TERRESTRIAL BIODIVERSITY ASSESSMENT REPORT FOR THE UNLAWFUL ENCROACHMENT OF A ROCK REVETMENT WITHIN COASTAL ZONE ON ERF 90, WILDERNESS, WESTERN CAPE

March 2025

Prepared for:

Sharples Environmental Services cc (SES)

Prepared by:

Blue Skies Research

Dr Jacobus H. Visser

(PhD Zoology; Pr. Sci. Nat.)

Faunal Biodiversity Specialist

Cell: (083) 453 7916

e-mail: BlueSkiesResearch01@gmail.com

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Specialist details and expertise

Full Name: Jacobus Hendrik Visser

Professional registration: South African Council for Natural Scientific Professions**,** Professional Natural Scientist (Zoological Science) – Registration number: 128018

Address: 13 Dennelaan
Stilbaai
6674

Cell: (083) 453 7916

E-mail: BlueSkiesResearch01@gmail.com

Website: https://blueskiesresearch0.wixsite.com/blue-skies-research

Qualifications

- PhD (Zoology), University of Johannesburg (2015 - 2017)
- MSc (Zoology), Stellenbosch University (2011 - 2013)
- BSc Honours (Zoology) cum laude, Stellenbosch University (2010)
- BSc (Biodiversity and Ecology) cum laude, Stellenbosch University (2007 - 2009)

Expertise

- 29 years of in-the-field naturalist experience involving all faunal groups
- Zoologist with 18 years of professional experience
- 14 Peer-reviewed publications in high impact national and international scientific journals on the patterns and processes which drive and maintain faunal biodiversity, as well as on aspects of faunal biology and ecology

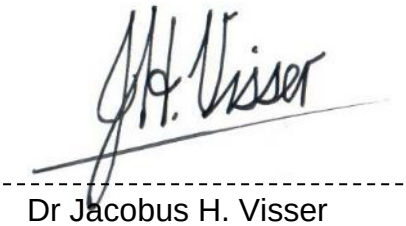
- Five IUCN Red List assessments
- Over 40 specialist faunal and avifaunal assessments
- Involved in the Southern African Bird Atlas Project 2 (SABAP2)
- Contributor on the National Biodiversity Assessment 2018: The status of South Africa's ecosystems and biodiversity. Synthesis Report. South African National Biodiversity Institute, an entity of the Department of Environment, Forestry and Fisheries, Pretoria.

Declaration of independence by the independent person who compiled a specialist report or undertook a specialist process

I, Dr Jacobus Hendrik Visser, as the appointed independent specialist hereby declare that I:

• act/ed as the independent specialist in this application;
• 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 and any specific environmental management Act;
• have no and will not have any 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 and any specific environmental management Act;
• am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations 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.



02 March 2025

Dr Jacobus H. Visser
(PhD Zoology; Pr. Sci. Nat.)
SACNASP Registration Number: 128018

Date

Blue Skies Research

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1. Introduction

The applicant is proposing to undertake a Section 24(G) impact assessment for a retrospective application for Environmental Authorisation for the unlawful encroachment of a rock revetment within a coastal zone on Erf 90, Wilderness, Western Cape (hereafter referred to as the "study area" or "site").

Erf 90 belongs to The Pallister Trust with the property situated on a coastal dune ridge and characterised by a south-sloping gradient towards the beach, with the soil consisting of dune sand. Erf 90 was originally transferred and registered in the name of the first owner in 1933 with subsequent successors in title and to date being decedents of the first owner. Over the years the original owner and three generations of subsequent owners have introduced and maintained protective measures to prevent the collapse of the sandy soils on the boundary and to limit the impact of tidal waves, especially at peak high tides and coastal storms. Subsequently in 2003 Mr Geoffrey Pallister (member of The Pallister Trust) installed a rock revetment to protect the house from the impact of tidal waves and extreme weather events.

The Pallister Trust has since been issued a Notice of Intent to Issue: A Coastal Protection Notice in Terms of Section 59 of the National Environmental Management: Integrated Coastal Management Act 24 of 2008 (NEM: ICMA); and/or A Repair or Removal Notice in Terms of Section 60 of the NEM: ICMA in Respect of Unlawful

Encroachment Within the Coastal Zone at Erf 90, Wilderness, Western Cape Province, by the Department of Forestry, Fisheries and the Environment (DFFE).

