

**TERRESTRIAL BIODIVERSITY  
ENVIRONMENTAL SENSITIVITY REPORT  
FARM REDFORD NO. 232 PORTION 17  
REDFORD FARMS, THE CRAGS  
BITOU MUNICIPAL AREA**

DEA&DP REFERENCE:14/1/1/E3/4/10/3/L1168/21



View of the excavation within a watercourse

Benjamin Walton for Cape Vegetation Surveys

Peet Joubert for Nature Management Services

Reviewed by Mark Sasman *Pri.Sci.Nat.* SACNASP Environmental Science  
(400185/04) Ecosense / Bluepebble Consulting Environmentalist

o.b.o. the applicant Denina Bernard

June 2021

## STATEMENT OF INDEPENDENCE

I, Benjamin Alan Walton, trading as “Cape Vegetation Surveys”, in terms of section 33 of the NEMA, 1998 (Act No. 107 of 1998), as amended, hereby declare that I provide services as an independent botanical specialist and receive remuneration for services rendered for expressing a factual account of the baseline environment. I have no financial or other vested interest in the project. Botanical information contained in the report may not be copied without the author’s consent.

### An abridged Curriculum Vitae:

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Experience: Cape Vegetation Surveys: Consulting Botanist 2017-2020

Western Cape Nature Conservation Board (CapeNature), Scientist: Land Use Advisor 2010-2017;

Department of Environmental Affairs and Development Planning, Principal Environmental Officer (George) 2008-2010;

Cape Vegetation Surveys: Consulting Botanist (Cape Town) 2006-2008;

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## (1) Introduction and Terms of Reference

The terms of reference is to conduct a vegetation survey to confirm the vegetation unit and conservation status; and describe the vegetation and sensitivity, with reference to the fynbos forum ecosystems and NEMA specialist guidelines. This is to inform the environmental impact (botanical and terrestrial sensitivity) of the alleged unlawful clearance of vegetation (Pre-compliance Notice & PreDirective: 14/1/1/E3/4/10/3/L1168/21) within Tsitsikamma Sandstone Fynbos habitat and riparian zone of a watercourse; and identify risks, suggest mitigation and make recommendations for implementation of a rehabilitation plan. The sensitivity of the study area at Farm Redford No. 232 Portion 17 at the Craggs (see Figs. 1 & 2) is described in context of existing land use (set-aside natural area) and suitability of installation of an in-stream storage dam.



Figure 1: Locality map for Farm Redford No. 232 Portion 17 at the Craggs (image courtesy of Google Earth)

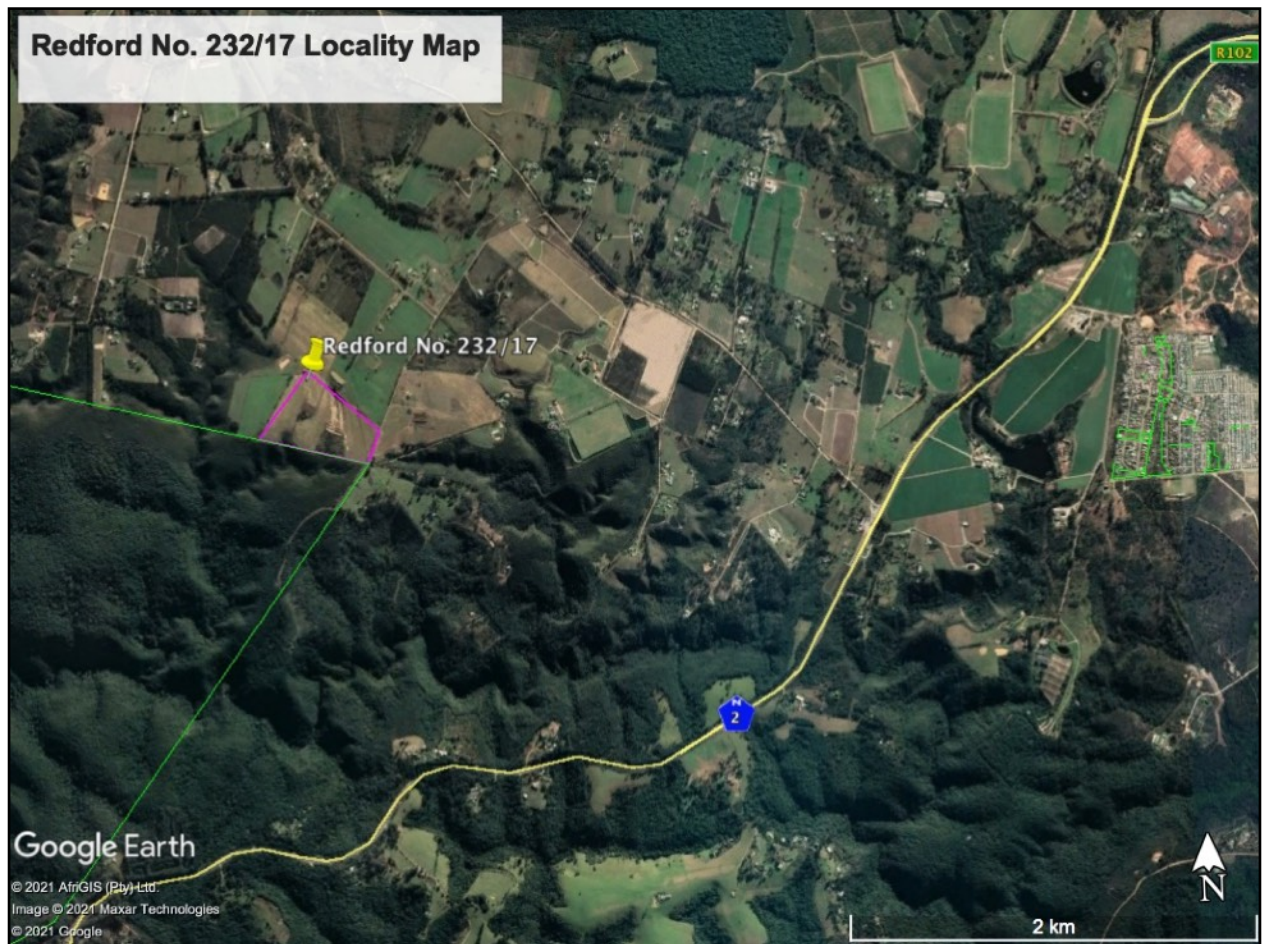


Figure 2: Locality map for Farm Redford No. 232 Portion 17 at the Craggs (image courtesy of Google Earth)

## **Checklist of minimum requirements for reporting:**

### **1 Scope of assessment - screening tool**

The DFEE screening report generated for Farm Redford No. 232 Portion 17 at the Craggs for “transformation of land - indigenous vegetation” identified, *inter alia*, that a terrestrial biodiversity assessment be undertaken based on the Very High Terrestrial Biodiversity Sensitivity of the area; with a Medium Plant Species Sensitivity. This report complies with the minimum requirements for terrestrial biodiversity assessments<sup>1</sup>.

