Species Environmental Assessment Guidelines

Presenter: Domitilla Raimondo (d.Raimondo@sanbi.org.za)

Moderator: Tanya Fraizer (Tanya@iaia.org)

IAIA
International Association for Impact Assessment

IAIAsa
International Association for Impact Assessment South Africa

IAIA's Webinar Series

- How are we "Doing" **Gender**? Oxfam's Gender IA Guide
- A Rapid Tour of **Emerging Technologies** and IA
- Accessing and Interpreting **Biodiversity** Information for Biodiversity Screening
- Empowering **Indigenous Voices** in Impact Assessment
- Understanding Impacts on Vulnerable Populations through **Psycho-Social** IA
- **Health** Considerations in Impact Assessment
- **Resettlement** and Impact Assessment – Points of Intersection

Visit http://ww.iaia.org/webinars.php

@IAIAnetwork ***#iaiawebinar***

IAIA
International Association for Impact Assessment

Housekeeping

- Recording? ✓
- Questions? ✓
- Slides available? ✓

IAIA
International Association for Impact Assessment

Species Environmental Assessment Guidelines

Presenter:
Domitilla Raimondo

IAIA
International Association for Impact Assessment

IAIAsa
International Association for Impact Assessment South Africa

Species Environmental Assessment Guidelines

Presented by Domitilla Raimondo SANBI – Biodiversity Assessment and Monitoring
d.Raimondo@sanbi.org.za

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

SANBI
Biodiversity for Life
South African National Biodiversity Institute

Enviro INSIGHT
environmental impact assessments

BirdLife
SOUTH AFRICA

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

SANBI
Biodiversity for Life
South African National Biodiversity Institute

BirdLife
SOUTH AFRICA

Enviro INSIGHT
environmental impact assessments

CSIR
our future through science

UNDP
Empowered lives.
Resilient nations.

gef

https://bgis.sanbi.org/

Enviro INSIGHT
environmental impact assessments

Luke Verburgt
Panel member
luke@enviro-insight.co.za

CSIR
our future through science

Abulele Adams
Panel member
aadams1@csir.co.za

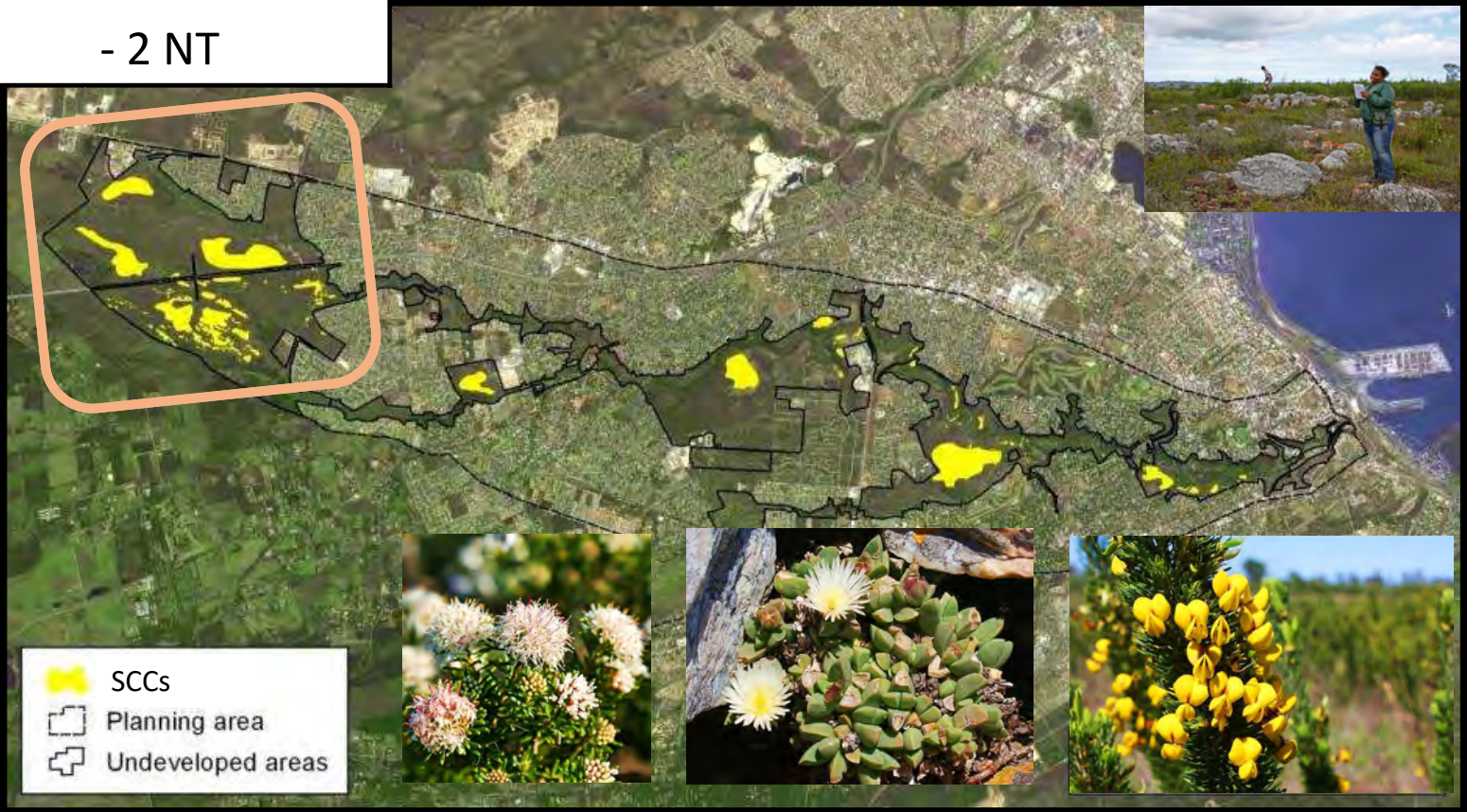
Structure of talk

- Purpose of the Species Environmental Assessment Guideline
- Introduction to the EIA Screening Tool species data
- Step by step guidance on how to implement the Animal 3c) and Plant 3d) Species Protocols
- Project Area of Influence
- Taxon specific guidance examples
- Question session 1
- Evaluation of Site Ecological Importance
- Question session 2

Barken's Valley Port Elizabeth

Total of 12 Species of Conservation Concern:

- 3 CR
- 2 EN
- 2 VU
- 2 NT



Baywest Mall

Purpose of Guideline

- **Provide step by step guidance** on how to implement the Animal 3c) and Plant 3d) Species Protocols published for comment on January 10th.
- **Provide standardised guidance** on sampling and data collection methodologies for the different taxonomic groups that are represented in the respective Protocols.
- These guidelines are intended for specialist studies undertaken for activities that have triggered a listed activity in terms of the National Environmental Management Act (No. 107 of 1998) as contained in GNR 983, 984 and 985.

STAATSKOERANT, 10 JANUARIE 2020 No. 42946 31

3. TERRESTRIAL ANIMAL SPECIES

3(c) - PROTOCOL FOR THE ASSESSMENT AND REPORTING OF ENVIRONMENTAL IMPACTS ON TERRESTRIAL ANIMAL SPECIES

1. SCOPE

This protocol provides the criteria for the assessment and reporting of impacts on terrestrial animal species for activities requiring environmental authorisation. The assessment requirements of this protocol are associated with a level of environmental sensitivity identified by the national web based environmental screening tool for terrestrial animal species, which is based on species of conservation concern as provided by the South African National Biodiversity Institute (SANBI). If any part of the proposed development falls within an area of "very high", "high" or "medium" sensitivity, the requirements prescribed for such sensitivity apply.

The national web based environmental screening tool can be accessed at: https://screening.environment.gov.za/screeningtool

2. REQUIREMENTS FOR THE INITIAL SITE SENSITIVITY VERIFICATION

Requirements for the assessment and reporting of impacts on terrestrial animal species for activities requiring environmental authorisation are set out in Table 1 below and correlate to the sensitivity ratings contained in the national web based environmental screening tool. Prior to beginning the assessment, the current use of the land and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool must be confirmed by undertaking an initial site se

2.1 The initial site sensitivity verification must be undertaken b specialist registered with the South African Council for N expertise in the relevant environmental theme being consid

2.2 The initial site sensitivity verification must be undertaken th

(a) a desk top analysis, using satellite imagery and other ava

(b) a preliminary on-site inspection to identify if there are an environmental status quo versus the environmental sen environmental screening tool, such as new developmen etc.