The DFFE Screening Tool Report generated for the proposed project footprint identifies the site as being of "Very High" sensitivity under the "Terrestrial Biodiversity Sensitivity Theme". In terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation (March 2020), "*An applicant intending to undertake an activity identified in the scope of this protocol, on a site identified on the screening tool as being of "very high sensitivity" for terrestrial biodiversity, must submit a Terrestrial Biodiversity Specialist Assessment*".

As part of the application process, a terrestrial biodiversity assessment of the project footprint is therefore required as small western sections of Erf 90 and the rock revetment intersect with degraded Ecological Support Areas 2 (ESA2). To this end, Blue Skies Research was appointed by Sharples Environmental Services cc (SES) on behalf of the applicant to perform the required terrestrial biodiversity assessment of the study area. The current report represents a terrestrial biodiversity assessment of the affected area to determine the post facto impact of the development on biodiversity features.

2. Overview of the study area

2.1 Geographic location

The rock revetment is located on the southern edge of Erf 90 in Wilderness, directly on the beach front in an area which would have previously represented a coastal dune ridge (Figures 1 and 2). The spatial extent of the rock revetment is relatively small (~380m^2) and serves to prevent the collapse of the sandy soils on the boundary and buffer the property from tidal waves and extreme weather events. Erf 90 is located directly adjacent to the Wilderness Beach Front access, parking lot and ablution to the west which is contained by a southern concrete revetment (also see Sections 6 and 7).

Figure 1 Spatial location of Erf 90 on a broad scale (map generated in Cape Farm Mapper version 3.0, Western Cape Department of Agriculture).

Figure 2 Spatial extent of Erf 90 at a finer scale (map generated in Cape Farm Mapper version 3.0, Western Cape Department of Agriculture).

2.2 Vegetation

Vegetation over the rock revetment area is mapped as Cape Seashore Vegetation (AZd3; Figure 3; VEGMAP 2024 Beta). This vegetation type is found in the coastal cliffs, dunes, and beaches of the Cape and is classified as a “Least-Threatened“ ecosystem type according to *The Revised National List of Ecosystems that are Threatened and in Need of Protection* (Government Notice No. 2747 of 18 November 2022). Currently, the area of the rock revetment harbours only a low diversity of Cape Seashore Vegetation, but is in line with the natural vegetation profile for the area (Section 4).