### **2 Site sensitivity verification and minimum content requirements**

The current land use and site sensitivity was ascertained to confirm and / or refute the findings of the screening tool report.

**2.1.** The site verification was undertaken by the authors as specialists; and reviewed internally by a registered specialist to comply with the protocol and criteria for assessments.

**2.2.** The site area was analyzed using desktop satellite imagery (Google Earth and Cape Farm Mapper), and geo-referenced biodiversity informants viewed and verified in Quantum GIS (QGIS) prior to and following a preliminary investigation.

**2.3.a.** The current land use at the property is agricultural on pasturelands, with natural areas containing Sandstone Fynbos and Riparian vegetation of varying ecological sensitivity. This report describes the vegetation status and sensitivity occurring within the verified remaining fynbos within the study area which is a mixture of Sandstone Fynbos and Riparian vegetation of Very High Terrestrial Biodiversity Sensitivity with a Medium Plant Species Sensitivity. Thus an impact on biodiversity occurred.

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<sup>1</sup> Government Gazette No. 43110, GN No. 320 (2020) National Environmental Management Act, 1998 (Act No. 107 of 1998) Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of section 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorization..



## (2) The property and location

Farm Redford No. 232 Portion 17 (14.14 ha in extent) is zoned Agriculture Zone I and situated on a level plateau area with a watercourse dissecting the centre draining south and overlooking the upper section of the Whiskey Creek catchment area at the Craggs. The property is accessed at the Craggs west of the National Route N2 along Redford Road (see Figs. 1 & 2). Portion 17 where clearance of vegetation and transformation of habitat occurred is hereinafter referred to as the “study area” (see Figs. 3 and 4). Portion 17 is flanked on either side by two other properties owned by the applicant. Portion 18 at west has the headstart of another watercourse draining firstly eastwards then southwards; whereas Portion 12 contains the dwelling unit and bounds on another watercourse draining eastwards, as part of the upper catchment area for Whiskey Creek.



Figure 4: Showing transformation of land within the watercourse.

The largest part of the area below the surrounding mountains has been transformed from natural Fynbos vegetation for crop cultivation of Vineyards, Macadamia or Almond nut cultivation. The remaining area has artificial pasturelands for livestock and dairy farming. Recently Honeybush tea cultivation has been introduced into the area.

Many of the properties have small in-stream earthen dams in the catchments, thereby altering and reducing natural stream flow volumes. Macadamia nut cultivation requires extensive contoured lands and water for production as intensive agriculture.

Historical animal populations would have been displaced or significantly altered by the removal of the indigenous vegetation in favour of agricultural land cover.

The study area on the northern fringe of the Whiskey Creek Protected Area consists mainly of grazing lands covered with *Eragrostis curvula*. The shallow valleys dipping towards Whiskey Creek still retain some Fynbos and Forest remnants on some of the farms around the study area and they are usually infested with Alien Invasive Species.

A small section of natural vegetation between the proposed dam and the southern property boundary was still somewhat undisturbed except for the removal of Black Wattle and large Pine trees.

### **(3) Provisions of Acts related to vegetation clearing activities**

The **National Environmental Management Act (NEMA) EIA Regulations of 2014<sup>2</sup>**, as amended, stipulates that, in terms of Listing Notice 1 activity 27, if more than 1 hectares (10 000 m<sup>2</sup>) of indigenous vegetation is cleared then a Basic Assessment application for

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<sup>2</sup> Government Gazette No. 38282, GN No. 982 (2014) National Environmental Management Act, 1998 (Act No. 107 of 1998) Environmental Impact Assessment Regulations.



environmental authorization is required. The excavated area is more than 1 hectare in extent.

As defined in the EIA Regulations “indigenous vegetation” refers to “*vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.*”

The National Forest Act (NFA), 1998 (Act No. 84 of 1998), as amended, stipulates that i.t.o. section 15(1), a licence is required to (a) *cut, disturb, damage or destroy any protected tree*, or (b) *possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, or any forest product derived from a protected tree*. No Protected Tree species occur within the study area.

#### **(4) Assessment and reporting of impacts on terrestrial biodiversity**

##### Baseline description of the site with the following features

(4)(1) The ecological processes affecting a fynbos type ecosystem are largely dependant on aspect, soil patterning and fire frequency, which may be affected in part by loss of habitat due to transformation and suppression of fire processes. Fynbos is dependant on fire for plant succession and turnover of species occupying the same niche with different lifecycles and times of maturity, thus contributing to overall plant species richness. Bulbous flowering plant species thrive and flower following wildfires in the absence of dominant shrubs excluding or reducing light. Thereafter shrubs continue to grow in succession and representative fynbos elements like Proteaceae, flower and hold seed following their maturity cycle of up to 15 years. Fire intervals of less than 15 years, or less than the maturity lifecycle of locally occurring species are detrimental to succession and recruitment of seedlings. The remaining Fynbos occurring at the property is within the watercourse area and flanking slopes.

- (4)(2) Primary ecological functioning and processes that operate within the site are characteristic of natural to near-natural fynbos and forest, as a haven for pollinators, avifauna and small and large mammals.
- (4)(3) 2.3.3. The activity has altered some connectivity of vegetation and wildlife refuge and movement corridors.
- (4)(4) 2.3.4. The property is within significant terrestrial landscape features of Very High Sensitivity namely a Strategic Water Source Area (SWSA) and FEPA.

#### (5) Freshwater Ecosystem Priority Areas (FEPAs)

“Description of significant terrestrial landscape features like SWSAs, FEPAs”.

This report concerns the terrestrial biodiversity features of the property; and does not purport to document the fine-scale aquatic features at the property; refer to the aquatic biodiversity sensitivity report in that respect. The area is indicated by the screening tool as having a Very High Relative Aquatic Biodiversity theme, as a Strategic Water Source Area (SWSA) and FEPA.

Although no FEPA Wetlands or FEPA Rivers are identified at the subject property it is situated within a **River FEPA** and associated sub-quaternary catchment area draining southwest via a tributary to Whiskey Creek then *Largely Natural* Keurbooms River and Estuary (PES: Class B; a **Wetland FEPA**).

Measures should therefore be implemented to prevent erosion and increased storm water runoff and pollutants from impacting on land, groundwater and surface watercourses.

## THE BIODIVERSITY IMPORTANCE OF THE SITE AND SURROUNDING RECEIVING ENVIRONMENT<sup>3</sup>

### (6) Vegetation description

According to the updated Vegetation Map of South Africa, Lesotho & Swaziland the main mapped vegetation unit occurring at the property and within the stay area (see Fig. 5) is: Least Threatened Tsitsikamma Sandstone Fynbos (FFs 20).