2.3 The outcome of the initial site sensitivity verification must be

(a) confirms or disputes the current use of the land and envi web based environmental screening tool;

(b) contains a motivation and evidence (e.g. photographs) of environmental sensitivity; and

(c) is submitted together with the relevant assessment report the Environmental Impact Assessment Regulations, as a 44 of the National Environmental Management Act, 198 (

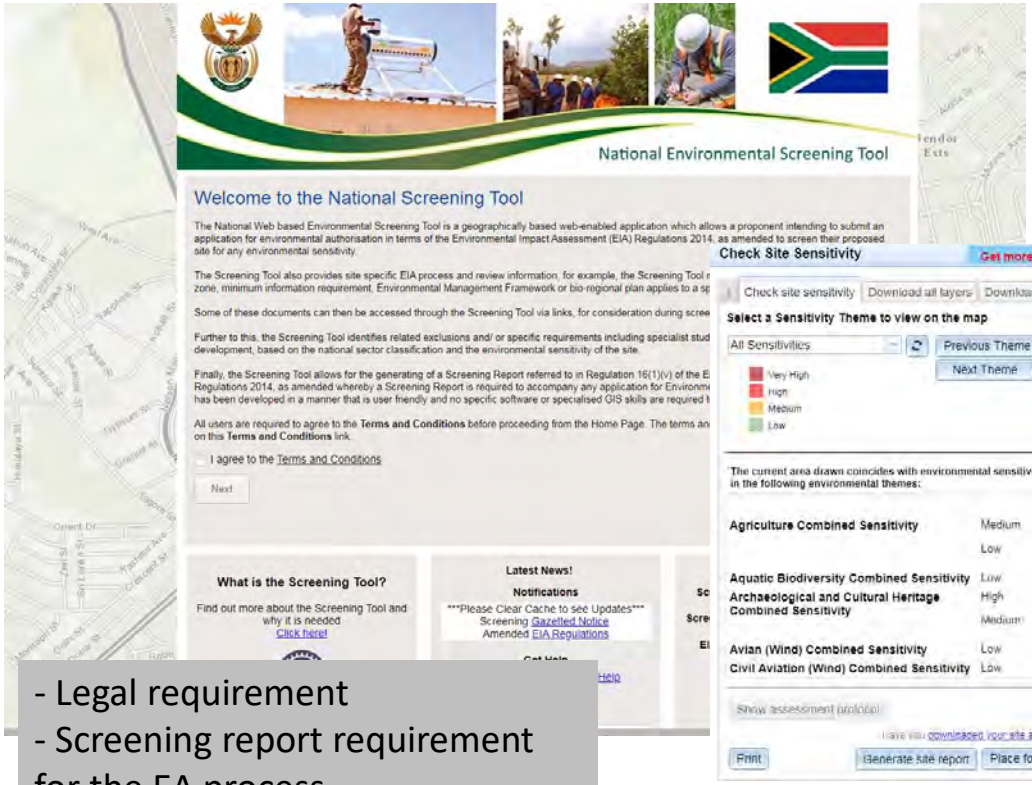
32 No. 42946 GOVERNMENT GAZETTE, 10 JANUARY 2020

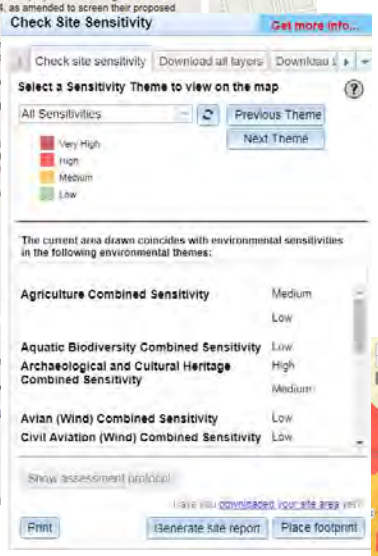
3. REQUIREMENTS FOR ENVIRONMENTAL ASSESSMENT

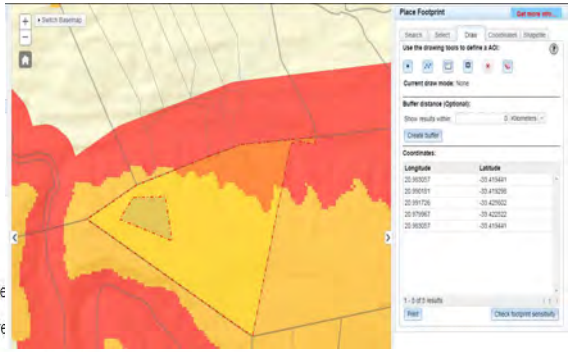
TABLE 1: CRITERIA FOR THE ASSESSMENT AND REPORTING OF IMPACTS ON TERRESTRIAL ANIMAL SPECIES FOR ACTIVITIES REQUIRING ENVIRONMENTAL AUTHORISATION	
[illegible]	**1. General Information** 1.1 An applicant, intending to undertake an activity as identified in the scope of this protocol on a site identified as being of "very high", "high" or "medium" sensitivity for terrestrial animal species on the national web based environmental screening tool must submit a Terrestrial Animal Species Impact Assessment Report. 1.2 However, where the information gathered from the initial site sensitivity verification identified in section 2 of this protocol or the specialist assessment differs from the designation of "very high", "high", or "medium" terrestrial animal species sensitivity from the national web based environmental screening tool and it is found to be of a "low" sensitivity, then a Terrestrial Animal Species Impact Assessment is not required. 1.3 Should paragraph 1.2 apply, a Terrestrial Animal Species Compliance Statement must be submitted. An environmental assessment practitioner or a suitably qualified taxon relevant specialist, registered with the South African National Council for Natural Scientific Professionals (SACNASP), must append to the Terrestrial Animal Species Compliance Statement a motivation and evidence (e.g. photographs) of the different terrestrial animal species sensitivity. **2. Terrestrial Animal Species Impact Assessment** 2.1 The assessment must be undertaken by a suitably qualified taxon relevant SACNASP registered specialist aligned with the taxa identified in the report generated from the national web based environmental screening tool on the site being submitted as the preferred development site. 2.2 The Terrestrial Animal Species Impact Assessment must include the results of a site assessment undertaken on the preferred development site. 2.3 The Terrestrial Animal Species Impact Assessment must be undertaken in accordance with the *Species Environmental Assessment Best Practice Guidelines*[3] and must identify the following: 2.3.1 The species of conservation concern which were found on site; 2.3.2 The distribution, location, viability (ability to survive and reproduce in future) and detailed description of population size of the species of conservation concern identified on the preferred development site; 2.3.3 The nature and the extent of the potential impact of the proposed development on the species of conservation concern on the proposed development site; 2.3.4 The importance of the conservation of the population of the species of special concern identified on the proposed development site based on information available in national and international databases including the IUCN Red List of Threatened Species, South African Red List of Species, and/or other relevant databases;
HIGH SENSITIVITY RATING – for terrestrial animal species 1 Confirmed habitat for species of conservation concern 2 Species of conservation concern listed on the IUCN Red List of Threatened Species or South Africa's National Red List website as Critically Endangered, Endangered or Vulnerable according the IUCN Red List 3.1. Categories and Criteria These areas are unsuitable for development due to a very likely	

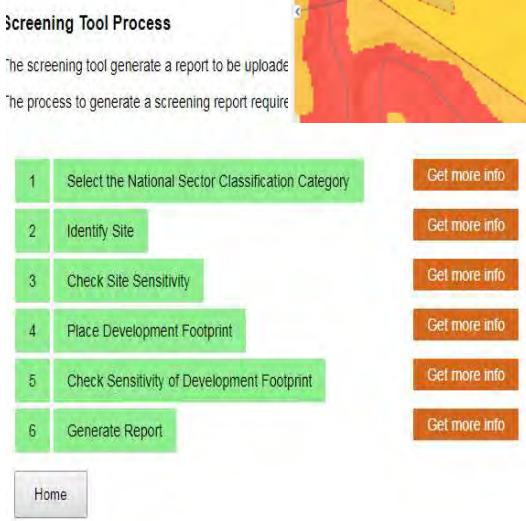
Guidelines explain how to respond to the Screening report requirements

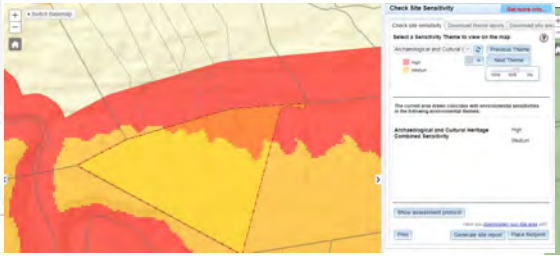
https://screening.environment.gov.za/screeningtool











- Legal requirement
- Screening report requirement for the EA process

Screening Tool Structure

Levels of Sensitivity

- Critical habitat for highly range restricted species (EOO<10 km²)
- Completely irreplaceable: no options for offsetting loss
- Threatened species/species of conservation concern confirmed present through recent records
- Habitat suitability model and/or historical records indicate that threatened species/species of conservation concern are likely to be present: must be confirmed through field surveys
- No species of conservation concern known or predicted

3(c) - PROTOCOL FOR THE ASSESSMENT OF ENVIRONMENTAL IMPACTS ON TERRESTRIAL SPECIES RESOURCES IN AREAS WITH ENVIRONMENTAL SENSITIVITY AS IDENTIFIED BY THE NATIONAL WEB-BASED ENVIRONMENTAL SCREENING TOOL

VERY HIGH SENSITIVITY RATING FOR TERRESTRIAL SPECIES RESOURCES

1. Critical Habitat for range restricted species of conservation concern that have a global **range of less than 10 km²**.

1. Species of conservation concern listed on South Africa's National Red List websites [4, 5] as Critically Endangered, Endangered or Vulnerable according the IUCN Red List 3.1. Categories and Criteria or listed as Nationally Rare.

These areas are irreplaceable in terms of species of conservation concern and unsuitable for development.

HIGH SENSITIVITY RATING FOR TERRESTRIAL SPECIES RESOURCES

1. Confirmed habitat for species of conservation concern.

2. Species of conservation concern listed on South Africa's National Red List websites [4, 5] as Critically Endangered, Endangered or Vulnerable according the IUCN Red List 3.1. Categories and Criteria.

