

EGI SEA: Heritage Assessment Results

ERG Meeting

21 July 2015

ASHA CONSULTING AND CEDER
TOWER SERVICES



Background to Heritage Assessment



- EGI developments have the potential to impact on heritage resources either through physical disturbance during construction or by changing the wider landscape context;
- It is therefore important to ensure that EGI is sited and constructed in a manner that minimises the impact on heritage resources;
- The potential physical impacts are greatly dependent on the micro-siting of infrastructure.
- It is possible to identify and protect known and above ground heritage resources (e.g. cultural sites and historical structures);
- Challenging to assess the potential impacts on unknown and underground heritage resources (e.g. the potential presence of fossils or middens);
- Study investigates heritage resources in two categories namely: 1) palaeontological 2) other heritage resources;
- Palaeontological sensitivities determined through review of previous assessments and inferred by underlying geology (fossiliferous rock);
- Other heritage sensitivities determined through review of historical assessments mainly.

Data Sources



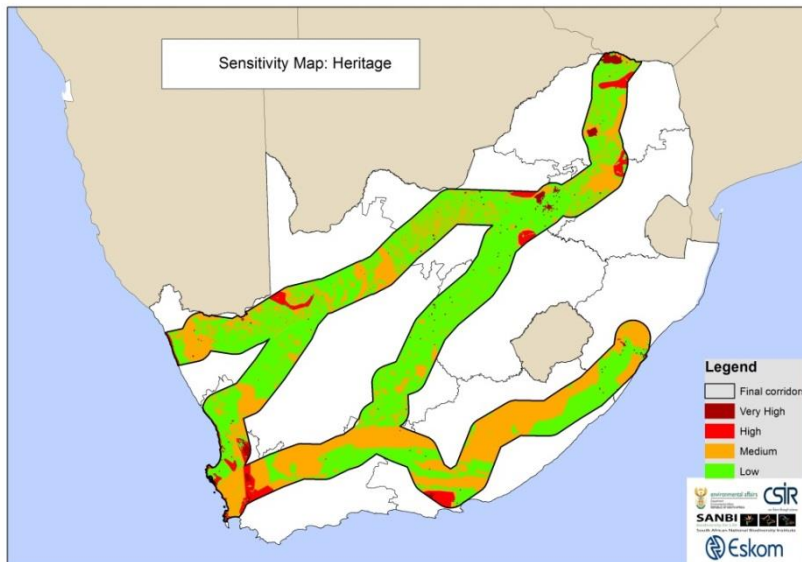
- The main source of information was the data related to sites and Heritage Impact Assessments recorded on SAHRIS (South African Heritage Resources Information System)
 - sites identified during research curated by the University of Cape Town and the KwaZulu-Natal Museum
 - all permit applications submitted to SAHRA after 2003
 - all heritage cases and heritage reports (including Heritage Impact Assessments) submitted to the South African Heritage Resources Agency from 1990 to the present, to Heritage Western Cape from 2004 to 2009, to Amafa KwaZulu-Natal from 2012 to the present and most cases for the Eastern Cape Provincial Heritage Resources Authority from 2011 to the present

Heritage (other) Methodology



- Heritage Sensitivity Map
 - Survey coverage of heritage resources in South Africa very limited
 - Not possible to exclude the occurrence of heritage resources (non palaeontological) with great certainty unless previous survey work undertaken can confirm as such
 - As such, not possible to reduce assessment requirements in areas where previous assessment work not been undertaken- default requirement for Heritage Impact Assessment in non assessed areas, only where detailed assessment been done.
 - However, it is possible to anticipate where additional assessment work, time, cost (after initial HIA) may be required i.e. the likelihood of uncovering a site of high significance vs low significance.
 - Therefore heritage (other) sensitivity informed by the following layers:
 - Recognised heritage sites,
 - Specialist general knowledge
 - Natural features
 - Areas of high HIA survey coverage and confidence
 - Map does not speak to additional assessment requirements i.e. limited relationship between sensitivity and assessment requirements
 - Separate map based on coverage required for assessment requirements

