archaeology at UCT with support from SMU. On completion of this degree in 1987 I commenced working for the ACO when it was based at UCT. This was the first unit of its kind in RSA.

In 1991 I took over management of the unit with David Halkett. We nursed the office through new legislation and were involved in setting up the professional association and assisting SAHRA with compiling regulations. The office developed a reputation for excellence in field skills with the result that ACO was contracted to provide field services for a number of research organisations, both local and international. Since 1987 in professional practise I have has been involved in a wide range of heritage related projects ranging from excavation of fossil and Stone Age sites to the conservation of historic buildings, places and industrial structures. To date the ACO Associates CC (of which I am co-director) has completed more than 1500 projects throughout the country ranging from minor assessments to participating as a specialist in a number of substantial EIA's as well as international research projects. Some of these projects are of more than 4 years duration

Together with my colleague Dave Halkett, I have been involved in heritage policy development, development of the CRM profession, the establishment of 2 professional bodies and development of professional practice standards. Notable projects I have been involved with are the development of a heritage management plan and ongoing annual mitigation for the De Beers Namaqualand Mines Division, heritage management for Namakwa Sands and other west coast and Northern Cape mining firms. Locally, I was responsible for the discovery of the "Battery Chavonnes" at the V&A Waterfront (now a conserved as a museum – venue for Da Vinci exhibition), the discovery of a massive paupers burial ground in Green Point (now with museum and memorial), the fossil deposit which is now the subject of a public display at the West Coast Fossil Park National Heritage Site as well as participating in the development of the Robben Island Museum World Heritage Site. I have teaching experience within a university setting and have given many public lectures on archaeology and general heritage related matters. I am presently running a NLF funded project to research the historic burial grounds of Green Point.

## **Academic Publications**

Hart, T.J.G. 1987. Porterville survey. In Parkington, J & Hall, M.J. eds. Papers in the Prehistory of the Western Cape, South Africa. Oxford: BAR International Series 332.

- Sampson, C.G., Hart, T.J.G., Wallsmith, D.L. & Blagg, J.D. 1988. The Ceramic sequence in the upper Sea Cow Valley: Problems and implications. *South African Archaeological Bulletin* 149: 3-16.
- Plug, I. Bollong, C.A., Hart, T.J.G. & Sampson, C.G. 1994. Context and direct dating of pre-European livestock in the Upper Seacow River Valley. *Annals of the South African Museum, Cape Town*.
- Hart, T. & Halkett, D. 1994. Reports compiled by the Archaeology Contracts Office, University of Cape Town. Crossmend, HARG. University of Cape Town.
- Hart, T. & Halkett, D. 1994. The end of a legend? Crossmend, HARG. University of Cape Town.
- Hart, T. 2000. The Chavonnes Battery. *Aquapolis. Quarterly of the International Center for Cities on Water*. 3-4 2000.
- Hine, P, Sealy, J, Halkett, D and Hart, T. 2010. Antiquity of stone walled fish traps on the Cape Coast of South Africa. *The South African Archaeological Bulletin*. Vol. 65, No. 191 (JUNE 2010), pp. 35-44
- Klein, R.G., Avery, G., Cruz-Urbe, K., Halkett, D., Hart, T., Milo, R.G., Volman, T.P. 1999. Duinefontein 2: An Acheulean Site in the Western Cape Province of South Africa. *Journal of Human Evolution* 37, 153-190.
- Klein, R.G., Cruz-Urbe, K., Halkett, D., Hart, T., Parkington, J.E. 1999. Paleoenvironmental and human behavioral implications of the Boegoeberg 1 late Pleistocene hyena den, northern Cape province, South Africa. *Quaternary Research* 52, 393-403.
- Malan, A. Halkett, D. Hart, T and Schietecatte E. 2017. *Grave Encounters: The history of Green Points burial grounds*. Southern Cross publishing.
- Smith, A., Halkett, D., Hart, T. & Mütti, B. 2001. Spatial patterning, cultural identity and site integrity on open sites: evidence from Bloeddrift 23, a pre-colonial herder camp in the Richtersveld, Northern Cape Province, South Africa. *South African Archaeological Bulletin* 56 (173&174): 23-33.
- Smith, A., Halkett, D., Hart, T. & Mütti, B. 2001. Spatial patterning, cultural identity and site integrity on open sites: evidence from Bloeddrift 23, a pre-colonial herder camp in the Richtersveld, Northern Cape Province, South Africa. *South African Archaeological Bulletin* 56 (173&174): 23-33.
- Halkett, D., Hart, T., Yates, R., Volman, T.P., Parkington, J.E., Klein, R.J., Cruz-Urbe, K. & Avery, G. 2003. First excavation of intact Middle Stone Age layers at Ysterfontein, western Cape province, South Africa: implications for Middle Stone Age ecology. *Journal of Archaeological Science*