These areas are unsuitable for development due to a very likely impact on species of conservation concern.

MEDIUM SENSITIVITY RATING FOR TERRESTRIAL SPECIES RESOURCES

1. Suspected habitat for species of conservation concern based either on there being records for this **species collected in the past prio**r to 2002 or being a natural area included in **a habitat suitability model**.
2. Species of conservation concern listed on South Africa's National Red List websites [4, 5] as Critically Endangered, Endangered or Vulnerable according the IUCN Red List 3.1. Categories and Criteria.

SACNASP registered specialist

Determine:

a. the distribution, location, viability (ability to survive and reproduce in future) and **detailed description of population size of** the species of conservation concern identified on the proposed development site and alternative sites
b. description of **the importance of the conservation of the population of the species of special concern** identified on the proposed development site and alternative sites based on information available in national and international databases including South African Red List of Species , Red List of South African Plants , IUCN Red List of Threatened Species , and/or other relevant databases;
c. description of any dynamic ecological processes that might be disrupted by the development and **resulting impact on the identified species of conservation concern**;

Etc.

LOW SENSITIVITY RATING – for terrestrial animal species

1. Areas where no natural habitat remains
2. Natural areas where there is no suspected occurrence of species of conservation concern.

1. General Information

1.1 An applicant, intending to undertake an activity as identified in the scope of this protocol, on a site identified as being of "low sensitivity" for terrestrial animal species on the national web based environmental screening tool must submit a Terrestrial Animal Species Compliance Statement, unless

1.1.1 the information gathered from the initial site sensitivity verification identified in section 2 of this protocol differs from that identified as having a "low" terrestrial animal species sensitivity by the national web based environmental screening tool and it is found to be of a "very high" "high" and/or "medium" sensitivity.

1.2 Should 1.1.1 apply, a Terrestrial Animal Species Impact Assessment is to be undertaken and a report should be prepared in accordance with the requirements of a Terrestrial Animal Impact Assessment.

2. Terrestrial Animal Species Compliance Statement

2.1 The Terrestrial Animal Species Compliance Statement must be prepared by a suitably qualified, taxon relevant SACNASP registered specialist, on the site being submitted as the preferred development site and must verify:

2.1.1 That the site is of "low" sensitivity for terrestrial animal species; and
2.1.2 Whether or not the proposed development will have any impact on the terrestrial animal species.

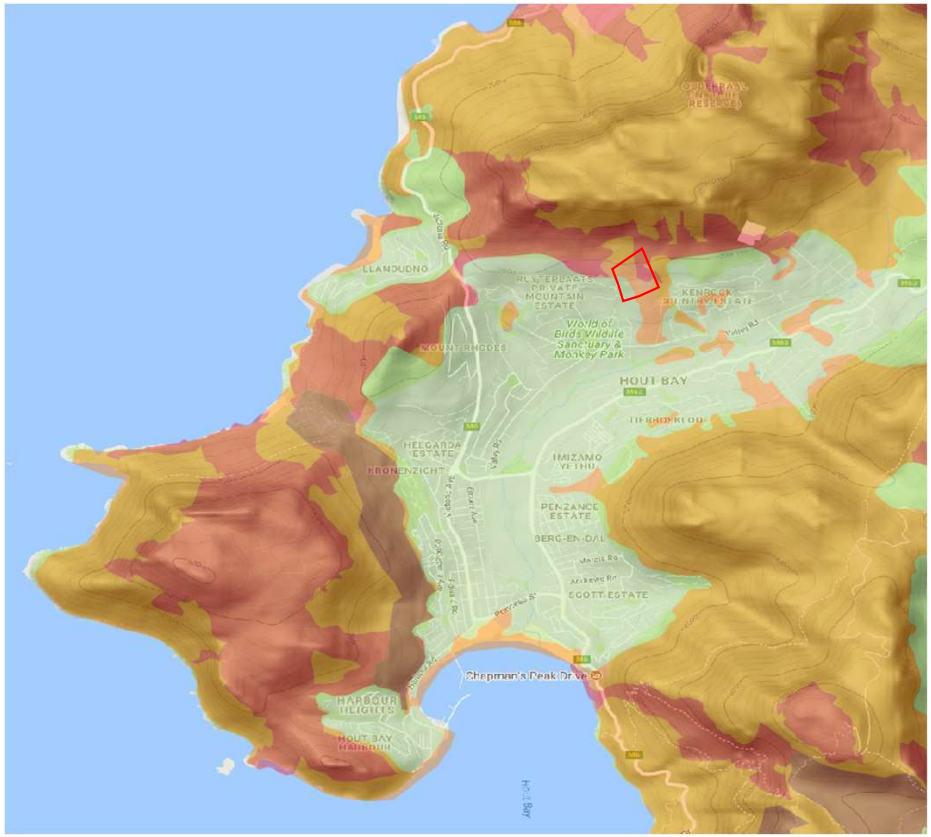
3. The Terrestrial Animal Species Compliance Statement, must contain, as a minimum, the following information:

3.1 Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise;
3.2 A signed statement of independence by the specialist;
3.3 Methodology used to undertake the site survey and prepare the compliance statement, including equipment and modelling used where relevant;
3.4 Where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr;
3.5 A description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations; and
3.6 Any conditions to which the statement is subjected.

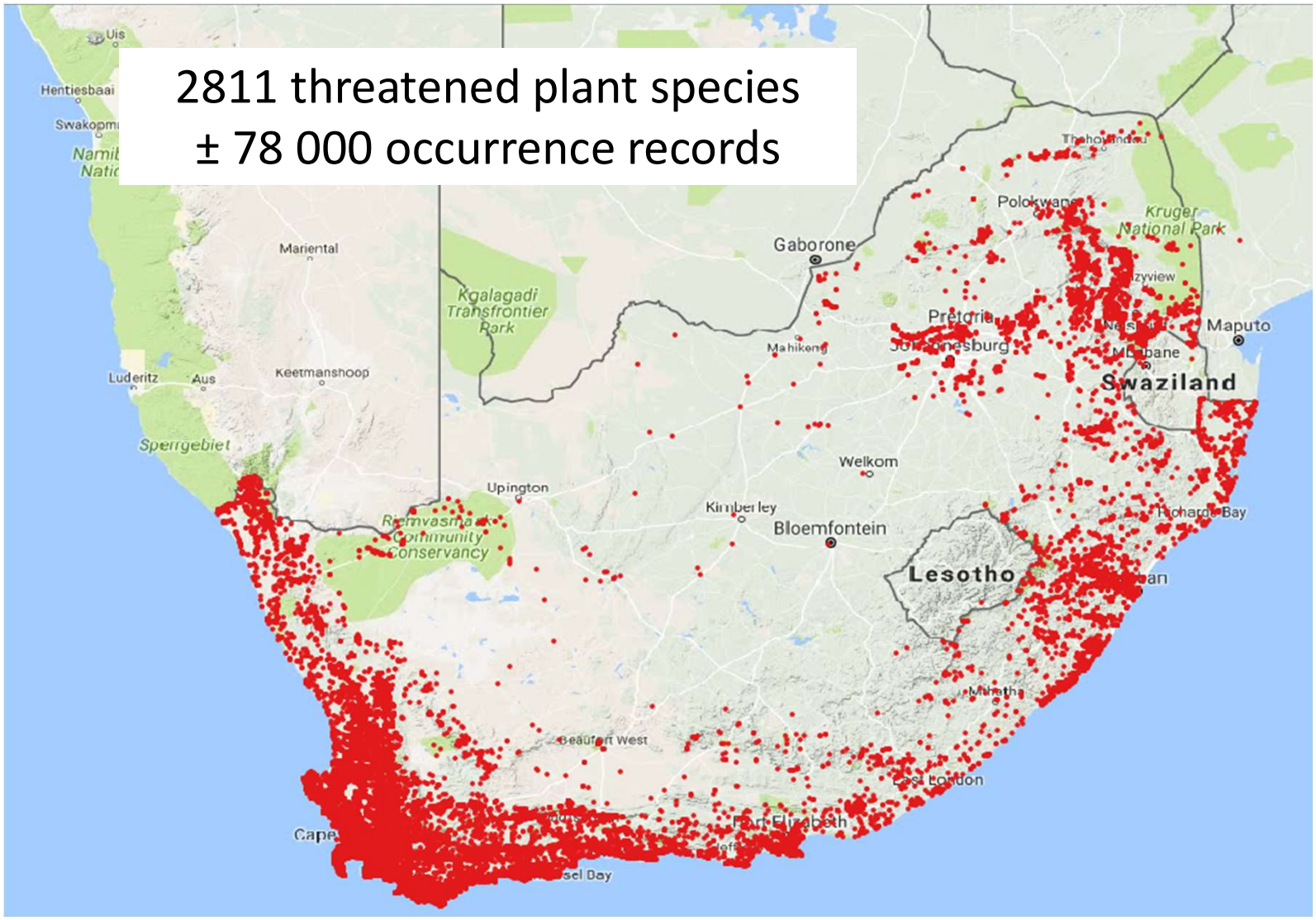
4. A signed copy of the full Terrestrial Animal Species Compliance Statement must be appended to the BAR or EIAR.