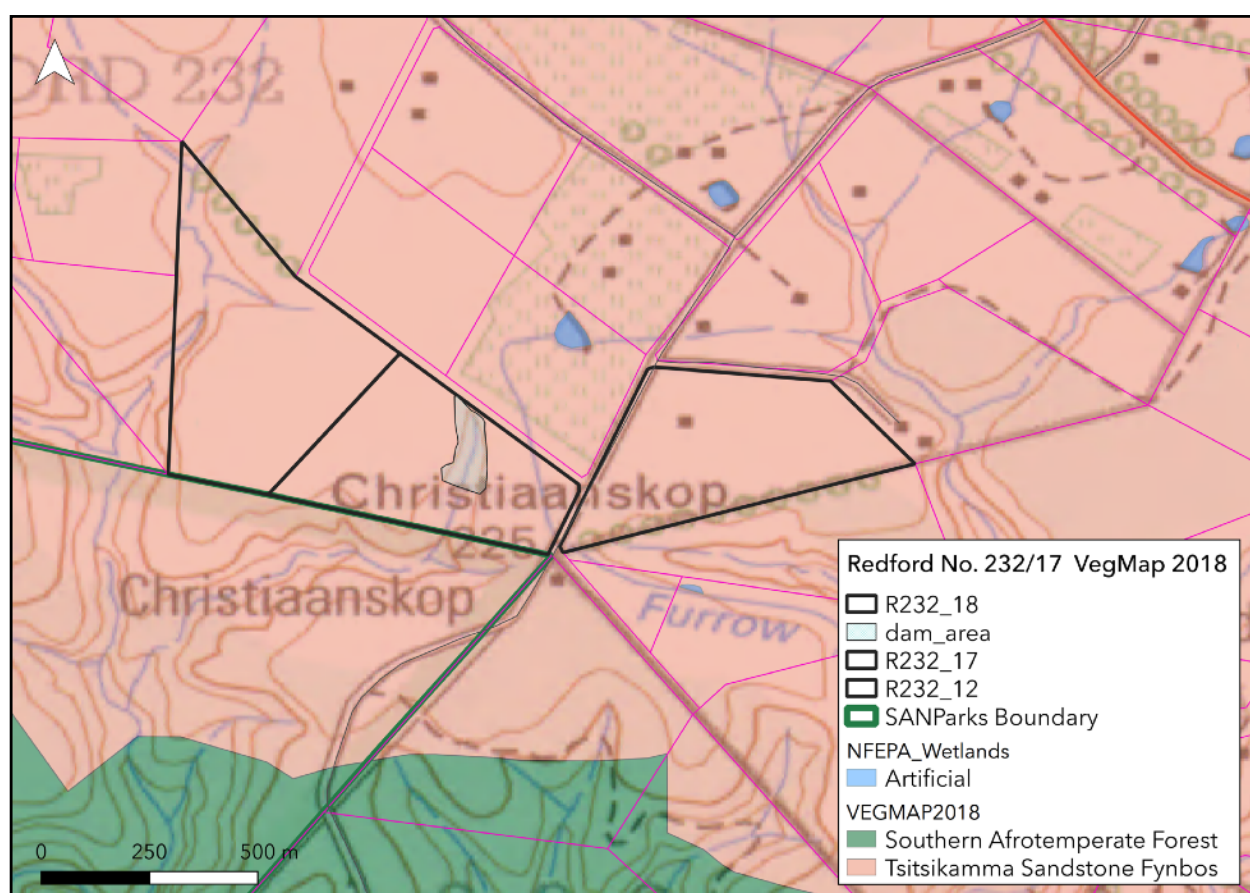


Figure 5: The property in context of the National vegetation units within Tsitsikamma Sandstone Fynbos.

<sup>3</sup> As prescribed by the minimum requirements for reporting of terrestrial biodiversity and ecosystems on site a description is provided: a) main vegetation types; b) threatened ecosystems and local habitat types; c) ecological connectivity, fragmentation, ecological processes and fine-scale habitats; d) species, distribution, important habitats and movement patterns identified"

The composite fine-scale Vegetation Map for the Garden Route (Vlokmap) delineated broad habitat types with associated vegetation variants, here as: *Tsitsikamma Plateau Proteoid Fynbos* matrix dissected by *Tsitsikamma Perennial Stream* (the latter indicating drainage line vegetation patterning; see Fig. 6).

