

## APPENDIX N – IMPACT ASSESSMENT

### PROJECT IMPACT ASSESSMENT, SIGNIFICANCE AND MITIGATION MEASURES SUMMARY

The following impact rating approach used by EnviroAfrica CC is a basic exponential rating system to assess actual and potential negative and positive environmental impacts.

Environmental activities or aspects are identified, based on:

- the phases of the project,
- the nature (or description) of the actual and potential impacts of the activities.

For every project activity or aspect, various environmental impacts are listed. Every negative impact is allocated a -value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Consequence (Receiving Environment)
- Magnitude (Intensity/severity)

Every positive impact is allocated a +value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Magnitude (Intensity/severity)

Once a value is allocated for each of the criterion, the scores are averaged to determine the final impact rating see Table 1 below.

EnviroAfrica then further assesses environmental significance, based on the nature of the impact, as per the score and colour key which forms part of Table 1 below. This results in impacts having either a low (indicated in green), medium (indicated in yellow) or high (indicated in orange and red) negative significance, and a low (light blue), medium (blue) or a high (dark blue) positive significance

**Note:** i. As a baseline, impact rating values/scores are allocated taking the **worst-case** scenario into account i.e. with no mitigation. The baseline rating is compared with those after mitigation has been taken into account i.e. the post-mitigation rating. Post mitigation rating is used for the actual impact assessment.

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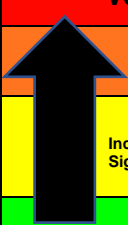
<b>SIGNIFICANCE CRITERIA</b>	<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Negligible (very low)</b>
<b>Value</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>1</b>
<b>Probability (likelihood) (P)</b>		Definite. Impact will definitely occur (impact will occur regardless of any prevention measures)	Highly probable. Very likely for impact to occur.	Probable. Impact may likely occur.	Improbable. Low likelihood/unlikely for impact to occur.
<b>Extent (E)</b>	Impact potentially reaches beyond national boundaries	Impact has definite provincial/potential national consequences	Impact confined to regional area/ town	Impact confined to local region and impact on neighbouring properties	Impact confined to project property / site
<b>Duration (D)</b>		Permanent The impact is expected to have a permanent impact, with very little to no rehabilitation possible	Long-Term The impact is expected to last for a long time after construction with rehabilitation expected to be 15-50 years. Impact is reversible but only with long-term mitigation	Medium-term The impact is expected to last for some time after construction with rehabilitation expected to be 2 - 15 years. Impact is reversible but only with on-going mitigation	Short-term / temporary The impact is expected to be temporary or last for a relatively short time with rehabilitation expected to be <2years. The impact is reversible through natural process and/or some mitigation.
<b>Magnitude (Intensity/ Severity) (M)</b>	It is expected that the activity will have a very severe to permanent impact on the surrounding environment. Functioning irreversibly impaired. Rehabilitation often impossible or unfeasible	It is expected that the activity will have a severe impact on the surrounding environment. Functioning may be severely impaired and may be temporarily cease. Rehabilitation will be needed to restore system integrity	It is expected that the activity will have an impact on the surrounding environment, but it will maintain its function, even if moderately modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the activity will have a perceptible impact on the surrounding environment, but it will maintain its function, even if slightly modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the impact will have little or no effect on the integrity of the surrounding environment
<b>Receiving environment (Consequence): (RE)</b>	Very sensitive, pristine area – protected site or species permanently or seasonally present	Unused area containing only indigenous fauna / flora species	Unused area containing indigenous and alien fauna / flora species	Semi-disturbed area already rehabilitated / recovered from prior impact, or with moderate alien vegetation	Disturbed area/ transformed/ heavy alien vegetation

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**ENVIRONMENTAL RATING SIGNIFICANCE KEY:**

**Negative Impacts**

SIGNIFICANCE	RATING	Final rating score / value range
Very Significant	Very High	-11 to -16
Significant	High	-7 to <-11
Increasing Significance	Medium	-4 to <-7
Insignificant	Low	-3 to <-4
	Very Low	-1 to <-3



**Positive Impacts**

SIGNIFICANCE	RATING	Final rating score / value range
Significant	High	10 to 16
Increasing Significance	Medium	4 to <10
Insignificant	Low	1 to <4

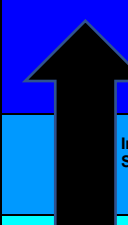


Table 1. Environmental Significance Rating Methodology (rating criteria and significance key)

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	Aspect	Impact	Environmental Significance (without Mitigation)	Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)	Environmental Significance (After Mitigation)
<b>CONSTRUCTION PHASE</b>					
1	Biodiversity	<b>Special habitats:</b> Potential impact on special habitats (e.g. true quartz or "heuweltjies")	Very Low (Negative)	<ul style="list-style-type: none"> <li>Recovering and remaining natural veld to the back of the site (Green area in Figure 12 of Appendix H3)</li> <li>Although the vegetation itself is not vulnerable or endangered the protection of the remaining natural veld to the back of the site, will add to the terrestrial diversity of the site, and may increase or provide habitat for a number of sensitive species animal species</li> <li>A well-planned alien eradication program should be implemented, which should focus on clearing of clearing of the area to the back (Green in Figure 12), slowly working to the front. This will not only have the benefit of improving the condition of the natural vegetation but should also reduce the fire risk over time                             <ul style="list-style-type: none"> <li>Care must be taken with the eradication method to ensure that the removal does not impact or lead to additional impacts (e.g., spreading of the AIP due to incorrect eradication methods)</li> <li>Care must be taken to dispose of alien plant material responsibly.</li> </ul> </li> </ul> <p>The pond (Blue area in Figure 12 of Appendix H3) should be protected and allowed to maintain its function as it could be a possible breeding site for the endangered Knysna banana frog</p>	Very Low (Negative)
2		<b>Landuse and cover:</b> Potential impact on socio-economic activities.		Very Low (Negative)	