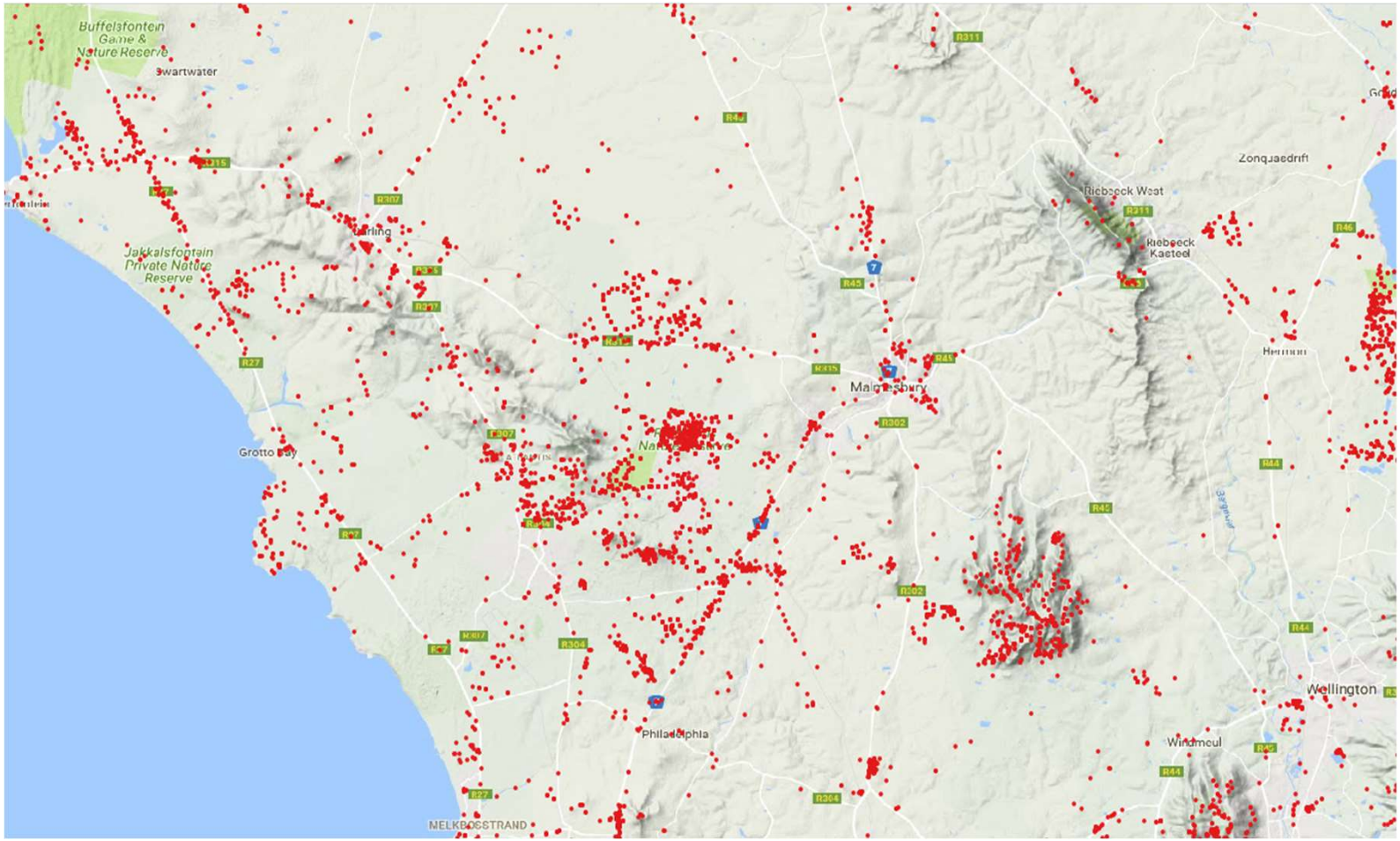
Specialist report works on species triggered by EIA Screening Tool

Plants >50 threatened plants



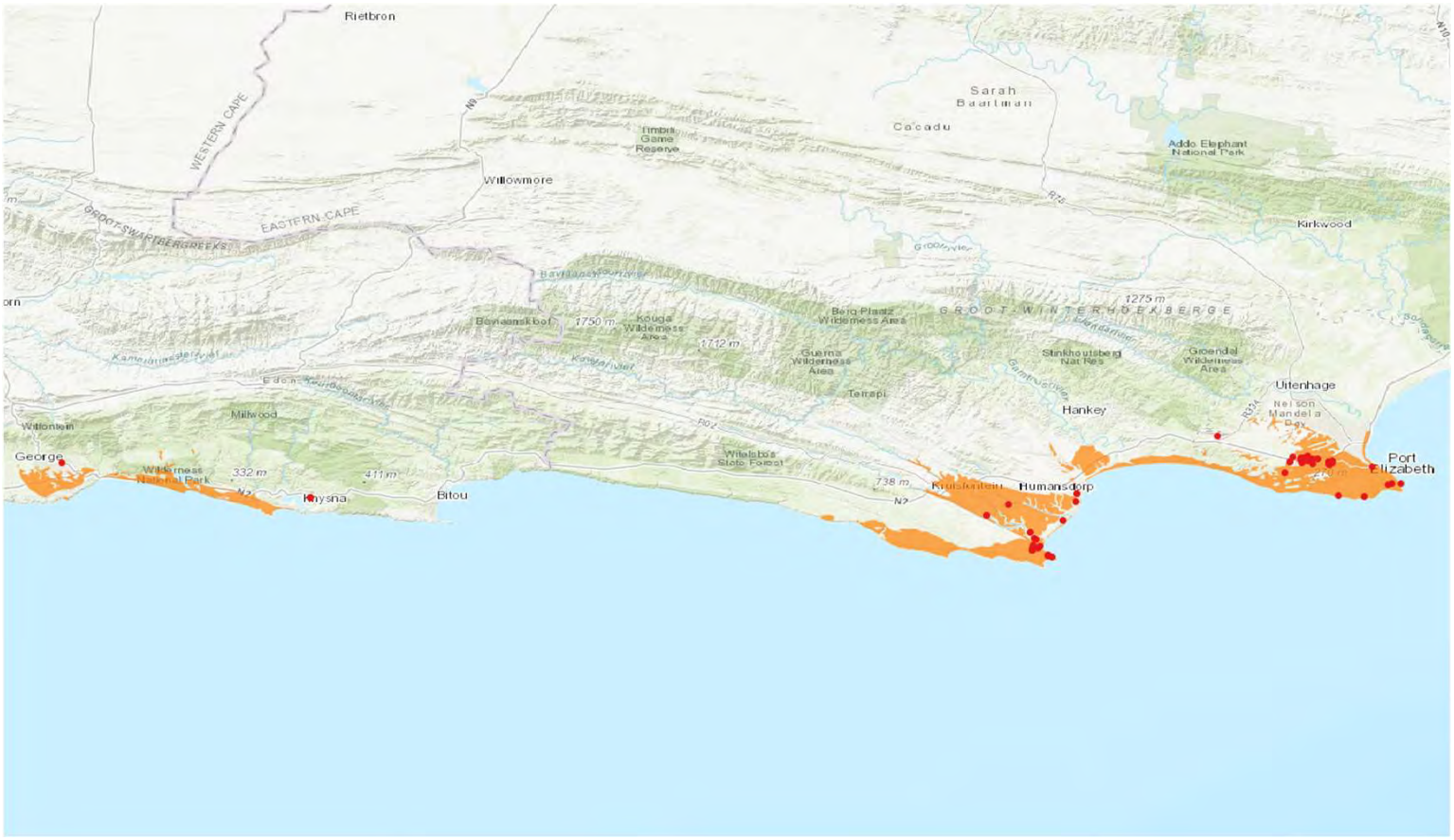
Sensitivity	Feature(s)
High	Acrodon purpureostylus
High	Bobartia longicyma subsp. microflora
High	Drosanthemum lavisii
High	Lobelia valida
High	Erica albertyniae
High	Sensitive species 253
High	Sensitive species 259
High	Anginon pumilum
High	Sensitive species 157
High	Elegia fenestrata
High	Anisodontea dissecta
High	Amphithalea speciosa
High	Argyrolobium pachyphyllum
High	Heliophila linearis var. reticulata
High	Dymondia margaretae
High	Stoebe schultzii
High	Diosma parvula


2811 threatened plant species
± 78 000 occurrence records
Hentiesbaai
Mariental
Gaborone
Kgalagadi Transfrontier Park
Kruger National Park
Pretoria
Maputo
Swaziland
Luderitz
Aus
Keetmanshoop
Sperrgebiet
Welkom
Upington
Kimberley
Bloemfontein
Lesotho
Richtersveld Community Conservancy
Beaufort West
Cape Town
Port Elizabeth
East London


Buffelsfontein
Game &
Nature Reserve
Swartwater
Jakkalsfontein
Private Nature
Reserve
Darling
Grotto Bay
Philadelphia
MELKBOSSTRAND
Malmesbury
Riebeeck West
Riebeeck
Kasteel
Zonquasdrift
Hermon
Wellington
Windmeul
R27
R307
R315
R311
R45
R302
R304
R44
R46

Brunsvigia litoralis (EN)

Suitable habitat models



What is included in the guideline

Step by step guidance for the protocol

2.3.9 The likelihood of other threatened species, undescribed species or highly localised endemics, migratory species, or species of conservation concern, occurring in the vicinity.