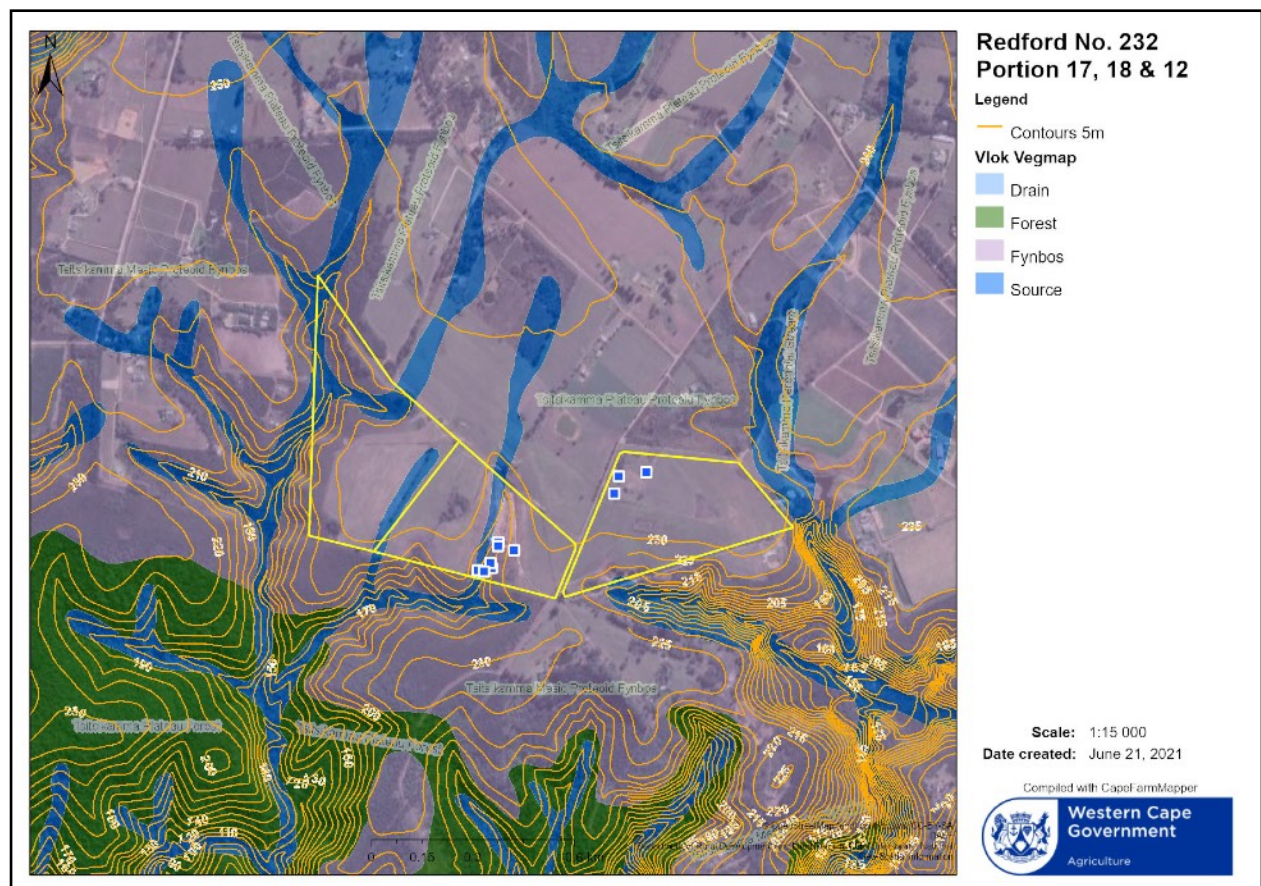


Figure 6: The study area in context of the fine-scale vegetation map for the Garden Route, within *Tsitsikamma Plateau Proteoid Fynbos* and dissected by *Tsitsikamma Perennial Stream*.

The property is mostly a level plateau with an incised watercourse on Portion 17 draining south and another at Portion 18 draining southwest. The affected area is at the head start of a tributary stream draining towards Whiskey Creek, with level wet seepage areas at the plateau top.

There appears to be no species of special concern within the study area containing plant species representative of fynbos and riparian ecosystems (see Appendix 1). The screening tool mapped the study area as having a Very High Terrestrial Biodiversity Sensitivity and Medium Plant Species sensitivity.

It appears that some riparian vegetation with forest elements or single trees occur within the study area, and were affected by the clearing of vegetation and excavation of habitat land. Forest here, where present, is attributed to have a Moderate Terrestrial Biodiversity Sensitivity Regionally.

## THE BIODIVERSITY IMPORTANCE OF THE AREA IN CONTEXT OF THE LANDSCAPE PERSPECTIVE

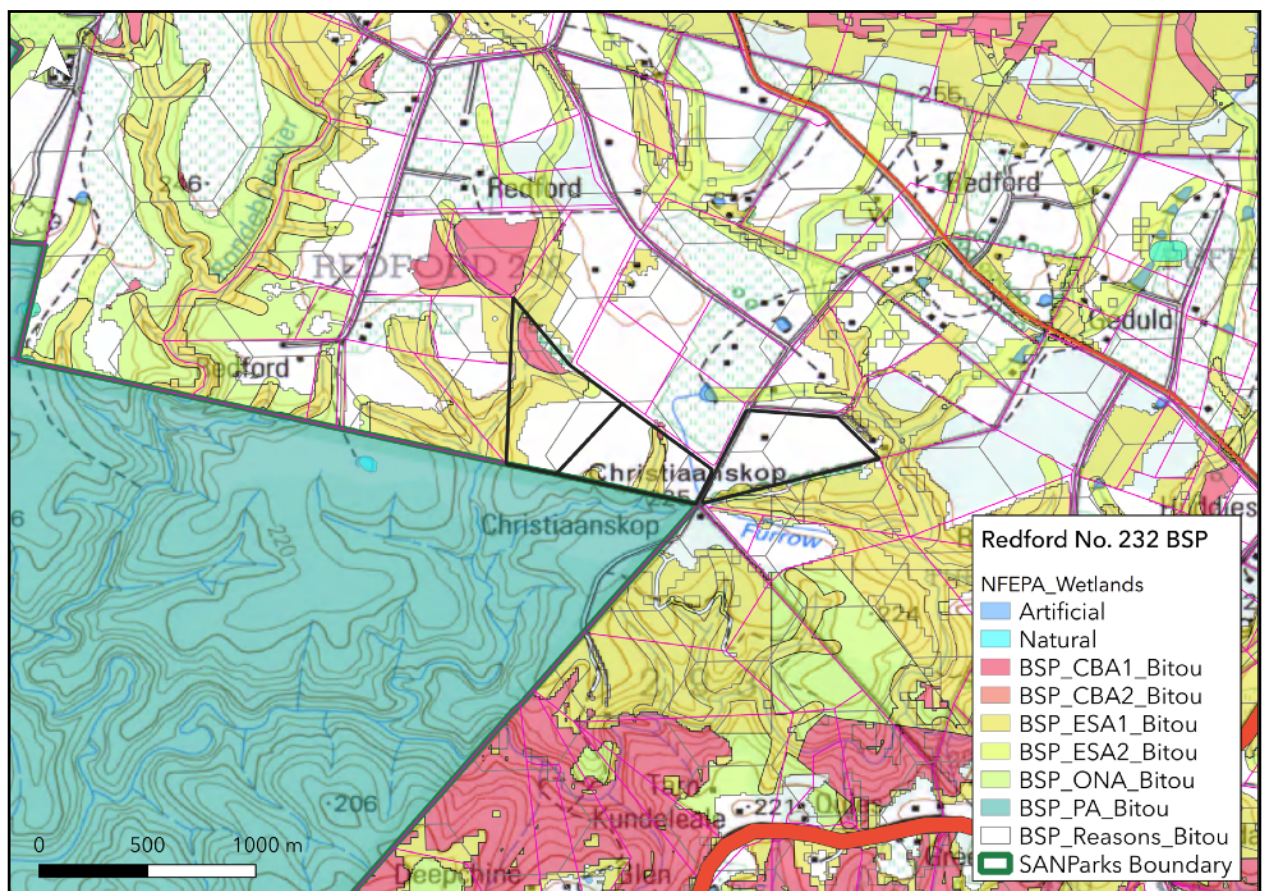


Figure 7: The property locality (black polygons) in context of the Biodiversity Spatial Plan, 2017, and FEPA Wetlands.

## (7) The Biodiversity Spatial Plan<sup>4</sup>

The Biodiversity Spatial Plan has identified important remaining biodiverse sites across the Province and indicates that sections of the property and specifically the receiving environment are within sensitive areas (see Figs. 7, 8 and 9). The property abuts the Keurbooms section of the Garden Route National Park, managed by SANParks.

