CONSERVATION INTELLIGENCE: SOUTH

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EnviroAfrica
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Attention: Maboee Nthejane
By email: admin@enviroafrica.co.za

Dear Mr Nthejane

Pre-Application Basic Assessment Report for the Proposed Nuwejaars Fish Exclusion Weir across the Uintjieskuil River, Portion 1 of Farm Annex Uintjieskuil 295, Elim

CapeNature would like to thank you for the opportunity to comment on the application and would like to make the following comments.

Screening Tool and Site Sensitivity Verification

A screening tool report dated 2 June 2025 indicates a very high sensitivity for terrestrial biodiversity and aquatic biodiversity, high sensitivity for animal species and medium sensitivity for plant species. The site sensitivity verification supports the sensitivity ratings in the screening tool and indicates that the terrestrial biodiversity study addresses the terrestrial biodiversity, plant species and animal species themes and an aquatic biodiversity study addresses the aquatic biodiversity theme. The site sensitivity verification indicates that under the aquatic biodiversity theme, a specialist was appointed to provide input on the potential impact on indigenous fishes. We wish to highlight that a specialist study regarding indigenous fish would fall under the animal species theme.

Terrestrial Biodiversity Compliance Statement

The terrestrial biodiversity compliance statement indicates the verified sensitivity for plant species should remain at medium sensitivity, however the sensitivity for terrestrial biodiversity and animal species is verified as low. The site sensitivity verification therefore differs from the site sensitivity verification report and therefore the latter should be amended accordingly. We further wish to note that according to the protocols, a compliance statement should be undertaken for a verified sensitivity of low sensitivity, however for a verified sensitivity of medium or high sensitivity an impact assessment

The Western Cape Nature Conservation Board trading as **CapeNature**
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must be undertaken. Therefore, the compliance statement is appropriate for animal species and terrestrial biodiversity, but an impact assessment should have been undertaken for plant species.

The vegetation type mapped for the location is Elim Ferricrete Fynbos, listed as endangered. The compliance statement indicates that the original vegetation would have consisted of Cape Lowland Alluvial Vegetation (endangered) along the river surrounded by Elim Ferricrete Fynbos, however the indigenous vegetation has been lost to cultivation except directly adjacent to the river. Cultivation at the proposed location of the weir has taken place right up to the river banks with the remnant riparian vegetation considered degraded, mainly restricted to reeds and sedges in the river bed and patches of indigenous shrubs.

Despite the limited extent of indigenous vegetation in a degraded condition, individuals of the endangered *Leucadendron laxum* were encountered within the proposed footprint of the weir and surroundings. The presence of the *L. laxum* individuals is the reason for the medium sensitivity for the plant species theme. As noted however, the fieldwork was undertaken at a sub-optimal time of year and therefore there is the potential for additional species of conservation concern (SCCs) to be present which could only be observed in winter/spring.

The only potential constraint or impact identified in the compliance statement was the individuals of *L. laxum* at the location which is indicated in Figure 7. Only one specimen is considered likely to be lost as a result of the proposed weir. An assessment of impacts is not required for a compliance statement, however we recommend that it is required for the plant species theme due to the medium sensitivity prior to mitigation. The proposed mitigation is search and rescue of the *L. laxum* specimens that may be impacted, appointment of an environmental control officer and clearing of alien invasive species.

Animal Species Theme

It should be stated up front that the primary objective of the project is to benefit indigenous fish species by creating a barrier to alien invasive fish which predate on the indigenous fish. With regards to fauna, a general description of the fauna of the region is provided. The species flagged in the screening tool are evaluated with regards to the probability of occurrence, For the two species which utilize aquatic habitat, namely African Marsh Harrier (*Circus ranivorus*) and Cape platanna (*Xenopus gilli*), both species have a likelihood of occurrence and it is motivated that the proposed project could benefit the species due to the increase in aquatic habitat. For the species which tolerate disturbed habitat (e.g. Denham's Bustard (*Neotis denhami*)), the extent of the footprint is considered unlikely to have an impact related to the remaining habitat, while the other species are considered unlikely to occur due to the lack of suitable habitat. As a result the sensitivity was verified as low.