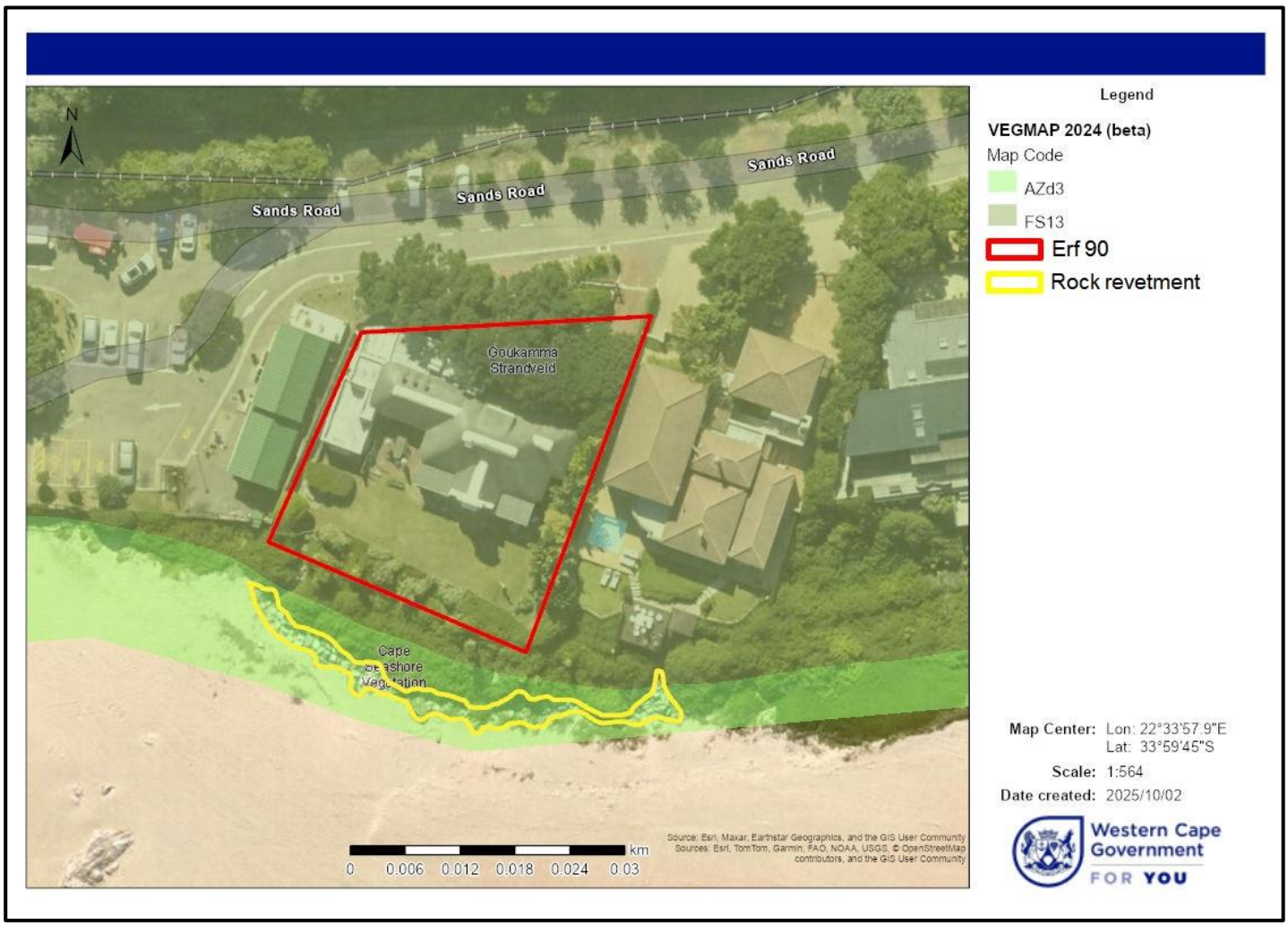


Figure 3 Vegetation types across Erf 90 (VEGMAP 2024 Beta; map generated in Cape Farm Mapper version 3.0, Western Cape Department of Agriculture).

2.3 Ecological Support Areas (ESAs)

Ecological Support Areas (ESAs) are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of CBAs and/or in delivering ecosystem services. Currently, only small western sections of Erf 90 and the rock revetment intersect with degraded ESA2, owing to these areas being mapped as a buffer zone around a small non-perennial drainage channel located to the west (Figure 4). Importantly, this drainage channel does not intersect either Erf 90 or the rock revetment, but is rather channelled through the Wilderness Beach Front concrete revetment wall (installed by the local municipality prior to installation of the rock revetment by the proponent) via a small pipe, from where it drains over the beach into the ocean (Sections 6 and 7). To this end, the presence of the rock revetment on Erf 90 does not have any impact on this freshwater drainage channel.

Figure 4 Spatial locations of degraded ESA2 and hydrological lines relative to Erf 90 (information sourced from Cape Farm Mapper version 3.0, Western Cape Department of Agriculture).

3. Study methodology

3.1 Study aims

This study represents an assessment of the terrestrial biodiversity over the affected project footprint, focussing specifically on faunal and avifaunal diversity and abundances, habitat composition and ecosystem integrity and -dynamics. As such, the aims of this investigation were to:

1.) Assess, define and create a spatial rendering of the ecological condition and composition of terrestrial habitats across the study area based on information gathered during the field survey as well as through a desktop assessment using the latest satellite imagery, and

2.) compile a faunal species list within the study area through field surveying so as to assess the ecosystem integrity of the site from a faunal perspective, as well as establish the faunal profile of the site to determine likely impacts from the development.