The northwestern extent of Portion 18 is mapped as containing a primary terrestrial Critical Biodiversity Area (CBA 1); the receiving environment at Portion 17 contains a primary aquatic Ecological Support Area (ESA 1; watercourse area) fringed by a secondary terrestrial (ESA 2); based on the following specific geographic features:

- (7)(1) Cape Mountain Zebra;
- (7)(2) Tsitsikamma Plateau Proteoid Fynbos (Vlok variant- CR);
- (7)(3) Tsitsikamma Sandstone Fynbos (LT);
- (7)(4) Upland-lowland interface;
- (7)(5) Water source protection- Keurbooms;
- (7)(6) Watercourse protection- South Eastern Coastal Belt.

The specific geographic features mentioned above pertain to the regional importance of the landscape and associated watercourses, vegetation and their protection. The property is important as a water source area connecting the upland to the lowland diverse habitats. The property is also a vital area of connectivity for pollinators, avifauna and small and large mammals.

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<sup>4</sup> <http://bgis.sanbi.org/Projects/Detail/194>

### The prescribed conservation management objectives for CBAs:

Primary CBAs are areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.

The prescribed management objective for these sensitive areas, as well as in terms of the Duty of Care principle (section 28 of the NEMA), is to maintain the habitat in a natural or near-natural condition, and prevent further loss of habitat. Where degraded- those areas should be rehabilitated; and only low-impact, biodiversity-sensitive land uses are appropriate.

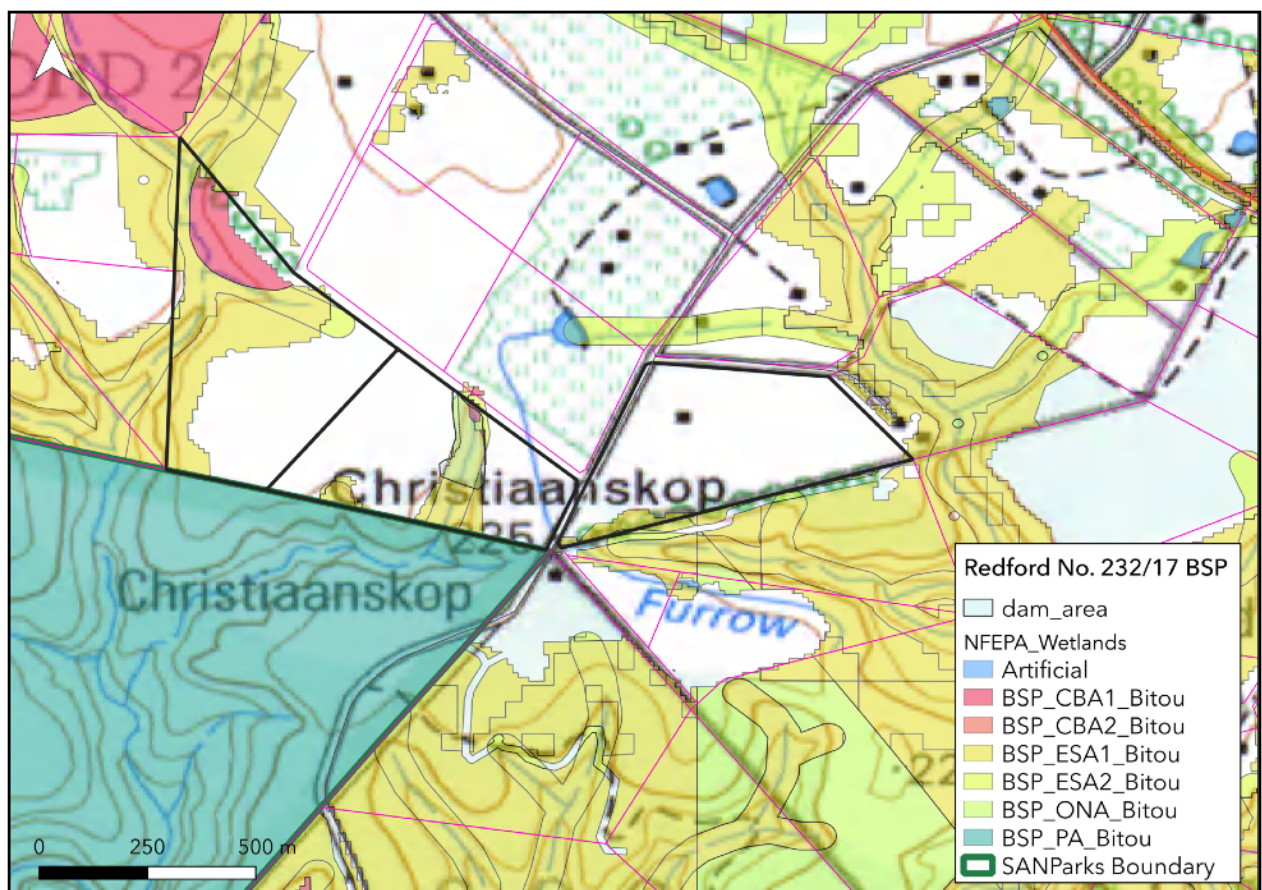


Figure 8: The receiving environment in context of the Biodiversity Spatial Plan, 2017, within a primary Ecological Support Area (ESA 1).

The prescribed conservation management objectives for ESAs:

Primary ESAs are areas that are not essential for meeting biodiversity targets, however they are important for supporting the functioning of Protected Areas or CBAs, and are often vital for ecosystem service delivery.

Thus primary ESAs should be maintained in a functional, near-natural state, and occur here overlaying the watercourse. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.

Secondary ESAs are areas that are not essential for meeting biodiversity targets, but play an important role in supporting the functioning of Protected Areas or Critical Biodiversity Areas, and are often vital for delivering ecosystem services. The secondary ESA surrounds the primary ESA being a watercourse area.

These areas are prescribed to be restored from other land use and / or managed for minimal impacts on ecological processes and ecological infrastructure functioning, especially soil and water-related services, and to allow for faunal movement.

The areas higher upslope and onto the plateau are transformed pasturelands surrounding the watercourse on either side; and are not sensitive areas.