An evaluation of other potential SCCs which could occur not identified in the screening tool should also be undertaken. It is noted that there are iNaturalist records in the vicinity of the site of Denham's Bustard, Blue Cranes (*Anthropoides paradiseus*) and Cape platanna. Although the likelihood of observing

a good representation of the faunal species present in a one day fieldwork is low, species observed should still be mentioned.

A screening tool report compiled on 24 July 2026 indicated additional species to the screening tool report included as Appendix I. Most noteworthy in this regard is that in addition to the bird species flagged as high sensitivity, *Pseudobarbus burchelli Heuningnes* was flagged as high sensitivity, which is a threatened fish taxon discussed further below.

Freshwater Report

The freshwater report provides an overview of the proposed project and the affected environment. The Paalskloof River is the river within which the weir is proposed. Photographs of habitats/features are provided, however the locations are not indicated on a map nor fully described. Pools within the Paalskloof River are referred to with regards to fish habitat. The Paalskloof River and riparian zone are reported as in good condition. The present ecological condition of the instream and riparian habitat of the Paalskloof River is rated as B (largely natural). The gum and black wattle infestation results in a poorer condition along the river banks further downstream. The ecological importance and sensitivity is rated as very high.

The freshwater report is not framed within the context of the protocols, in which respect it should fulfil the purposes of an aquatic biodiversity assessment. The impacts of the weir are stated as small and localised, particularly in comparison to the agricultural impacts in the catchment. The impact significance is calculated numerically, with the result being a high significance, but again the impact is motivated to instead be small and localised. The discussion of the impacts indicates that there will be increased inundation upstream of the weir. The freshwater report does not however provide a detailed or explicit description of the potential change to the instream and riparian habitat at the location of the weir, which would in turn be the relevant impacts on aquatic habitat.

Apart from the impact on the habitat at the weir location, the impact on hydrology is relevant, more specifically downstream flows. The conclusion states that the winter flows will pass over the weir, while currently in summer the river does not flow, but water remains in pools, with the weir potentially allowing a new permanent pool to form.

A risk matrix is included for which four activities were identified, and each was rated as low risk. As the purpose of the weir is as a fish barrier and not for water abstraction as is typically the case, Section 21 (a) water use is not applicable, only Sections 21 (c) and (i) for which the risk matrix is appliable. Therefore, only a General Authorisation is required with regards to the National Water Act.

Fish Specialist Comment

The fish specialist comment indicates that fish surveys undertaken within the Paalskloof River by the applicant have revealed good populations of three indigenous fish taxa, namely the South Coast Clade

of the Cape kurper (*Sandelia capensis*) and two Cape Galaxias lineages, namely the endangered and near endemic Agulhas Galaxias *Galaxias sp. nov. 'Heuningnes'* and the mountain Galaxias *Galaxias sp. nov. 'nebula'*. According to the landowner, the endangered and endemic Agulhas/Heuningnes redfin *Pseudobarbus sp. 'Heuningnes'* used to occur on the property up until 20 years ago, but was extirpated by alien invasive fish species, namely spotted bass (*Micropterus punctulatus*)

The Paalskloof River was selected for rehabilitation as the only tributary in the Nuwejaars River system which is nearly free of alien invasive species, has good water quality and instream habitat. Although the alien invasive fish species are likely not present upstream of the weir, if any are encountered, they will be eradicated using mechanical methods such as fyke, gill and seine nets, and electrofishing. Further potential objectives of the project will be to implement formal conservation for the section of river upstream of the weir and to reintroduce the Agulhas/Heuningnes redfin. We wish to note that the Agulhas/Heuningnes redfin appears to prefer pool habitat rather than runs and riffles habitat and therefore the habitat upstream of the weir will likely be suitable for this species if a conservation translocation is undertaken.

With regards to the impacts, the only negative impact identified is the prevention of access of indigenous fish species downstream of the weir to upstream sections, however most indigenous fish downstream have been eliminated by alien invasive fish and therefore would be a very minor impact. The creation of a permanent sanctuary for indigenous fish will be a significant positive impact.