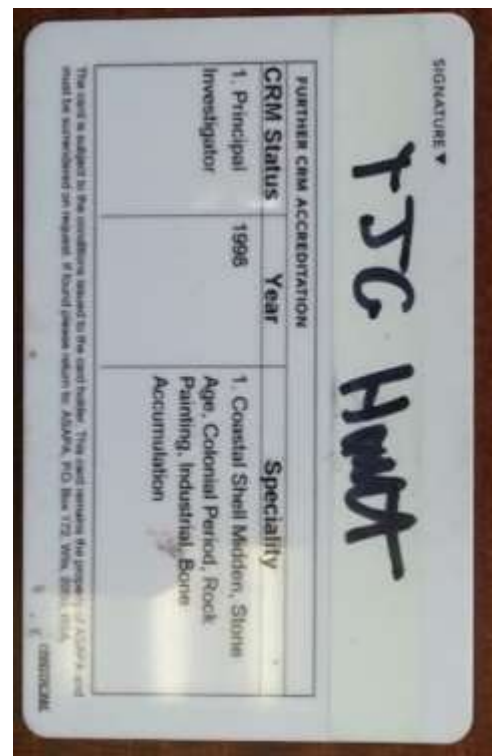
Cruz-Urbe, K., Klein, R.G., Avery, G., Avery, D.M., Halkett, D., Hart, T., Milo, R.G., Sampson, C.G. & Volman, T.P. 2003. Excavation of buried late Acheulean (mid- quaternary) land surfaces at Duinefontein 2, western Cape province, South Africa. Journal of Archaeological Science 30.

Parkington, JE. Poggenpoel, C. Halkett, D. & Hart, T. 2004 Initial observations from the Middle Stone Age coastal settlement in the Western Cape In Conard, N. Eds. Settlement dynamics of the Middle Paleolithic and Middle Stone Age. Tubingen: Kerns Verlag.

Orton, J. Hart, T. Halkett, D. 2005. Shell middens in Namaqualand: two later Stone Age sites at Rooiwalbaai, Northern Cape Province, South Africa. South African Archaeological Bulletin. Volume 60 No 181

G Dewar, D Halkett, T Hart, J Orton, J Sealy, 2006. Implications of a mass kill site of springbok (*Antidorcas marsupialis*) in South Africa: hunting practices, gender relations, and sharing in the Later Stone Age .Journal of Archaeological Science 33 (9), 1266-127

Finnegan, E. Hart, T and Halkett, D. 2011. The informal burial ground at Prestwich Street, Cape Town: Cultural and chronological indicators for the informal Cape underclass. The South African Archaeological Bulletin Vol. 66, No. 194 (DECEMBER 2011), pp. 136-148



## **Declaration of independence**

### **PROJECT:**

I, **Tim Hart**, as the appointed independent specialist hereby declare that I acted as the independent specialist in this application; and that I

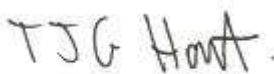
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;



- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

**Note:** The terms of reference must be attached.

**Signature of the specialist:**



**Name of company:**

ACO Associates cc

**Date: 27 July 2017**

**GLOSSARY**

**Archaeology:** *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.*

**Cultural landscape:** *The combined works of people and natural processes as manifested in the form of a landscape*

**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.*

**National Estate:** *The collective heritage assets of the Nation*

**SAHRA:** *South African Heritage Resources Agency – the compliance authority which protects national heritage.*

**Structure (historic:)** *Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.*

## **Acronyms**

DEAT	Department of Environmental Affairs and Tourism
ESA	Early Stone Age
GPS	Global Positioning System
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency
WEF	Wind Energy Facility
PV	Photo-voltaic (solar) array

## **1 Introduction**

ACO Associates CC was appointed by Pieter Badenhorst (PBPS – Environmental and Water License Consultants) to conduct an archaeological impact assessment of proposed activities at Struisbaai Harbour, Struisbaai, Western Cape. The pages that follow contain the findings of a survey of the project area as well as a discussion on the potential impacts to maritime archaeology.

### **1.1 The proposed activity**

The application is for the repair and maintenance work to existing harbour infrastructure, dredging of sand in the harbour basin and the development of an access road (approximately 7m wide and 105 m in length) through an area containing indigenous vegetation with a development footprint of approximately 735m<sup>2</sup>.

#### **Repairs**

The proposed activities, which are repairs to jetties and revetments, are all maintenance and repair work within the existing footprint and will not increase the development footprint of the existing harbour. The existing harbour was built in 1959 according to local sources (<http://www.struisbaai-info.co.za/town>), and expanded in 1990. In terms of the National Heritage Resources Act 25 of 2000, the harbour is not yet 60 years of age and therefore not yet generally protected.

#### **Dredging**

Siltation of the harbour has taken place which means that a significant volume of sand needs to be dredged and disposed of. The proposed depth of dredging is in the order of 1-2m which is needed to bring the harbour to serviceable condition. It is envisaged that the sand will be transported to the beach immediately to the south of the break water. The method of dredging has not yet been finalised, however it must be noted that the bulk of sediments that is to be removed has built up over the years since the harbour has been built. There is no intention to expand or deepen the harbour beyond original specification.

#### **Disposal of dredged material**

It is intended that dredged sand will be transported by truck to the beach to the south of the breakwater. The material can be put to use to build up the beach for recreational purposes.

Two alternative roads are suggested for conveyance of the sand.

The preferred alternative A is the construction of a short 105 m long road from the harbour to behind the breakwater onto the beach. The short distance is less than 300 m which does not trigger the National Heritage Resources Act.



The second alternative B is the construction of a longer road (250 m) in the area of the existing pedestrian route. This is not favoured as it will affect indigenous vegetation.



## 1.2 Heritage legislation

The basis for all Heritage Impact Assessments (HIA) is the National Heritage Resources Act, No 25 of 1999 (NHRA), which in turn prescribes the manner in which heritage is assessed and managed. The NHRA has defined certain kinds of heritage as being worthy of protection, by either specific or general protection mechanisms. In South Africa the law is directed towards the protection of human made heritage, although places and objects of scientific importance are covered. The National Heritage Resources Act also protects intangible heritage such as traditional activities, oral histories, and places where significant events happened. Generally protected heritage, which must be considered in any heritage assessment, includes:

- any place of cultural significance (described below);
- buildings and structures (greater than 60 years of age);
- archaeological sites (greater than 100 years of age);
- palaeontological sites and specimens;
- shipwrecks and aircraft wrecks;
- graves and grave yards.

Section 38 of the NHRA stipulates that HIAs are required for certain kinds of development such as the rezoning of land greater than 10 000 m<sup>2</sup> in extent or exceeding 3 or more sub-divisions, linear developments in excess of 300 m or for any activity that will alter the character or landscape of a site greater than 5000 m<sup>2</sup>. 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, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m 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 sqm 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.