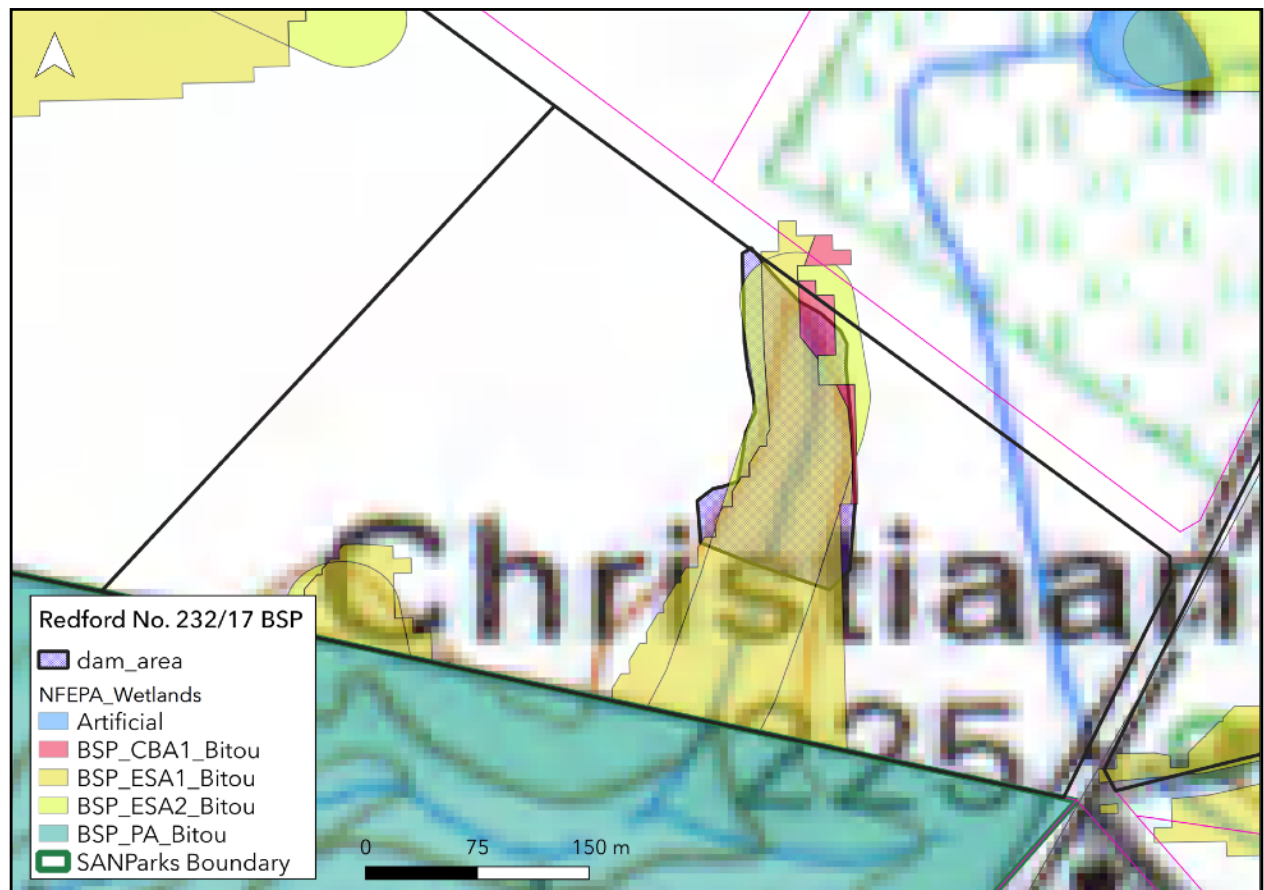


Figure 9: The receiving environment in context of the Biodiversity Spatial Plan, mostly within an Ecological Support Area with a small primary Critical Biodiversity Area at the head start of the tributary.

## (8) Site inspection identification and findings of assessment

### Assessment and reporting of impacts on terrestrial biodiversity<sup>5</sup>

(8)(1) A small terrestrial Critical Biodiversity Area (CBA) occurs at the study area.

(8)(1)(1) The reasons why it's a CBA are explained above.

(8)(1)(2) The proposed activity is inconsistent with CBA designation management objectives.

<sup>5</sup> Government Gazette No. 43110, GN No. 320 (2020) National Environmental Management Act, 1998 (Act No. 107 of 1998) Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of section 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorization..

- (8)(1)(3) The proposed activity has impacted on species composition and vegetation structure of vegetation of Moderate Terrestrial Biodiversity Sensitivity.
- (8)(1)(4) The impact will not elevate the ecosystem threat status of the remaining extent of Least Threatened Tsitsikamma Sandstone Fynbos.
- (8)(1)(5) The impact on subtypes is unknown.
- (8)(1)(6) The impact on overall species and ecosystem diversity of the site is of medium intensity.
- (8)(1)(7) The impact on threat status of species of special concern is unknown based on the plant species observed.
- (8)(2) The study area is an Ecological Support Area overlaying the watercourse.
  - (8)(2)(1) Ecological services within and across the site have been and will be impacted by the activity.
  - (8)(2)(2) The activity has had a very high impact locally on ecological processes and ESA functionality.
  - (8)(2)(3) The proposed activity may reduce ecological connectivity at the surrounding areas.
- (8)(3) The proposal is not within an Environmental Management Framework area.
- (8)(4) The property is adjacent to the Keurbooms section of the Garden Route National Park managed by SANParks.
- (8)(5) The property is within a Strategic Water Source Area.
- (8)(6) The property is within a River Freshwater Ecosystem Priority Area.
- (8)(7) The proposal has had an impact on the ecological integrity of indigenous fynbos and riparian elements at the property.

## SITE SENSITIVITY VERIFICATION

### (9) Baseline description of biodiversity and ecosystem condition

Based on the site inspection and ground surveying conducted on the 17<sup>th</sup> of June 2021 the property is situated atop a level plateau area with an incised valley bottom area at Portion 17. The plateau areas are mostly old pasturelands, with gardened areas near the existing dwelling unit at Portion 12. The study area where clearance of vegetation occurred contained sandstone fynbos with some remaining downstream of the cleared area (see Figs. 10 & 11). Large *Pinus pinaster* trees were recently felled within the fynbos habitat. A checklist of observed plant species is included here as Appendix 1.



Figure 10: Showing a section of cleared area at the southern extent of the study area, with fynbos vegetation.

### Fynbos habitat on sandstone soils: (moribund in part, 8 metres tall)

The community of fynbos species at the study area is composed of: *Agathosma ovata*; *Andropogon* cf. *eucomus*; *Anthospermum spathulatum*; *Berzelia abrotanoides* (Redleg Kolkol); *Bobartia*; *Eragrostis curvula*; *Erica discolor* (Discolorous Heath); *Erica sparsa* (Spartan Heath); *Erica uberiflora* (Over Heath); *Euclea polyandra* (Baboon Gwarrie); *Ficinia* spp.; *Halleria lucida* (Tree Fuschia); *Helichrysum* spp.; *Kiggelaria africana* (Wild Peach); *Leucadendron eucalyptifolium* (Gumleaf Conebush); *Leucadendron salignum* (Common Sunshine Conebush); *Lobelia neglecta*; *Metalasia brevifolia* (Shortleaf Blombush); *Montinia caryophyllacea* (*Klapperbos*); *Penaea cneorum* (*Common Brickleaf*); *Phylica purpurea* var. *purpurea*; *Protea neriifolia* (Blue Sugarbush); *Pteridium aquilinum* subsp. *aquilinum*; *Restio* cf. *tritceus*; *Rhodocoma gigantea*; *Rubus* sp.; *Searsia lucida*; *Selago corymbosa*; *Senecio* spp.; and *Ursinia anethoides*.