3.2 Field survey

The study area was surveyed on foot over a single day on the 5th of February 2025, during the Summer season. Surveying included unconstrained point sampling through search meanders. The study area landscape contains only a low number of avifaunal and butterfly species, with no notable presence of mammals, reptiles or amphibians (Section 5). Avifaunal species were identified by visual observation, using a 180x zoom lens, or by auditory means. Butterfly species were identified and photographed from less than one meter away. All observations were recorded by GPS and the species were photographed using a digital camera (Canon PowerShot SX430 IS, Canon Inc, USA).

4. Vegetation

The study area encompasses the buildings and garden on Erf 90, with the rock revetment located over the southern edge and constructed with natural materials (rocks) similar to that found in the surrounding landscape (Figures 5 to 7). The small terrace north of the rock revetment harbours a dense incidence of Tickberry (*Osteospermum moniliferum*) and Dune Spinach (*Tetragonia decumbens*) with single incidences of the Cape Aloe *(Aloe ferox*) and Krantz Aloe (*Aloe arborescens*) also noted. These botanical elements are in line with the mapped vegetation type of Cape Seashore Vegetation (VEGMAP 2024 Beta) which is currently classified as a “Least-Threatened“ ecosystem type (Subsection 2.2), and has a large Remaining Ecosystem Extent (REE) of 98%. To this end, the area of the rock revetment harbours the natural vegetation representative of the broader landscape and does not contain any non-native or invasive botanical elements.

Figure 5 Western view of the rock revetment at the southern end of Erf 90 (Coordinates: -33.99588, 22.56571).

Figure 6 Southern view of the rock revetment at the southern end of Erf 90 (Coordinates: -33.99617, 22.56596).

Figure 7 Eastern view of the rock revetment at the southern end of Erf 90 (Coordinates: -33.99611, 22.56605).

5. Faunal and avifaunal composition

Only three faunal species (the Kelp Gull, Cape Wagtail and Green-eyed Vagrant) were recorded in vicinity of the rock revetment (Figure 8), all of which are currently classified as “Least Concern” by the IUCN. Given the placement of the revetment in an urban environment next to busy roads, the Wilderness Beach Front and the beach area, faunal diversity appears highly impaired with only single species present. To this end, Erf 90 does not intersect with any notable faunal features or -habitats and is of a very low sensitivity from a faunal perspective.

Figure 8 Photographic evidence of the different faunal species recorded in the study area. A) Kelp Gull (*Larus dominicanus*). B) Cape Wagtail (*Motacilla capensis*). C) Green-eyed Vagrant (*Nepheronia buquetii*).

6. Terrestrial biodiversity

From botanical (Section 4) and faunal (Section 5) perspectives, both Erf 90 and the southern rock revetment intersect areas of very low sensitivity with a natural vegetation profile of “Least Concern” and very low faunal diversity and abundances. According the Western Cape Spatial Biodiversity Plan only small western sections of Erf 90 and the rock revetment intersect with an area mapped as a degraded ESA2, defined as “*Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services*”. This degraded ESA2 is mapped as a buffer zone around a small non-perennial drainage channel located to the west, serving to maintain the natural flow of this non-perennial stream.

Currently, the entire area to the west of Erf 90 contains the parking lots and ablution of the Wilderness Beach Front from where the public may access the beach. This area is separated from the beach by a municipal concrete revetment wall with a small pipe from where water drains over the beach into the ocean (Figure 9). Importantly therefore, this part of the **drainage channel has been irreversibly modified to flow beneath the Wilderness Beach Front parking area prior to installation of the rock revetment**. Given this modification of the drainage channel therefore, this part, including Erf 90 and the rock revetment, fails to meet the criteria of an ESA2. To this end, the presence of the rock revetment on Erf 90 does not have any impact on this freshwater drainage channel or the buffer surrounding it, and therefore has no impact on this terrestrial biodiversity feature.

Figure 9 The concrete revetment wall of the Wilderness Beach Front. Note the small pipe (arrowed) which is used to channel the drainage of the western non-perennial drainage channel onto the beach.