### 1.3 Cultural Landscapes (places of cultural significance)

Section 3(3) of the NHRA, No 25 of 1999 defines the cultural significance of a place or objects with regard to the following criteria:

- (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; and
- (i) sites of significance relating to the history of slavery in South Africa.

#### 1.4 Scenic Routes

While not specifically mentioned in the NHRA, No 25 of 1999, Scenic Routes are recognised as a category of heritage resources. Baumann & Winter (2005) recommend that the visual intrusion of development on a scenic route should be considered a heritage issue.

#### 1.5 Heritage Grading

A key tool in the assessment of heritage resources is the heritage grading system which uses standard criteria. In the context of an EIA process, heritage resources are graded following the system established by Winter & Baumann (2005) in the guidelines for involving heritage practitioners in EIA's (Table 1). The system is also used internally by Heritage Authorities around the country for guiding decisions about the future of heritage places, buildings and artefacts.<sup>1</sup> The website of Heritage Western Cape provides a useful guide to grading which is nationally used.<sup>2</sup>

Heritage specialists use the grading system to express the relative significance of a heritage resource. This is known as a field grading or a recommended grading. Official grading is done by a special committee of the relevant heritage authority; however heritage authorities rely extensively on field grading offered by consultants to inform decision making.

Table 1. Grading of Heritage Resources (Source: Winter & Baumann 2005)

<b>Grade</b>	<b>Level of significance</b>	<b>Description</b>
1	National	Of high intrinsic, associational and contextual heritage value within a national context, i.e. formally declared or potential Grade 1 heritage resources.
2	Provincial	Of high intrinsic, associational and contextual heritage value within a provincial context, i.e. formally declared or potential

<sup>1</sup> [http://www.westerncape.gov.za/other/2012/9/grading\\_guide\\_&\\_policy\\_version\\_5\\_app\\_30\\_May\\_2012.pdf](http://www.westerncape.gov.za/other/2012/9/grading_guide_&_policy_version_5_app_30_May_2012.pdf)

<sup>2</sup> <http://www.westerncape.gov.za/public-entity/heritage-western-cape>

		Grade 2 heritage resources.
3A	Local	Of high intrinsic, associational and contextual heritage value within a local context, i.e. formally declared or potential Grade 3A heritage resources.
3B	Local	Of moderate to high intrinsic, associational and contextual value within a local context, i.e. potential Grade 3B heritage resources.
3C	Local	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context, i.e. potential Grade 3C heritage resources.

## 2 Method

The study area was visited by ACO Associates for in July 2017. The fieldwork was carried out by Tim Hart (MA), Liesbet Schietecatte MA, MSC) and assisted by Natalie Kendrick (MSC candidate). The site was visited at spring low tide and the proposed road alternatives walked. The rocky shoreline was inspected at low tide for signs of any tidal fish traps that may be affected by the proposal. Information of the likelihood of shipwreck material occurring in the harbour area was solicited from John Gribble (SAHRA) and Jaco Boshoff (Iziko Museums). The harbour was not dive surveyed or subjected to remote sensing.

### 2.1.1 Restrictions

No restrictions were encountered.

## 3 Receiving environment

Struisbaai harbour is a small but important line fishing harbour that contains moorings for fishing boats, slipways and launch facilities for ski boats, recreational craft. There is a large parking area, harbour office and small restaurants which form a recreational hub in the area. The harbour is set within a natural bay in a generally rocky shoreline, the entire complex protected by a single large breakwater on the eastern side.

The beach area where it is proposed that the sand be disposed of, is largely anthropomorphic in that it consists of sands that have built up against the western side of the breakwater which has formed a small vegetated dune field. It is quite likely that dredged sand was deposited here when the harbour was first built. This area has rehabilitated quite well forming a good recreational beach while a wooden pedestrian walkway provides an easy walk along the coast through indigenous vegetation.