### Riparian elements

The abovementioned indigenous fynbos species occur here with riparian elements or forest species within the valley bottom: *Hippia frutescens*; *Laurophyllus capensis* (Iron Martin); *Nuxia floribunda* (Forest Elder); *Olea capensis* ssp. *macrocarpa* (Ironwood); *Rapanea melanophloeos* (Cape Beech); and *Searsia chirindensis* (*Bostaaibos*).

### Invasive Alien Species

*Acacia mearnsii* (Black Wattle; CARA 2002 - Cat. 2; NEMBA - Cat. 2); *Pinus pinaster* (CARA 2002 - Cat. 2; NEMBA - cat. 1b). These two species need to be prevented from spreading at the property.

Based on aerial imagery from 2019 it appears that the study area was not previously transformed.

There are approximately 61 plant species observed within the study area of which 14 are within the riparian zone and 2 are Invasive Alien Species.



Figure 11: Showing the old field and an area of >1 ha cleared of vegetation (image courtesy of Google Earth).

## (10) Avifaunal and Faunal diversity

There were no animals observed during the site visit. All observations were made from spoor and signs of activity on the ground. The accuracy of the information is with 60% degree of confidence due to the short time of the site inspections and the nature of the terrain (Peet Joubert, per. comm.).

### Possible animals on site

Grey Duiker                      *Sylvicapra grimmia ssp. grimmia*

Bushbuck                        *Tragelaphus scriptus ssp. sylvaticus*

Water Mongoose      *Atilax paludinosus* (scat seen on the dam wall of earth near the destroyed wetland).

Cape Genet *Genetta tigrina* (Latrine seen under a rock overhang).

Cape Clawless Otter *Aonyx capensis* ssp. *capensis* (Scat with freshwater crab shells).

Cape Gray Mongoose *Herpestes pulverulentus* (recorded from the neighbouring reserve and footprint).

Honey Badger *Mellivora capensis* ssp. *capensis* (Assumption from sighting in the area).

Porcupine *Hystrix africaeaustralis* (Diggings and quills found in study area).

Southern Bushpig *Potamochoerus larvatus* ssp. *koiropotamus* (Droppings and rooting marks).

### Birds

African Little Bittern *Ixobrychus minutus* ssp. *payesii*

Cape Spurfowl (Cape Francolin) *Pternistis capensis*

Southern Hadedda *Bostrychia hagedash* ssp. *hagedash*

Western Cattle Egret *Bubulcus ibis* ssp. *ibis*

Egyptian Goose *Alopochen aegyptiaca*

Southern Yellow-billed Duck *Anas undulata* ssp. *undulata*

Fynbos Southern Double-Collared Sunbird *Cinnyris chalybeus* ssp. *chalybeus*

Spotted Eagle-Owl *Bubo africanus*

## (11) Assessment of Impact

The study area (see Fig. 9) according to the BSP is mapped as sensitive for having the following features: primary terrestrial CBA (Critically Endangered Vegetation Variant); and primary and secondary ESAs (Watercourse area) to be conserved and rehabilitated. The alleged unlawful clearance of vegetation has impacted on an ESA containing indigenous Tsitsikamma Sandstone Fynbos and Riparian elements.

From a Botanical perspective the condition of the fynbos / riparian mosaic at the receiving environment is of **Medium Terrestrial Biodiversity Sensitivity** with a **Medium Plant Species Sensitivity**.

Thus the clearing of approximately 1.2 ha of disturbed near-natural fynbos of **Medium Terrestrial Biodiversity Sensitivity**, and transforming the habitat, is a negative impact for local habitat functioning and potential negative impact for land management.

The **impact is site specific** in extent to the study area and surrounding adjacent environment.

However the activities will have impacts on land and watercourse functioning downstream if erosion is unmanaged.

The **duration** of the impact is permanent should a water storage dam be constructed at the site; and with mitigation and partial rehabilitation the impact will be of a medium term with vegetation succession.

The impact is of **medium intensity** (disturbed fynbos / forest) on biodiversity and a small amount of pattern and process will be altered or lost by construction of a water storage dam.

The impact on pristine fynbos habitat is **probable** based on the history of non-agricultural use at the property.

The impact on fynbos habitat and effect on biodiversity, predicted with a **High** level of confidence in the assessment, is of **medium significance**.

## (12) Pre-Directive Notice requirements

In addition to the minimum requirements for reporting on biodiversity the department issued the following terms of reference:

(12)(1) *investigate, assess and evaluate the impact on the environment;*





Satellite imagery from Google Earth dated 2019 was used to calculate the cleared area of approximately 1.21 ha (see Fig. 12). The remaining section within the study area south of the excavated area should be maintained as natural fynbos vegetation.

Rehabilitation or restoration of the habitat and reducing the impacts on ecological processes and structural functioning is key for functional ecosystem services of watercourses and indigenous vegetation, and also allowing for movement of avifauna and fauna.

However due to the scale of the excavation within the watercourse any proposed rehabilitation measures to return the site to its original state and condition will be difficult. The topsoil piles remaining are now highly valuable and important as a seed source for rehabilitation. Rehabilitation of the upper parts of the slopes will be easier to achieve than at the valley bottom. The now exposed differing substrates will potentially be unsuitable for some fynbos species; and potentially better for succulent plant species. In that sense the habitat has been entirely transformed.

## OPTIONS AND RECOMMENDATIONS FOR MANAGEMENT

### (13) Environmental Risks

#### Increased potential for stormwater erosion

As the terrain and soils are highly erodible the excavated area will exacerbate erosion by stormwater runoff, and siltation in stream lower down.

Storm water from the upper slopes should be carefully managed to avoid erosion of the soft substrate on site. Excess runoff must be managed to avoid erosion to the valley bottomland and watercourses.