7. Impact Assessment

7.1 Listed Activity

The current report represents a post facto impact assessment for an application in terms of Section 24(G) of the National Environmental Management Act (NEMA) (Act No. 107 of 1998, as amended) for the unlawful encroachment of a rock revetment within a coastal zone on Erf 90, Wilderness. This rock revetment was installed in 2003 by Mr Geoffrey Pallister (member of The Pallister Trust) to prevent the collapse of the sandy soils on the boundary protect of the Erf and to protect the house from the impact of tidal waves and extreme weather events. The overall footprint of this rock revetment is very small (~380m^2), but does overlap with areas mapped as degraded ESA2, thereby triggering the need for the Section 24(G) application.

7.2 Impacts

Installation of the rock revetment would have been unlikely to impact on terrestrial biodiversity features in the landscape for several reasons:

- The overall footprint of the rock revetment is very small (~380m^2);
- The revetment is constructed of natural materials (rocks) which appears to originate from the surrounding area;
- Soils used to in-fill the revetment is characteristic of the surrounding area and harbours natural vegetation elements similar to that found in the surrounding landscape;
- The revetment is located at the edge of the residential area towards the beach front which harbours very few faunal elements and therefore a highly impaired faunal diversity;
- The revetment does not impact on the degraded ESA2 as it does not interfere with the non-perennial drainage line to the west which traverses the Wilderness Beach Front concrete revetment wall through a small pipe.

Taken together therefore, the impact of this rock revetment on the receiving environment would have been minimal and has led to minimal or no loss or degradation of ecological processes or biodiversity patterns in either local or regional contexts.

7.3 Impact assessment

The post facto impact assessment was performed following the criteria outlined in Appendix A. Taken together, the impact of this rock revetment on the receiving environment would have been minimal and has led to minimal or no loss or degradation of ecological processes or biodiversity patterns in either local or regional context. To this end, ecosystem function has not been impacted by the installation of this feature with its impact being of **No significance** to the receiving environment.

Impact assessment

Description of impact	
Type of Impact	Direct
Nature of Impact	Negative
Phases	Construction and operational
Criteria	
Extent and duration of impact:	Site specific; Long term
Consequence of impact or risk:	Negligible
Probability of occurrence:	Improbable
Degree to which the impact may cause irreplaceable loss of resources:	No loss of resource
Degree to which the impact can be reversed:	N/A
Indirect impacts:	None identified.
Cumulative impact prior to mitigation:	Negligible
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High):	No significance
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Residual impacts:	N/A

8. Conclusion

Taken together, the results of the report indicate the following:

- The rock revetment is constructed with natural materials (rocks) similar to that found in the surrounding landscape and harbours a “Least-Threatened“ ecosystem type with the natural vegetation representative of the broader landscape (Section 4).
- Neither Erf 90 nor the rock revetment intersect with any notable faunal features or -habitats and is of a very low sensitivity from a faunal perspective (Section 5).
- The presence of the rock revetment on Erf 90 does not have any impact on this freshwater drainage channel or the buffer surrounding it, and therefore has no impact on this terrestrial biodiversity feature (Section 6).
- Impacts from installation of the rock revetment would have had No significance to the receiving environment (Section 7).

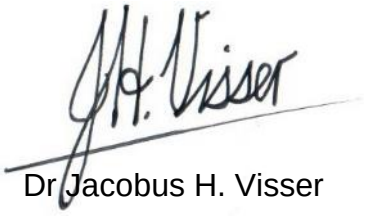
Taken together therefore, installation of the rock revetment on Erf 90 has had little to no impact on terrestrial biodiversity in the immediate or broader landscape. From a terrestrial biodiversity perspective therefore, there would have been no reason why the development should not have proceeded if EA was originally applied for.

9. Conditions to which this statement is subjected

The content of this report is based on the author’s best scientific and professional knowledge as well as available information. Since environmental impact studies deal with dynamic natural systems, additional information may come to light at a later stage which is not listed in this report. As such, the conclusions and recommendations made in this report are done in good faith based on information gathered at the time of the investigation.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of the report, which are supplied for the

purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.