Heritage (non Palaeo) Sensitivity Map



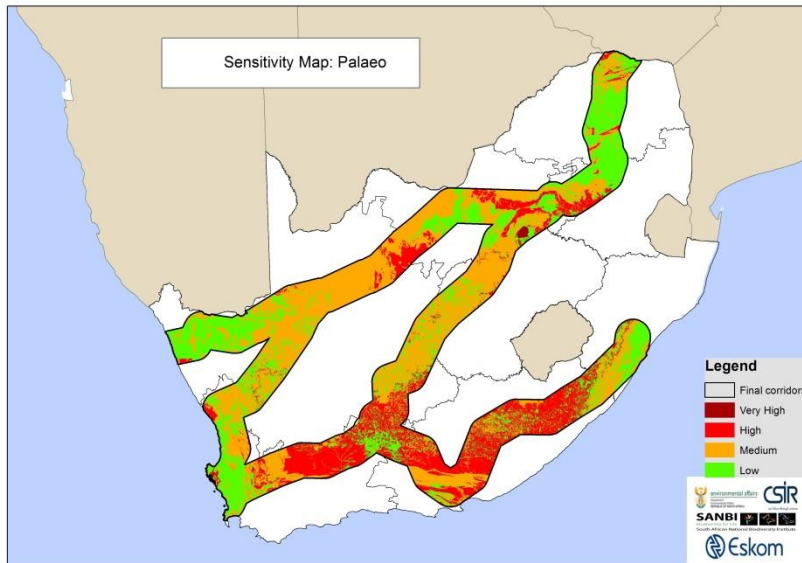
Feature
All natural heritage sites (excluding palaeontological sites) graded I and II; all National and Provincial Heritage Sites (excluding palaeontological sites) with a 1km buffer and all World Heritage Sites with their defined buffer zone.
All heritage sites (excluding palaeontological sites) graded IIIa with a 150m buffer
Coastline with 1km buffer zone
Areas identified in the specialist knowledge sensitivity mapping as having a high likelihood of containing material of high significance.
All heritage sites (excluding palaeontological sites) graded IIIb with a 50m buffer
All mountainous areas, hills and koppies indicated relative to the surrounding landscape
All rivers and pans with a 100m buffer zone
Areas identified in the specialist knowledge sensitivity mapping as having a high likelihood of containing material of medium significance.
All heritage sites (excluding palaeontological sites) graded IIIc
Previous surveys of high coverage (low sensitivity)
All remaining areas

Palaeo Sensitivity Methodology



- Palaeontological Sensitivity
 - Existing sites
 - Areas of high HIA survey coverage and confidence
 - Recoding of SAHRIS Palaeosensitivity map (from 6 levels) to four level
 - Sensitivity determined by underlying geology
 - Map does correspond to additional assessment requirements

Palaeological Sensitivity Map

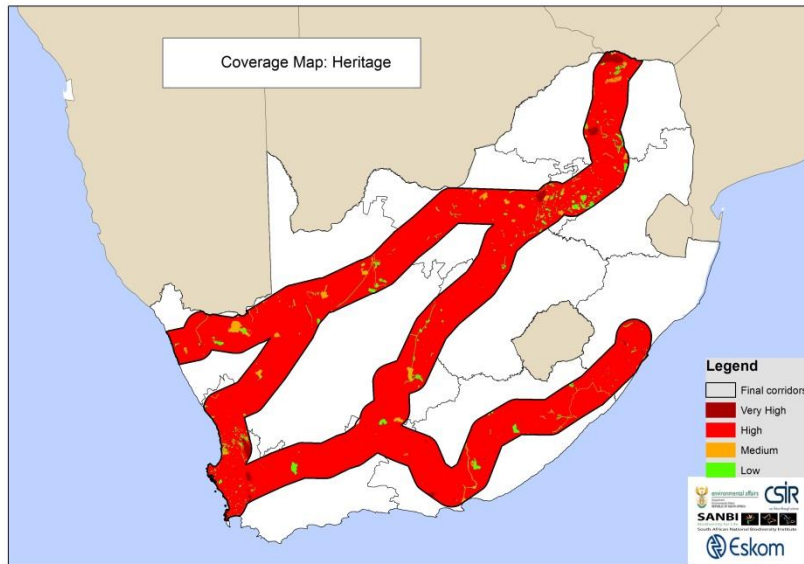


Features
All palaeontological sites graded I and II; all National and Provincial Heritage Sites with a 1km buffer and all World Heritage Sites with their defined buffer zone.
All palaeontological sites graded IIIa with a 150m buffer
Formations of very high sensitivity in the SAHRIS palaeosensitivity map
All palaeontological sites graded IIIb with a 50m buffer
Formations of high, moderate and unknown sensitivity in the SAHRIS palaeosensitivity map
All palaeontological sites graded IIIc
Previous surveys with high coverage (low sensitivity)
Formations of low or insignificant sensitivity in the SAHRIS palaeosensitivity map