**Figure 1 An 1890 map**

### 3.1 Archaeological background of the broader study area

The first formal research into the prehistory of the southern Cape was that published by Professor John Goodwin in 1946. This research did not involve any excavations of archaeological sites on the southern coast but was based upon a series of observations of *viswywers* (tidal fish traps) that had been built by prehistoric people - possibly the same people responsible for the accumulation of shell middens that contained numerous fish bones and fragments of pottery. Goodwin stressed the need for the archaeological investigation of sites that could provide evidence linking the contents of shell middens and the *viswywers*.

It was not until the 1970's that research by archaeologists of the South African Museum provided further insight into the prehistory of the southern Cape to the west of Cape Agulhas. Excavations by F.R. Schweitzer (1979) at Die Kelders cave near Gansbaai produced early evidence (1600 years ago) for the introduction of pottery technology and domestic stock into the Cape as well as a MSA (Middle Stone Age) occupation over 40 000 years old. More recently accelerator radio carbon dates have indicated that the Die Kelders material is nearly 2000 years old. Other excavations were carried out by the South African Museum at Byneskranskop 1 (Schweitzer and Wilson 1982) and again revealed a sequence of occupation extending back several thousand years. Excavations of shell middens in the Pearly Beach area by Graham Avery (1974,1976) showed that the remains of early domestic sheep were to be found in some of the coastal middens as



well. He suggested that the *viswywers* of this area were probably built by the same people (Khoekhoen herders) who were responsible for accumulating the shell middens.

It is now broadly accepted by archaeologists that shortly after 2000 years ago, a new economic system was introduced to Southern Africa - namely certain groups of people adopted transhumant pastoralism (in this case with herds of fat-tailed sheep and later cattle) instead of hunting and gathering which was universally practiced in South Africa before this time. The origin of early stock keeping in Africa is still unknown.

In 1984 an area just to the west of Struisbaai was the focus of a study by archaeologists from the South African Museum and the University of Cape Town (Hall 1984). They were interested in the way in which prehistoric people were using the different kinds of environments represented in this area. The focus of this research was an area very similar in morphology to the site currently under investigation in this report in that it involved a shoreline, coastal dunes and flat coastal plains. An exhaustive survey of this area showed that the majority of archaeological sites were located directly on the shoreline, or on the edge of the inland dune field where large dunes overlook the coastal plain. The coastal plain itself was relatively devoid of archaeological material and was clearly not a popular area for Stone Age communities. The study showed that the dunefield had been favoured for occupation over the last 4000-6000`years by both earlier hunting and gathering people and possibly pastoralists later on. Further research undertaken in recent years has confirmed that prominent coastal dune systems were important settlement areas during the late Holocene (up to 5000 years ago). Prehistoric people were selecting deflation bays and inland edges of the dunefields for encampments as this provided a good location from which to exploit the seasonal water and good grazing found on the coastal plain, or the marine resources of the nearby shore. Recent work by various consulting archaeologists (ACO and ACRM) resulted in more sites being recorded, however the basic settlement pattern appears to be consistent.

### 3.2 *Viswywers* (tidal fish traps)

Fishing by means of the construction of tidal "dams" is used throughout the world - the materials from which the traps are built varies from place to place, however the basic principle is the same, namely the creation of tidal dams that result in the confinement of fish to an area where they can be easily collected or speared. The method is still used in Northern Natal (reed weirs and dams), similar traps were even used in the great intertidal zones of European rivers in the first millennium AD (L. Schietecatte pers comm). Stone tidal fish traps have been recorded along the southern Cape Coast, Cape Peninsula and recently at the mouth of the Berg River on the West Coast. No traps have been located along the north west coast. Avery (1974) has observed that tidal fish traps in the southern Cape were used in areas with specific characteristics: ie places where the gradient gave rise large intertidal zones where there were ample moveable boulders and rocks, shallow sheltered conditions allowed people to create gullies and dams. Avery's