Dr Jacobus H. Visser
(PhD Zoology; Pr. Sci. Nat.)
SACNASP Registration Number: 128018

10. References

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Appendix A

The assessment criteria for this impact assessment were based on, and adapted from, the Guideline on Impact Significance, Integrated Environmental Management Information Series 5, Department of Environmental Affairs and Tourism (DEAT, 2002) and the Guideline 5: Assessment of Alternatives and Impacts in Support of the Environmental Impact Assessment Regulations (DEAT, 2006). In short, the following criteria was used for this assessment:

Determination of Extent (Scale):

Site specific	On site or within 100 m of the site boundary, but not beyond the property boundaries.
Local	The impacted area includes the whole or a measurable portion of the site and property, but could affect the area surrounding the development, including the neighbouring properties and wider municipal area.
Regional	The impact would affect the broader region (e.g., neighbouring towns) beyond the boundaries of the adjacent properties.
National	The impact would affect the whole country (if applicable).

Determination of Duration:

Temporary	The impact will be limited to the construction phase.
Short term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than 8 months after the completion of the construction phase.
Medium term	The impact will last up to the end of the construction phase, where after it will be entirely negated in a period shorter than 3 years after the completion of construction activities.
Long term	The impact will continue for the entire operational lifetime of the development but will be mitigated by direct human action or by natural processes thereafter.
Permanent	This is the only class of impact that will be non-transitory. Such impacts are regarded to be irreversible, irrespective of what mitigation is applied.

Determination of Consequence significance:

Negligible	The impact would result in negligible to no consequences
Low	The impact would result in insignificant consequences
Medium	The impact would result in minor consequences
High	The impact would result in significant consequences

Determination of Probability:

Improbable	The possibility of the impact occurring is very low, due either to the circumstances, design or experience.
Probable	There is a possibility that the impact will occur to the extent that provisions must therefore be made.
Highly probable	It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up to mitigate the activity before the activity commences.
Definite	The impact will take place regardless of any prevention plans.

Determination of Loss of Resources:

No loss of resource	The impact will not result in the loss of any resources
Marginal loss of resource	The impact will result in marginal loss of resources
Significant loss of resources	The impact will result in significant loss of resources
Complete loss of resources	The impact will result in a complete loss of all resources

Determination of Reversibility:

Completely Reversible	The impact is reversible with implementation of minor mitigation measures
Partly Reversible	The impact is partly reversible but more intense mitigation measures
Barely Reversible	The impact is unlikely to be reversed even with intense mitigation measures

Irreversible	The impact is irreversible, and no mitigation measures exist

Determination of Degree to which an Impact can be Mitigated:

Can be mitigated	The impact is reversible with implementation of minor mitigation measures
Can be partly mitigated	The impact is partly reversible but more intense mitigation measures
Can be barely mitigated	The impact is unlikely to be reversed even with intense mitigation measures
Not able to mitigate	The impact is irreversible, and no mitigation measures exist

Determination of Cumulative Impact:

Negligible	The impact would result in negligible to no cumulative effects
Low	The impact would result in insignificant cumulative effects
Medium	The impact would result in minor cumulative effects
High	The impact would result in significant cumulative effects

Determination of Significance (without mitigation):

No significance	The impact is not substantial and does not require any mitigation action.
Low	The impact is of little importance but may require limited mitigation.
Medium	The impact is of sufficient importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
Medium-High	The impact is of high importance and is therefore considered to have a negative impact. Mitigation is required to manage the negative impacts to acceptable levels.
High	The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.
Very High	The impact is critical. Mitigation measures cannot reduce the impact to acceptable levels. As such the impact renders the proposal unacceptable.

Determination of Significance (with mitigation):

No significance	The impact will be mitigated to the point where it is regarded to be insubstantial.
Low	The impact will be mitigated to the point where it is of limited importance.
Medium	Notwithstanding the successful implementation of the mitigation measures, the impact will remain of significance. However, taken within the overall context of the project, such a persistent impact does not constitute a fatal flaw.
High	Mitigation of the impact is not possible on a cost-effective basis. The impact continues to be of great importance, and taken within the overall context of the project, is considered to be a fatal flaw in the project proposal.