Protocol: Palaeontological Assessment Requirements

Sensitivity	Feature	Requirements
Very High	All palaeontological sites graded I and II; all National and Provincial Heritage Sites with a 1km buffer and all World Heritage Sites with their defined buffer zone.	Proposed electrical infrastructure should avoid these areas. If avoidance cannot be achieved during the planning of routes an application for a permit under S. 27 of the NHRA would be required and a Heritage Impact Assessment would almost certainly be necessary.
High	All palaeontological sites graded IIIa with a 150m buffer	These heritage resources are highly significant and they should be conserved. If avoidance cannot be achieved during the planning of routes a Palaeontological Impact Assessment would almost certainly be necessary.
	Previous surveys with low coverage	Palaeontological Impact Assessment inclusive of field assessment
	Formations of very high sensitivity in the SAHRIS palaeosensitivity map	Palaeontological Impact Assessment inclusive of field assessment and/or monitoring
Medium	All palaeontological sites graded IIIb with a 50m buffer	Heritage resources of medium significance (IIIb) have been recorded and buffered. A buffer zone of at least 50m must be implemented around these sites. If avoidance is not possible, a permit will normally be required before impact and/or mitigation may occur.
	Formations of high, moderate and unknown sensitivity in the SAHRIS palaeosensitivity map	A PIA desktop would be required for formations of high, unknown and moderate sensitivity.
Low	All palaeontological sites graded IIIc	These sites have been sufficiently recorded and may be impacted upon without further requirements being implemented.
	Formations of low and insignificant sensitivity in the SAHRIS palaeosensitivity map	No further studies are necessary. A palaeo chance find procedure must be included in the EMP
	Previous surveys with high coverage + low sensitivity	No further studies are necessary. A palaeo chance find procedure must be included in the EMP

Coverage Sensitivity Mapping Outputs: Heritage



Feature
All heritage sites (excluding palaeontological sites) graded I and II; all National and Provincial Heritage Sites (excluding palaeontological sites) with 1km buffer and all World Heritage Sites with their defined buffer zone.
All heritage sites (excluding palaeontological sites) graded IIIa with a 150m buffer
Previous surveys with low coverage (high coverage sensitivity)
Base layer of unsurveyed areas
All heritage sites (excluding palaeontological sites) graded IIIb with a 50m buffer
Previous surveys with medium coverage (medium coverage sensitivity)
All heritage sites (excluding palaeontological sites) graded IIIc
Previous surveys with high coverage (low coverage sensitivity)

Protocol: Heritage (excluding Palaeo) Assessment Requirements

Sensitivity	Feature	Requirements
Very High	All heritage sites (excluding palaeontological sites) graded I and II; all National and Provincial Heritage Sites (excluding palaeontological sites) with 1km buffer and all World Heritage Sites with their defined buffer zone.	Proposed electrical infrastructure should avoid these areas. If avoidance cannot be achieved during the planning of routes an application for a permit under S. 27 of the NHRA will be required and a Heritage Impact Assessment would almost certainly be necessary.
High	All heritage sites (excluding palaeontological sites) graded IIIa with a 150m buffer	These heritage resources are highly significant and they should be conserved. Burials may be relocated if necessary, provided approval is issued by the heritage authority.
	Previous surveys with low coverage	A Heritage Impact Assessment is necessary.
	Base layer of unsurveyed areas	A Heritage Impact Assessment is necessary.
Medium	All heritage sites (excluding palaeontological sites) graded IIIb with a 50m buffer	Heritage resources of medium significance (IIIb) have been recorded and buffered. A buffer zone of at least 50m must be implemented around these sites. If avoidance is not possible, a permit would normally be required before impact and/or mitigation may occur.
	Previous surveys with medium coverage	A Heritage Impact Assessment is necessary covering certain components. The new field assessment must address any issues identified in the previous reports, such as: <ul style="list-style-type: none"> – lack of surface visibility (it may be recommended that the specialist monitors the area during vegetation clearing) – lack of expertise in the previous team – limited assessment of the area
Low	All heritage sites (excluding palaeontological sites) graded IIIc	Heritage resources of low significance (IIIc) have been recorded sufficiently. No further work is required.
	Previous surveys with high coverage + low sensitivity	The areas have already been assessed and surveyed in detail. A specialist must be consulted at the planning phases. A walk-down of the electrical infrastructure may be necessary.