Minimum Requirements

A table in the report presenting all SCC that were predicted by the Screening Tool as well as any additional SCC observed that were not predicted by the Screening Tool;

Additional species that must be included in the table are:

- undescribed species
- highly localised endemics
- migratory species

This table must contain the following information:

- Taxonomic Family
- Common Name
- Scientific Name
- Current IUCN extinction risk category (most recent of either national or regional)
- Habitat requirements (a brief description)
- Probability of occurrence on the site:
  - Confirmed (if observed during the survey);
  - High;
  - Medium;
  - Low.
- A short justification for the provided probability of occurrence

Detailed guidance and additional information

The procedure for collating occurrence data and presentation thereof is described in detail in **9.3.6 Researching and presenting data for expected SCC**

2.3.8 Buffer distances (as per the Species Environmental Assessment Best Practice Guidelines) used for the population of each species of conservation concern; and

Minimum Requirements

- All associated habitat (e.g. nesting, roosting, foraging etc.) for each SCC should be buffered according to the guidelines presented in the taxon-specific sections below. Where recommendations for buffers have been provided in provincial guidelines which exceed those recommended in the taxon-specific sections below, the provincial guidelines should be followed;
- Where precise buffers are not currently available for a particular SCC or group of SCC, the specialist is required to perform comprehensive literature research and consult with external species-specific specialists for guidance in this regard. Should this exercise not result in clearly definable buffer distances, the precautionary principle must be ap buffer sizes should be set at the maximum possible;
- Where defined SCC buffers are applied and include irreversibly modified habitat (e.g. major infrastructure) that cannot be rehabilitated or restored, these areas may be from the buffer as they are non-functional. Degraded habitat that falls within the b may offer some ecological functionality, must not be excised from the buffer;
- It is essential to demonstrate consideration of habitat connectivity during the applicati buffers for SCC. If the recommended buffer distance for a SCC does not allow for appropriate habitat connectivity, the specialist should increase the recommended distance accordingly in the area where habitat connectivity must be maintained.

Detailed guidance and additional information

Taxon-specific guidance for the application of buffers for SCC is provided in the following sections:

- **10.1 FLORA**
- **10.2 HERPETOFAUNA**
- **10.3 AVIFAUNA**
- **10.4 MAMMALS**
- **10.5 BUTTERFLIES**

The worked example for the determination of Site Ecological Importance (**8.4 Worked example**) provides additional guidance on how to apply buffers.

See also **9.3.2 Application of the precautionary principle and 'absence data'**;

Table 10-5: Buffer applications for herpetofauna SCC

Species or Species Group	Attribute	Minimum Buffer (m)	Recommend Buffer (m)	Discussion
Aquatic and semi-aquatic species. Includes all amphibians listed in Table 10-3 and the following reptiles: *Crocodylus niloticus* *Pelusios castanoides* *Pelusios rhodesianus*	Aquatic habitats (wetlands, ponds, rivers, streams, seeps etc.) utilised by these species for breeding & foraging purposes. This must include catchment areas of these aquatic habitats.	100	400	Buffers to be applied from the wetland edge (as per wetland delineations). Buffers to be applied must ensure connectivity between buffers of other aquatic habitats. If this can be achieved through the application of the minimum buffer distance then it may be applied. However, should this not be the case, the buffer size should be increased until this can be demonstrated. If no such connectivity is possible at all, then the recommended buffer must be applied. Minimum buffer recommendations for wetlands provided in Macfarlane & Bredin (2017) are not applicable for these SCC.
Herpetofauna reliant on forest habitats Amphibians: *Afrixalus knysnae* *Anhydrophryne ngongoniensis* *Natalobatrachus bonebergi* *Anhydrophryne rattrayi* Reptiles: *Bradypodion caeruleogula* *Bradypodion caffer* *Bradypodion thamnobates* *Dendroaspis angusticeps* *Scelotes inornatus*	Forest habitats either utilised directly or indirectly by the listed species for breeding, foraging or refugia	100	250	Buffers to be applied from the forest edge. Minimum buffer size is expected to allow for an appropriate ecotone as many forest species rely on the forest edge for foraging, basking and mate-seeking purposes. Where possible, connectivity between Forest patches should be maintained through the application of the recommended buffer distance.
Smaug giganteus	Colonies, indicated by the presence of recently excavated burrows.	250	400	Buffer to be applied around the periphery of Sungazer colonies. Buffer must specifically exclude eroded runoffs from areas cleared of vegetation (e.g. crop farming) that can bury and destroy Sungazer burrows. Applied buffer must ensure no exposure to pesticides and other chemicals used to treat adjacent agricultural crops or wind-blown ash (from power stations) or mining tailings. Therefore, the prevalent wind direction must to be taken into account. Sungazers are known to migrate distances of up to 1 km and may regularly move between 30-80 m during mating seasons (S. Parusnath pers. comm.), making them particularly susceptible to being killed by road traffic.
Herpetofauna specifically reliant on grassland: Amphibians: *Vandijkophrynus amatolicus* Reptiles: *Tetradactylus fitzsimonsi* *Scelotes bourquini*	Presence as determined through recent (<10 y) observation)	300	500	Habitat requirements, utilisation, densities and dispersal abilities of these species are rather poorly understood. In addition, because of their reliance on grassland habitats, they are likely to be negatively impacted by regular fires. Consequently, large minimum buffers surrounding known observation locations of these species with demonstrable connectivity to other undisturbed grassland habitats is required.

What is included in the guideline, continued

6. DEFINING THE PROJECT AREA OF INFLUENCE (PAOI)

7. DESCRIPTION OF IMPACT RECEPTORS

8. EVALUATION OF SITE ECOLOGICAL IMPORTANCE (SEI)

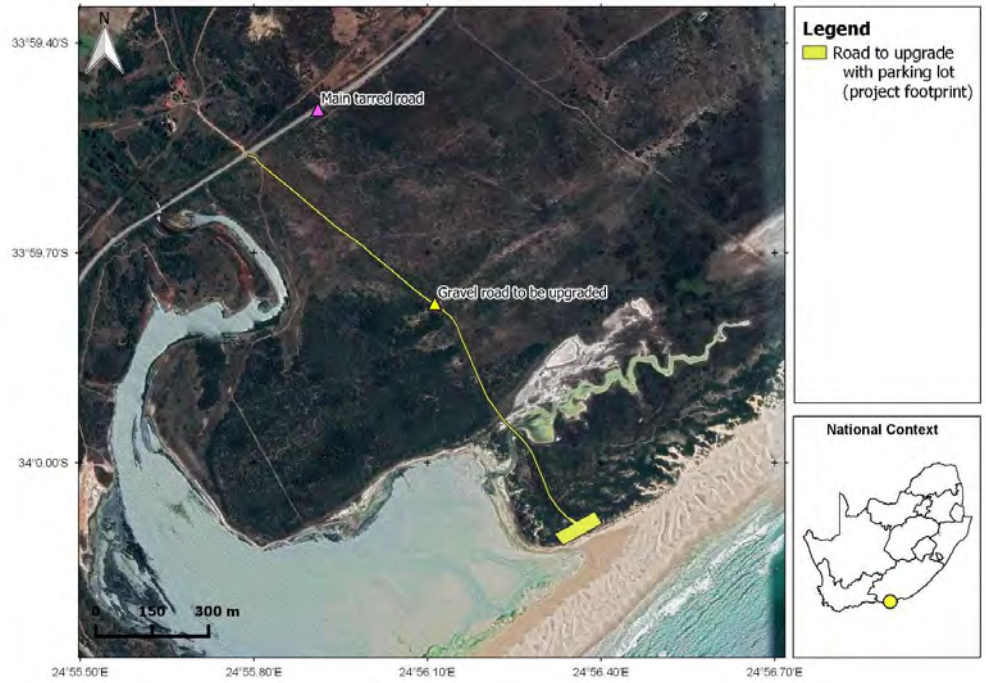
9. GENERAL GUIDELINES THAT APPLY TO ALL SPECIES SPECIALIST STUDIES

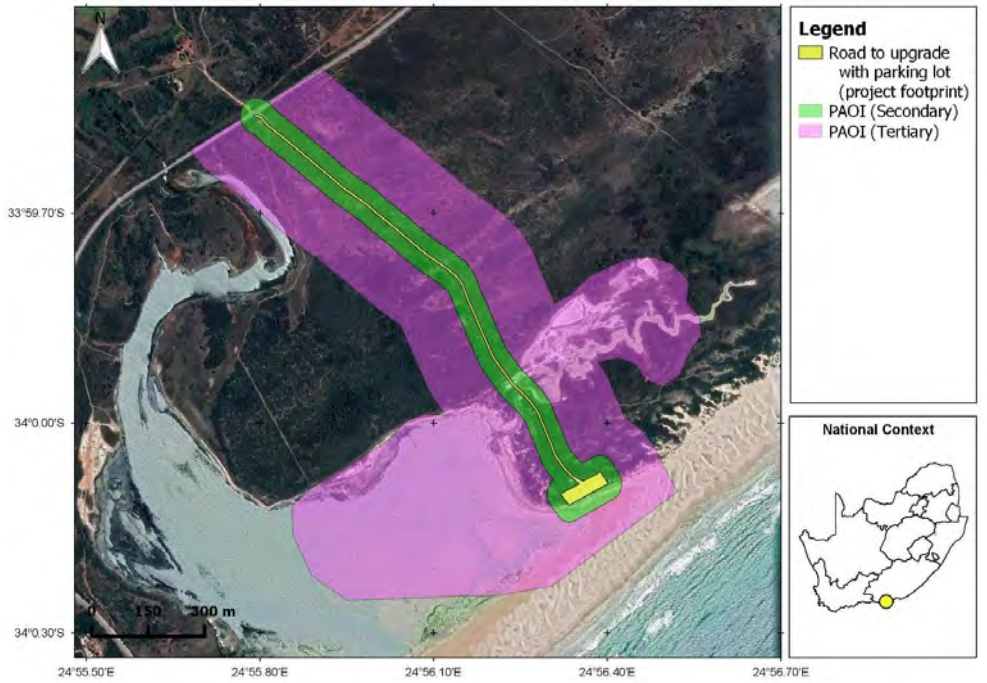
9.1 Qualifications and limitations of specialist
9.2 Fieldwork
9.3 Data interpretation, presentation & reporting
9.4 Impact Analysis
9.5 Mitigation of Impacts
9.6 Suitability of the proposed project and its activities
9.7 Data dissemination
9.8 A copy of the original specialist report as an appendix