research provided solid evidence that the traps were successfully used and maintained by communities at Elim into the 20th century. Although Avery's work is well researched and detailed, he was never able to answer the question of how long were fish traps in use in the Southern Cape. He hypothesized that the traps had their origin in pre-colonial times being used by Khoehoen herding communities who harvested the traps at favourable times of the year on their seasonal herding cycles. While this is a plausible hypothesis, in reality the age of use of fish traps and their association with pre-colonial herding peoples has never been rigorously scientifically tested. Recent work by Hine et al (2010) investigated a number of shell middens at nearby Vywerbaai which area spatially associated with fish traps. The middens contained very few fish bones indicating that a relationship between the fish traps and these archaeological sites was unlikely. Hine et al (2010) conducted archival research that indicated a relationship between fish traps, local farmers and mission communities which lead him to suggest an alternative hypothesis that such traps were historical in origin.

### 3.3 Historic period

Early settlement of the area was confined to "Stryksbaai" where there was a good anchorage and a beach from which fishing boats could be launched. Notable are the vernacular 19<sup>th</sup> century houses at *Hotagterklip* (Hart and Halkett 1996) which were among the earliest in the area. Apart from the historic lighthouse, L'Agulhas was not developed until the mid-late 20<sup>th</sup> century.

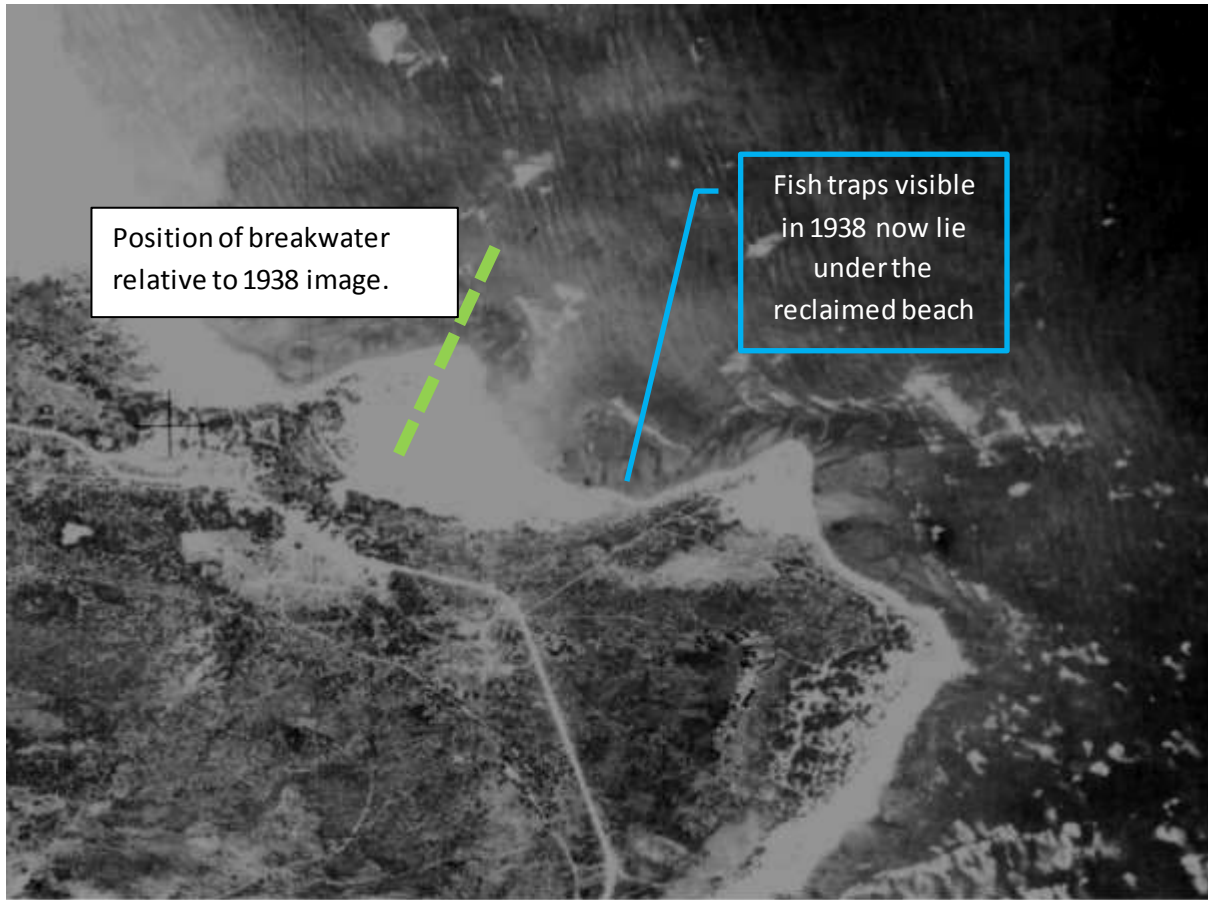
Cape Agulhas has been the scene of many shipwrecks and maritime disasters. There are shipwrecks offshore at Struisbaai and evidence of wreck sites under beach sand between Die Mond and Struisbaai (Boshoff pers comm). These range from Portuguese vessels, slavers, Dutch and English East Indiamen to more recent vessels of the 19<sup>th</sup> and 20<sup>th</sup> centuries. Very often the location of wrecks is often speculative until such time the ship is identified through field survey and archival research.