Heritage Screeners

- To retain a meaningful level of detail in the assessment of heritage resources, the team divided each corridor into segments of approximately 10 000km². This allowed the specialists to provide more detailed descriptions of the heritage character of each area and to provide more specific recommendations for each segment in terms of the heritage requirements necessary for each segment.
- The segments have been coded and described in the screeners as follows:
 - Western Corridor, WC01 – WC05, 5 segments
 - Central Corridor, CC01 – CC14, 14 segments
 - Northern Corridor, NC01 – NC11, 11 segments
 - International Corridor, IC01 – IC05, 5 segments
 - Eastern Corridor, EC01 – EC10, 10 segments

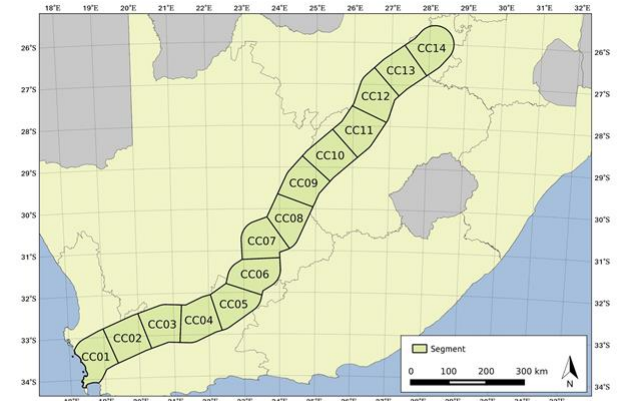


Figure 1. Study area (Central Corridor) divided in segments of circa 10000km² each.

Segment Example

HERITAGE CHARACTER

This segment includes the main metropolitan area of Cape Town. The coastline is sensitive in terms of shell middens and many more than those represented here have been recorded and studied. The urbanised areas in and around of Cape Town have hundreds of buildings which were declared as National Monuments and are now Provincial Heritage Sites. Most of the area has been affected by agricultural activities. It is expected that farmsteads and other structures older than 60 years of significance may be located in rural areas but a much higher proportion of these have already been formally proclaimed or listed than any other segment in the country.

Portions of the Cape Floral Kingdom World Heritage Site are found in this segment. These are the Cape Winelands Cultural Landscape and The Prestwich Memorial. Declared National Heritage Sites include Robben Island (also a WHS), Victor Verster Prison, Non Pareille at Daljosafat, the Houses of Parliament in Cape Town, Table Mountain and the SAS Pietermaritzburg shipwreck off the coast at Simon's Town.

The area is mostly underlain by rocks of low palaeosensitivity (e.g. Klipplaat Formation). The Soom and Disa Members of the Cederberg Formation contain highly sensitive shelly invertebrate fossil fauna, while the Langebaan Formation contains highly sensitive Quaternary fossils. Very few Palaeontological Impact Assessments have been conducted in this segment.

HERITAGE RECOMMENDATIONS

- This area provides planners with fairly reliable data in well surveyed areas. While there are no contiguously surveyed areas providing clear routes through the entire length of the segment that could negate further impact assessments, there are nodes where a desktop screening exercise would suffice in planning the routes of proposed pylons to avoid impacts on known heritage resources.
- In unsurveyed areas full Heritage Impact Assessments must be undertaken for proposed electrical infrastructure exceeding 66kV.
- In areas where concentration of sites occur with medium (IIIb) to very high (I and II) significance, realignment or specific heritage studies such as Phase 1 and/or 2 Archaeological Impact Assessments would be required.
- For power lines equal to or lower than 66kV, an HIA is not recommended since the routes of these power lines can easily be adjusted to avoid impact on sites of significance.
- It is expected that a high number of Stone Age sites are present in this segment, especially within 1km from the coastline. These will require assessment and possibly avoidance.

PALAEONTOLOGICAL RECOMMENDATIONS

- If excavations are required which will impact the Cederberg and Langebaan Formations, a Palaeontological Impact Assessment inclusive of field assessment must be undertaken before construction.
- A desktop study is required in areas of high (e.g. Nardouw Subgroup) and medium (e.g. Witzand Formation) palaeosensitivity, as well as in areas where no data exists (shaded in white on the SAHRIS palaeosensitivity map). All these will be indicated in orange on Coverage map 2 - palaeontology.
- A chance find procedure must be implemented for the other areas within this segment indicated as medium sensitivity in the coverage map (palaeontology) where a PIA Desktop will not be undertaken since they are of low palaeontological significance (e.g. Malmesbury Group). These areas will also be indicated in orange on Coverage map 2 - palaeontology.
- No palaeontological studies are required in areas of no palaeontological sensitivity shaded in green on Coverage map 2 - palaeontology.

CC
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Thank you

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