10 TAXON-SPECIFIC GUIDELINES

10.1 FLORA
10.2 HERPETOFAUNA
10.3 AVIFAUNA
10.4 MAMMALS
10.5 BUTTERFLIES

Defining the Project Area of Influence (PAOI)





Best practice is for the specialist to define the taxon-specific project area of influence (PAOI) based on the spatial location of the project (footprint) and the potential extent of the impacts of the anticipated activities of the project.

PAOI defined according to the important ecosystem processes and functions that may be plausibly affected by the proposed development and its associated activities.

Taxon specific guidelines – minimum requirements

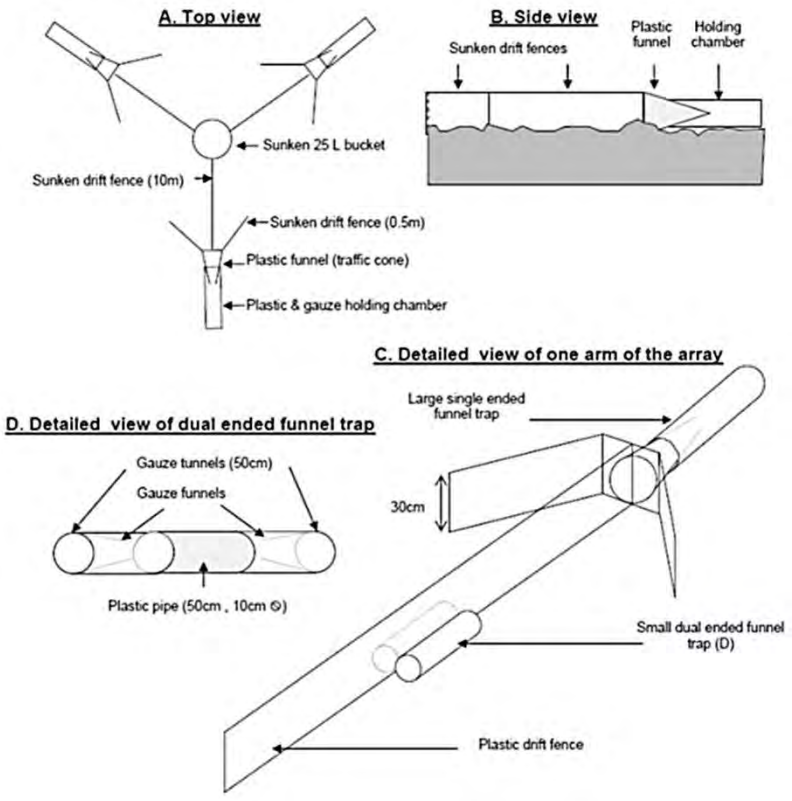


Figure 10-2: Top) Basic design and layout of a drift fence funnel trap array with central pitfall (dual-ended funnel trap (d) placement along drift fence shown in C only. Bottom) A deployed and active drift fence funnel trap array.

Taxon specific guidelines what must be included in the report

Sample Site	Habitat Description	Photo 1	Photo 2
Trap 1 Start: 2019/01/15 End: 2019/01/20 -28.7930729° S 24.0676642° E	Heavily sedged area adjacent to stream which has been artificially dammed due to road crossing, creating marshy area.		
AS01 2019/01/15 -28.701858° S 24.1166571° E	Edge of *Eucalyptus* plantation at high altitude. Much debris (wood) from adjacent harvested plot. Many alien invasive flora and extensive grassy cover under trees.		
AS02 2019/01/15 -28.806519° S 24.2846229° E	Ephemeral drainage in dense forest/bushveld mosaic. Undisturbed.		
AS03 2019/01/15 -28.6926869° S 24.1045366° E	Large granite dome at high altitude. Excellent refugia. *Lantana* and Jacaranda invasive species present degrading habitat.		

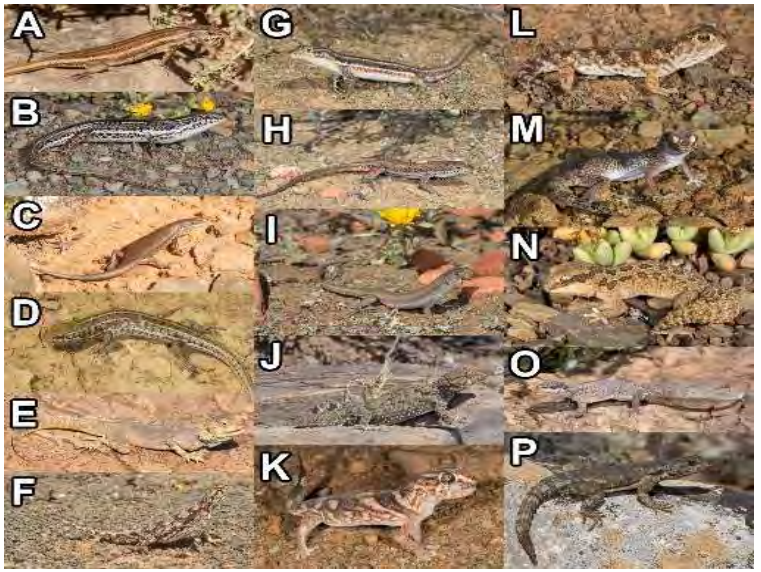


Figure 10-5: A series of diagnostic photographs taken for five individuals of Bradfield's Dwarf Gecko (Lygodactylus bradfieldi).

Question session 1

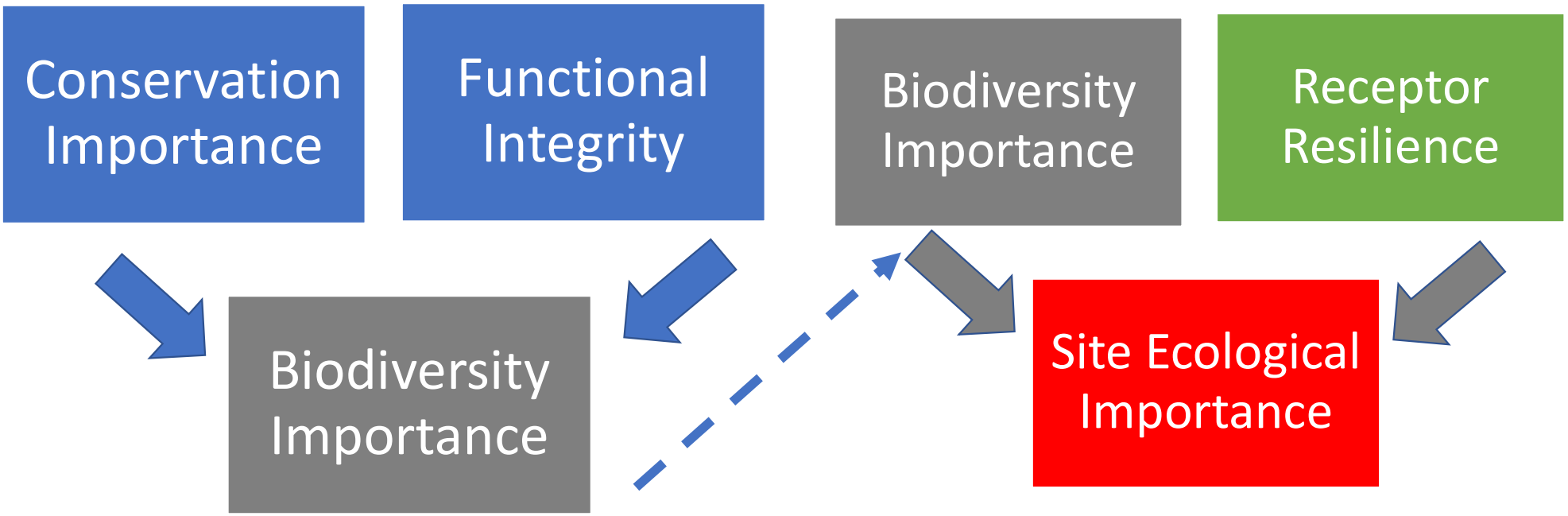
Poll

IAIA
International Association for Impact Assessment

IAIAsa
International Association for Impact Assessment South Africa

Evaluation of Site Ecological Importance (SEI)