## 4 Archaeological heritage indicators

The heritage concerns within the project area are:

- 1) The possibility that building up the beach (beach nutrition) will inundate stone wall fish traps in the boulder bed area to the east of the harbour adjacent to the beach. Tidal fish traps are considered grade 1 heritage with declarations in place at Stillbaai and declaration of the Agulhas fish traps pending (Gribble pers comm).
- 2) The dredging of the harbour may impact shipwreck material. This will manifest itself as fragments of wood and debris in the dredging tailings.

An inspection of the boulder bed at spring low tide produced no immediate evidence of stone wall fish traps close to the harbour. There are however some significant complexes of these towards St Mungo Bay and onwards into the Agulhas National Park. Noted however were two open areas in



the beds that may once have been tidal fish traps, however there was no evidence of standing walling. Given the fact that there is no associated walling the heritage significance of these features is considered to be low and unworthy of grading. What is evident from a 1938 aerial photograph is the bay which now contains the harbour and the surrounds, contained a large complex of fish traps, the majority of which have been destroyed, while others *may* have survived under the reclaimed land.

An examination of aerial photographs has revealed that the amount of material dredged out of the harbour area is considerable in that the material was used to achieve significant land reclamation where the beach is to the east of the breakwater. The likelihood is that if there was any maritime material in the harbour area is very low as it is likely to have been destroyed circa 1959. The proposed dredging will only affect sediments that accumulated after this time.

The proposed haulage routes, in both cases cross land that has been reclaimed as a result of the 1959 harbour construction. This means that the likelihood of any pre-colonial archaeological material surviving in the path of the haulage routes Alternative A or Alternative B is zero. This was confirmed by visual inspection.

## **5 Assessment of impacts**

Construction of haulage roads alternatives will not impact any heritage material. In heritage terms either route is acceptable.

Impacts to shipwreck material are considered to be improbable given the amount of transformation that has occurred on the seabed of the harbour.

## **6 Recommendations**

The expected low level of impact does not justify the expense of a pre-disturbance survey of the harbour seabed, either through diving or remote sensing. It is a strong recommendation that when dredging takes place, any finds of maritime material must be immediately reported to the SAHRA maritime unit for inspection by a maritime archaeologist and further action.

In heritage terms the proposed activity is considered acceptable.

**Figure 2 The above images (1938 aerial photograph and a recent google image) indicate how the 1959 building of the harbour transformed the landscape. Dredging tailings were used to reclaim land to the east of the breakwater inundating a number of fish traps (1938 image sourced from Dept of Land Affairs, Mowbray).**