As stated above the fish specialist comment should have been framed within the context of the animal species theme and as indicated in the presence of the Agulhas/Heuningnes redfin in the screening tool and should conform to the requirements of the protocols. The outcome and recommendations are however supported. It should be noted that the implementation of barriers to invasive aquatic species have proven to be an effective intervention to prevent deleterious impacts on indigenous species locally and internationally, and as indicated in the fish specialist comment, the proposed project is modelled on successful examples from the Cederberg (Rahel 2013).

The proposal for formal conservation is supported. As rivers are linear systems traversing multiple properties, conserving them can be more complicated than terrestrial systems. It is further noted that there is intact Elim Ferricrete Fynbos on the property to the south of the weir which has a high likelihood of being conservation-worthy. Potential options that can be investigated are the options within the CapeNature Stewardship Programme (Nature Reserve, Protected Environment, Biodiversity Agreement) or Other Effective Area-Based Conservation Measures (OECMs). While the site is already within the Nuwejaars Special Management Area (SMA) which has been approved as an OECM, a more targeted conservation measure may be appropriate for the project objectives.

Design Report

The design report provides an overview of the proposed design of the weir which is also relevant in assessing the impacts, and is modelled on the successful Cederberg examples. The location of the

weir was specifically selected to maximise the benefit to fish habitat upstream while minimizing the impact on riparian and instream habitat which also is more efficient for construction effort.

A hydrological study was used to inform the project design. As indicated above, the summer flow is reduced to standing pools of water. It was initially proposed that the weir would be 1 m in height, however would not provide sufficient elevation as an invasive fish barrier during flood conditions with the flat topography, therefore the height is designed at 2 m. The structure is mainly composed of gabions with a concrete foundation and capping to prevent undercutting and abrasion respectively. A stilling basin is proposed directly downstream to prevent erosion. A plastic membrane is placed on the upstream side of the structure to prevent formation of gaps which may allow fish to pass through.

As the design of the weir is aimed at providing an effective barrier for invasive fish species it is supported. One aspect we wish to query is whether there may be any reduction in the normal flow of water downstream of the weir outside of flood conditions and if this has been quantified. Also, an estimate of the expected increase in inundation area would be informative.

The mitigation hierarchy must be applied in addressing impacts, in which regard the first step should be applied for the potential impact on the *L. laxum* individuals, namely avoid. We wish to note that experience of pre-construction search and rescue of fynbos shrubs to date has provided evidence of a high failure rate. Translocation is likely the least successful methodology and if it were to be implemented, propagation of seeds and cuttings is likely to be more successful. The preferred option is always avoidance and protection *in situ*. We therefore recommend that the individuals should be plotted and micro-siting of the weir to avoid the specimens should first be investigated. If individual cannot be avoided, the impact of the loss should be assessed.

It may however be useful to include a plan for propagation of the species if the property is proposed for formal conservation, which can aim for restoration of disturbed areas which will not be used for cultivation, including planting out of the *L. laxum* specimens. It should however first be established what the current population on the broader property is. We recommend that experts with proven experience in propagating the species should be consulted to ensure the best methodology is used, particularly since the species is an obligate reseeder/serotinous.

Conclusion

In conclusion, CapeNature supports the proposed weir as it will result in a positive impact on indigenous fish species at risk from alien invasive fish. However, we recommend that there is investigation of micro-siting of the weir to avoid impacting on the local *L. laxum* population in accordance with the mitigation hierarchy. The site sensitivity verification should be updated in accordance with the specialist studies and an up to date screening tool report, and there should be further evidence of compliance with the protocols.

CapeNature reserves the right to revise initial comments and request further information based on any additional information that may be received.

Regards

Rhett Smart

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Rhett Smart
For: Manager: Landscape Conservation Intelligence South

cc. Dr Martine Jordaan, CapeNature

References:

Rahel, F.J. 2013. Intentional Fragmentation as a Management Strategy in Aquatic Systems. BioScience. 63: 362–372. ISSN 0006-3568