Evaluation of Site Ecological Importance (SEI)



Conservation Importance (CI)

Conservation Importance	Fulfilling Criteria
Very High	**Confirmed or highly likely occurrence of CR, EN, VU or Extremely Rare or Critically Rare species that have a global Extent of Occurrence of < 10 km^2** ro Any area of natural habitat of a CR ecosystem type or large area (> 0.1 % of the total ecosystem type extent) of natural habitat of EN ecosystem type Globally significant populations of congregatory species (>10% of global population)
High	**Confirmed or highly likely occurrence of CR, EN, VU species that have a global Extent of Occurrence of > 10 km^2. IUCN threatened species (CR, EN, VU) must be listed under any criterion other than A. If listed as threatened only under Criterion A, include if there are less than 10 locations or < 10 000 mature individuals remaining.** Small area (>0.01% but < 0.1 % of the total ecosystem type extent) of natural habitat of EN ecosystem type or large area (> 0.1 %) of natural habitat of VU ecosystem type. Presence of Rare species. Globally significant populations of congregatory species (>1% but <10% of global population).
Medium	**Confirmed or highly likely occurrence of populations of NT species, threatened species (CR, EN, VU) listed under A criterion only and which have more than 10 locations or more than 10 000 mature individuals.** Any area of natural habitat of threatened ecosystem type with status of VU Presence of range-restricted species > 50 % of receptor contains natural habitat with potential to support SCC

Functional Integrity (FI)

a measure of the ecological condition of the impact receptor as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts.

Functional Integrity	Fulfilling Criteria
Very High	Very large (>100 ha) intact area for any conservation status of ecosystem type or >5 ha for CR ecosystem types High habitat connectivity serving as functional ecological corridors, limited road network between intact habitat patches No or minimal current negative ecological impacts with no signs of major past disturbance (e.g. ploughing)
High	Large (>20 ha but <100 ha) intact area for any conservation status of ecosystem type or >10 ha for EN ecosystem types Good habitat connectivity with potentially functional ecological corridors and a regularly used road network between intact habitat patches **Only minor current negative ecological impacts (e.g. few livestock utilising area) with no signs of major past disturbance (e.g. ploughing) and good rehabilitation potential**
Medium	Medium (>5 ha but <20 ha) semi-intact area for any conservation status of ecosystem type or > 20 ha for VU ecosystem types Only narrow corridors of good habitat connectivity or larger areas of poor habitat connectivity and a busy used road network between intact habitat patches **Mostly minor current negative ecological impacts with some major impacts (e.g. established population of alien and invasive flora) and a few signs of minor past disturbance; moderate rehabilitation potential**
Low	Small (>1 ha but <5 ha) area Almost no habitat connectivity but migrations still possible across some transformed or degraded natural habitat and a very busy used road network surrounds the area. Low rehabilitation potential **Several minor and major current negative ecological impacts**
Very Low	Very small (<1 ha) area No habitat connectivity except for flying species or flora with wind-dispersed seeds. Several major current negative ecological impacts

Biodiversity Importance

Biodiversity Importance		Conservation Importance				
		Very High	High	Medium	Low	Very Low
Functional Integrity	Very High	Very High	Very High	High	Medium	Low
	High	Very High	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very Low
	Low	Medium	Medium	Low	Low	Very Low
	Very Low	Medium	Low	Very Low	Very Low	Very Low

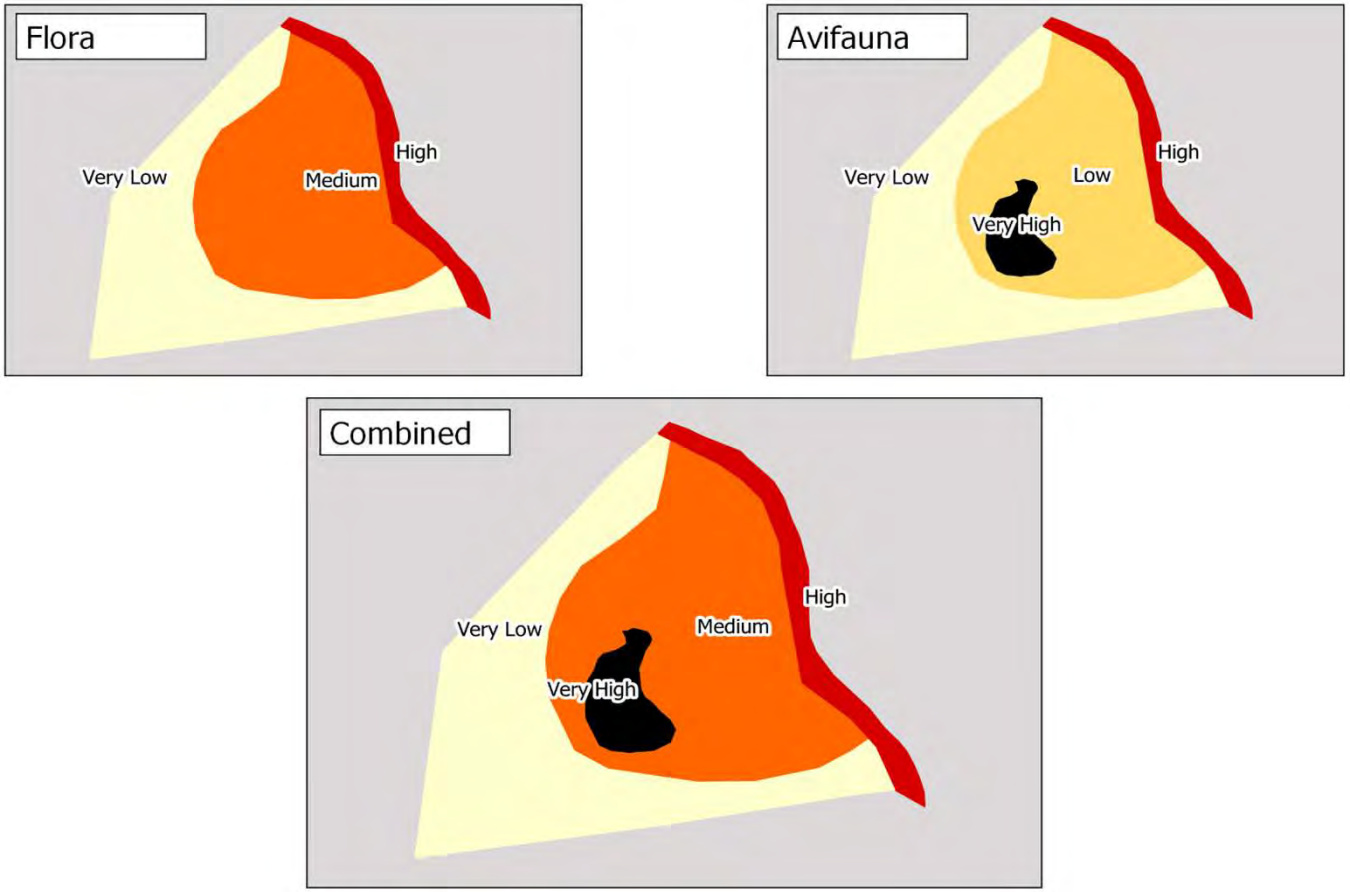
Receptor Resilience (RR)

the intrinsic capacity of the receptor to resist major damage from disturbance and / or to recover to its original state with limited or no human intervention.