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				<ul style="list-style-type: none"> <li>• A well-planned alien eradication program should be implemented, which should focus on clearing of clearing of the area to the back (Green in Figure 12 of Appendix H3), slowly working to the front. This will not only have the benefit of improving the condition of the natural vegetation but should also reduce the fire risk over time.                             <ul style="list-style-type: none"> <li>○ Care must be taken with the eradication method to ensure that the removal does not impact or lead to additional impacts (e.g., spreading of the AIP due to incorrect eradication methods)</li> <li>○ Care must be taken to dispose of alien plant material responsibly.</li> </ul> </li> </ul> <p>The pond (Blue area in Figure 12 of Appendix H3) should be protected and allowed to maintain its function as it could be a possible breeding site for the endangered Knysna banana frog</p>	
3		<b>Vegetation status:</b> Loss of vulnerable or endangered vegetation and associated habitat.	<b>Very Low (Negative)</b>	The impact on loss of vegetation is expected to be negligible.	<b>Very Low (Negative)</b>
4		<b>Conservation priority:</b> Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	<b>Very Low (Negative)</b>	The impact on loss of conservation is expected to be low.	<b>Very Low (Negative)</b>
5		<b>Connectivity:</b> Potential loss of ecological migration corridors.	<b>Very Low (Negative)</b>	The impact on loss of connectivity is expected to be negligible.	<b>Very Low (Negative)</b>
6		<b>Protected and Endangered plant species:</b> Potential impact on threatened or protected plant species.	<b>Very Low (Negative)</b>	The potential impact on red-listed or protected species is expected to be low to negligible.	<b>Very Low (Negative)</b>

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7		<b>Fauna and avi-fauna:</b> Potential impact on mammals, reptiles, amphibians and birds	<b>Very Low (Negative)</b>	The potential impact is considered “low sensitive” for all the species evaluated.	<b>Very Low (Negative)</b>
8		<b>Cumulative</b> impact associated with proposed activity.	<b>Low (Negative)</b>	<ul style="list-style-type: none"> <li>• Recovering and remaining natural veld to the back of the site (Green area in Figure 12 of Appendix H3)</li> <li>• Although the vegetation itself is not vulnerable or endangered the protection of the remaining natural veld to the back of the site, will add to the terrestrial diversity of the site, and may increase or provide habitat for a number of sensitive species animal species</li> <li>• A well-planned alien eradication program should be implemented, which should focus on clearing of clearing of the area to the back (Green in Figure 12 of Appendix H3), slowly working to the front. This will not only have the benefit of improving the condition of the natural vegetation but should also reduce the fire risk over time                             <ul style="list-style-type: none"> <li>○ Care must be taken with the eradication method to ensure that the removal does not impact or lead to additional impacts (e.g., spreading of the AIP due to incorrect eradication methods</li> <li>○ Care must be taken to dispose of alien plant material responsibly</li> </ul> </li> <li>• The pond (Blue area in Figure 12 of Appendix H3) should be protected and allowed to maintain its function as it could be a possible breeding site for the endangered Knysna banana frog</li> </ul>	<b>Low (Negative)</b>
8	Heritage	No impacts expected		No further mitigation is recommended concerning these resources.	
9	Palaeontology	No impacts expected		No further mitigation is recommended concerning these resources.	
10	Agriculture	Loss of grazing land	<b>Very Low (Negative)</b>	No mitigation measures are required for the protection of agricultural production potential on the site because the site is highly unlikely to be utilised for agricultural production in future.	<b>Very Low (Negative)</b>

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<b>OPERATIONAL PHASE</b>					
11	Freshwater	Dam No. 1	Low (Negative)	Maintain the habitat integrity of Dam No.1 for the Knysna leaf folding frog, to maintain the integrity of the dam walls and to keep the previous flow path of the drainage line intact and not allow further degeneration. Keep farm animals out of Dam No.1. Maintain emerging and riparian vegetation. Keep flow path intact. Repair dam walls and spillways when necessary.	Very Low (Negative)
12	Freshwater	Dam No. 2	Very Low (Negative)	Maintain emerging and riparian vegetation. Keep flow path intact. Repair dam walls and spillways when necessary.	Very Low (Negative)
13	Freshwater	Dam No. 3	Very Low (Negative)	Maintain emerging and riparian vegetation. Keep flow path intact. Repair dam walls and spillways when necessary.	Very Low (Negative)
14	Freshwater	Drainage line	Low (Negative)	Keep flow path intact.	Very Low (Negative)