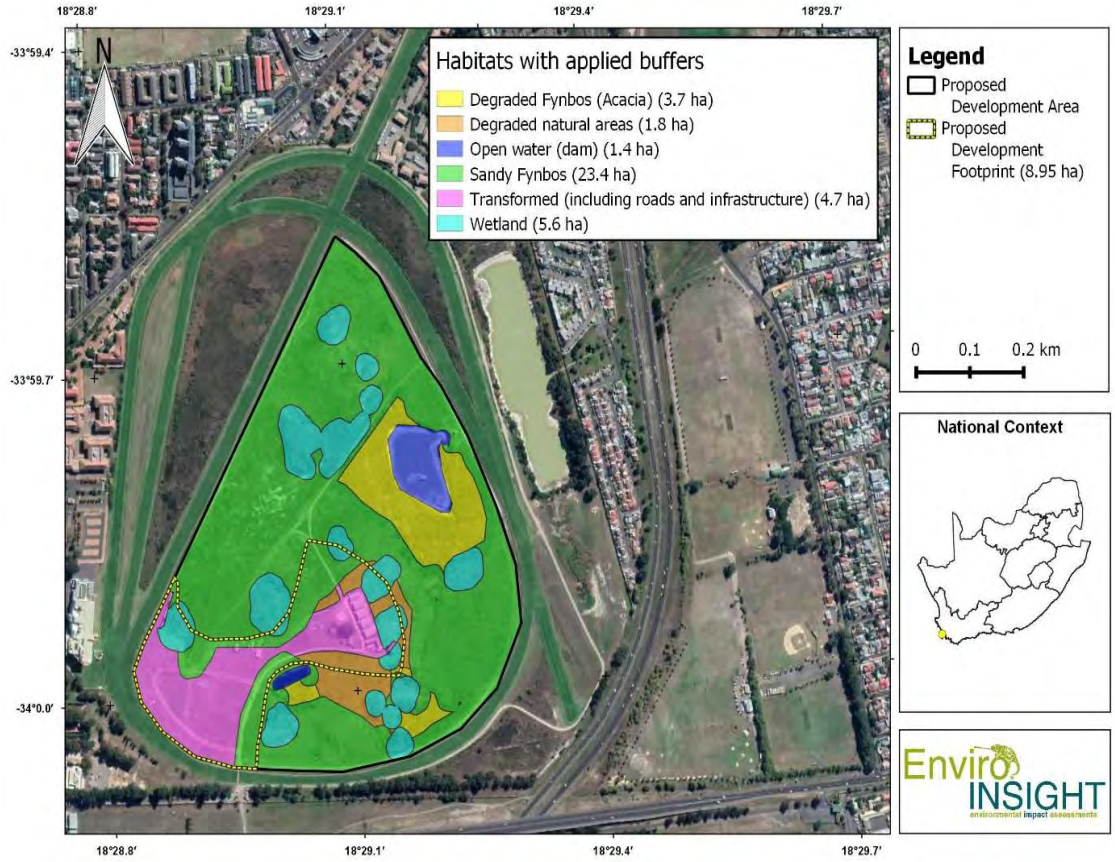
Resilience	Fulfilling Criteria
Very High	Habitat that can recover rapidly (~ less than 5 years) to restore > 70 % of the original species composition and functionality of the receptor functionality, or species that have a very high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a very high likelihood of returning to a site once the disturbance or impact has been removed
High	Habitat that can recover relatively quickly (~ 5-10 years) to restore > 70 % of the original species composition and functionality of the receptor functionality, or species that have a high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a high likelihood of returning to a site once the disturbance or impact has been removed
Medium	Will recover slowly (~more than 10 years) to restore > 70 % of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a moderate likelihood of returning to a site once the disturbance or impact has been removed
Low	Habitat that is unlikely to be able to recover fully after a relatively long period: > 15 years required to restore ~less than 50 % of the original species composition and functionality of the receptor functionality, or species that have a low likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a low likelihood of returning to a site once the disturbance or impact has been removed
Very Low	Habitat that is unable to recover from major impacts, or species that are unlikely to remain at a site even when a disturbance or impact is occurring, or species that are unlikely to return to a site once the disturbance or impact has been removed

Site Ecological Importance		Biodiversity Importance				
		Very High	High	Medium	Low	Very Low
Receptor Resilience	Very Low	Very High	Very High	High	Medium	Low
	Low	Very High	Very High	High	Medium	Very Low
	Medium	Very High	High	Medium	Low	Very Low
	High	High	Medium	Low	Very Low	Very Low
	Very High	Medium	Low	Very Low	Very Low	Very Low

Figure 8-1: Example of how the SEI should be combined for taxa with spatially distinct impact receptors.



Step by step example of how to apply SEI



Habitat	Conservation Importance	Functional Integrity	Receptor Resilience	Site Ecological Importance
Sandy Fynbos	**Very High** Any area of a CR ecosystem type. Population of a CR species with an EOO < 10 km^2 (*Erica margaritacea*)	**Very High** >5 ha of CR ecosystem type with no or minimal current negative ecological impacts and no signs of major past disturbance.	**Low** Sandy Fynbos is prone to rapid invasion by alien and invasive flora that prevents the restoration of this habitat following major disturbance. It requires active management and restoration attempts are not always successful. Flora endemic to this vegetation type are unlikely to adapt to major change, even after a long period.	**VERY HIGH** BI = Very High RR = Low
	High Confirmed occurrence in development footprint of four CR and six EN species) with EOO > 10 km^2.			
Wetland	**Very High** Any area of a CR ecosystem type. Population of a CR species with an EOO < 10 km^2 (*Erica margaritacea*)	**High** Some invasion by alien plants at wetland edges, but no signs of major past disturbance.	**Very Low** Wetlands are not easily restored without significant intervention. Wetland habitat specialist flora are unlikely to survive in any other habitat in the development area and are thus highly dependent on functional wetland habitat.	**VERY HIGH** BI = Very High RR = Very Low
	High Confirmed occurrence at wetland edge in development footprint of an EN species with EOO > 10 km^2 (*Hessea cinnamomea*).			
Degraded Fynbos (Acacia) **&** **Degraded natural areas**	**Very High** Any area of a CR ecosystem type.	**Low** Small (>1 ha but <5 ha) area with several minor and major current negative ecological impacts.	**Medium** Degraded Sandy Fynbos has the potential to be restored over time, particularly the areas that have been invaded by alien trees.	**MEDIUM** BI = Medium RR = Medium
	Low	**Medium**	**High**	

Step by step example of how to apply SEI

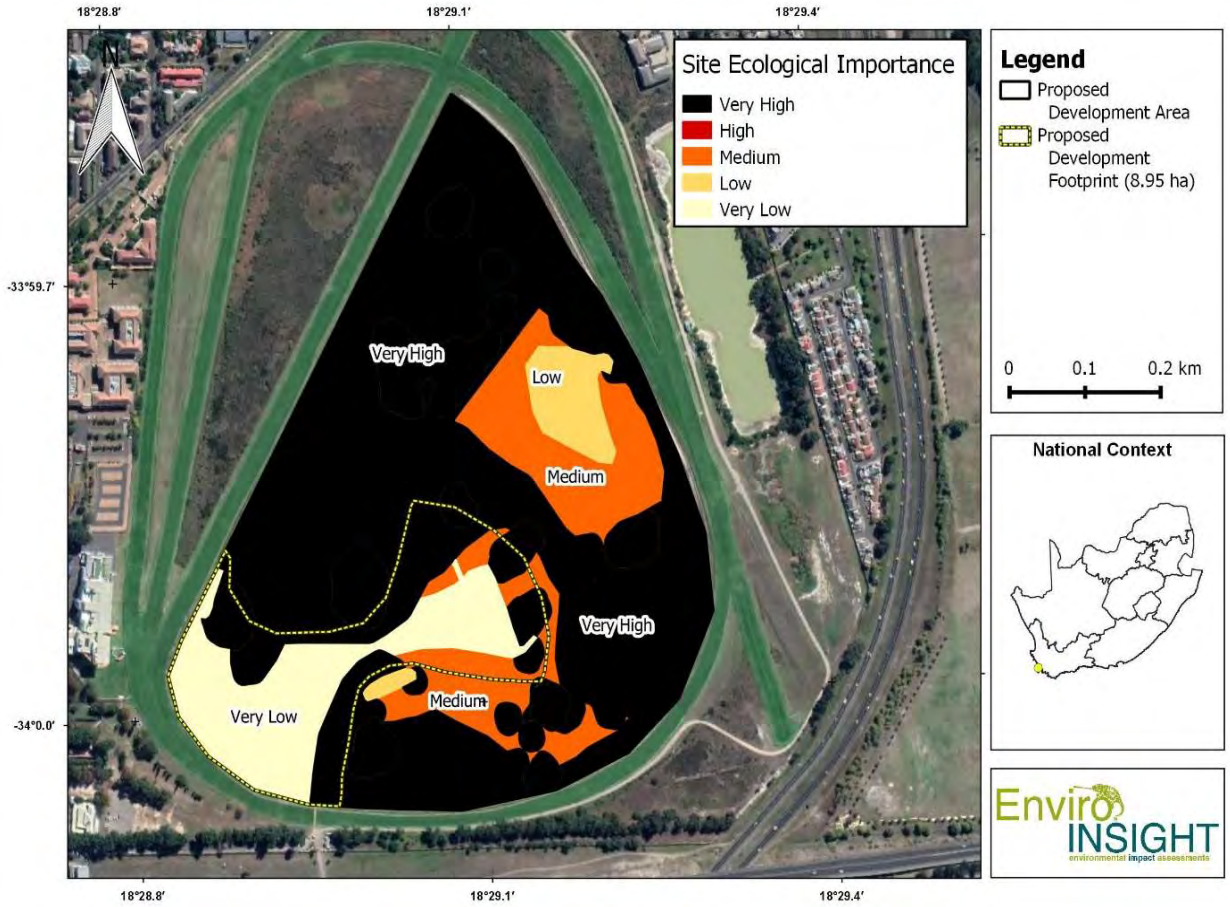


Table 8-4. Guidance for interpreting Site Ecological Importance (SEI) in the context of the proposed development activities.

Site Ecological Importance	Interpretation in relation to proposed development activities
Very High	Avoidance mitigation - No destructive development activities should be considered. Offset mitigation not acceptable/not possible (i.e. last remaining populations of species, last remaining good condition patches of ecosystems/unique species assemblages. Destructive impacts for species/ecosystems where persistence target remains.
High	Avoidance mitigation wherever possible. Minimization mitigation – Changes to project infrastructure design to limit the amount of habitat impacted; limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimization & restoration mitigation - Development activities of medium impact acceptable followed by appropriate restoration activities
Low	Minimization & restoration mitigation - Development activities of medium to high impact acceptable followed by appropriate restoration activities
Very Low	Minimization mitigation - Development activities of medium to high impact acceptable and restoration activities may not be required

Guidelines are being updated based on comments received https://bgis.sanbi.org/

Questions?

Poll 2

What else does IAIA have to offer?

Visit www.iaia.org

- Webinars On Demand
- Online Professional Development Program with mentorship
- Annual IAIA conference (with pre-conference training courses)
- Online Symposia in October 2020
- Best Practice Principles, IA FasTips, and more

IAIA
International Association for Impact Assessment