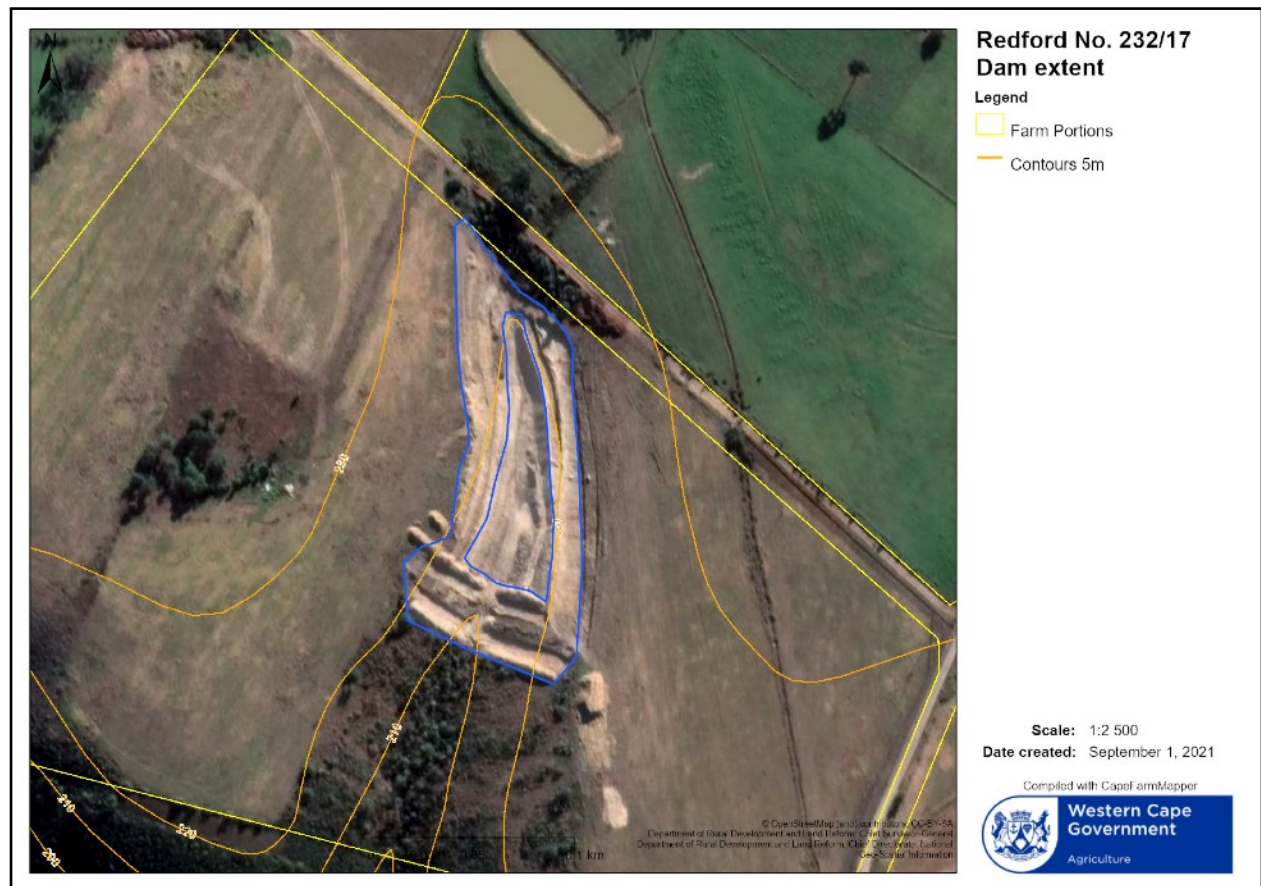


Figure 13: Showing the study area and recommended extent of the dam perimeter at the 220 contour interval (image courtesy of Cape Farm Mapper ca. 2019).

#### (14) Conservation and Rehabilitation

The Redford Farms area is important for conservation of biodiversity and maintenance of ecological and structural functioning and associated ecosystem services. Many streams drain into Whiskey Creek which feeds in to the Keurbooms River Estuary.

Restoration and reducing impacts on ecological processes and structural functioning is key for biodiversity and ecosystem services provided by indigenous vegetation and watercourses, and also allowing for movement of fauna and avifauna.

The remaining undeveloped areas at the property should be maintained in a natural state with a phased removal of existing and spreading Invasive Alien Plant Species. For properties zoned for agriculture In terms of the CARA, the owner must prevent the spread of IASs from entering or dispersing from the property.

A management objective to conserve the remainder of the fynbos habitat, and restore areas to near-natural adjacent to watercourses and agricultural fields has good potential for biodiversity conservation.

### **(15) Mitigation and Rehabilitation Guidelines**

- (15)(1) It is recommended that the proposed water storage dam be re-designed as a smaller dam allowing for rehabilitation of the upper surrounding slopes; and its capacity based on the catchment volumes at the head start of a tributary (see Fig. 13).
- (15)(2) As the entire property is generally sensitive the applicant must conduct activities carefully and reuse or relocate as much plant material as is practical prior to rehabilitation.
- (15)(3) An ECO must oversee the rescue and relocation of plant material and initial rehabilitation activities; and thereafter conduct follow up inspections.
- (15)(4) Utilize plant material and debris and stack debris into contour rows as berms to reduce wind erosion and water runoff within the excavated area as a temporary measure.
- (15)(5) A rehabilitation plan for the upper slopes of the watercourse at the study area (if reduced in size) and immediate surrounds should be compiled to guide rehabilitation.
- (15)(6) Ensure drainage and runoff is managed to prevent erosion and soil loss during the operational lifespan of the activities.

(15)(7) Prevent the spread of Invasive Alien Species from entering or dispersing from the set aside natural areas and from within the study area. Removing of Invasive Alien Species must be done carefully without the use of heavy machinery or disturbance of the indigenous vegetation. Restore the remaining fynbos and forest vegetation by removing IASs in a phased approach (from least invaded to densely invaded areas).

## Conclusion

In summary the main vegetation unit at the receiving environment is Least Threatened Tsitsikamma Sandstone Fynbos of Medium Terrestrial Biodiversity Sensitivity.

If the mitigation measures described above are conducted it is probable that the study area will have reduced downstream erosion.

As sufficient plant material exists within and around the study area there is no need to bring in plant material from other sources; and rehabilitation will require planting and seeding within the study area.

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## Declaration as a specialist

I *Benjamin Alan Walton & Peet Joubert*, as the appointed specialists hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that we:

- in terms of the general requirement to be independent:
  - other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise our objectivity; or
  - am not independent, but another specialist that meets the general requirements set out in Regulation 13 have been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- in terms of the remainder of the general requirements for a specialist, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- have disclosed/will disclose, to the applicant, the Department and interested and affected parties, all material information that have or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application;
- have ensured/will ensure that information containing all relevant facts in respect of the application was/will be distributed or was/will be made available to interested and affected parties and the public and that participation by interested and affected parties was/will be facilitated in such a manner that all interested and affected parties were/will be provided with a reasonable opportunity to participate and to provide comments;
- have ensured/will ensure that the comments of all interested and affected parties were/will be considered, recorded and submitted to the Department in respect of the application;
- have ensured/will ensure the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- have kept/will keep a register of all interested and affected parties that participate/d in the public participation process; and

- am aware that a false declaration is an offence in terms of regulation 48 of the 2014 NEMA EIA Regulations.

**Note:** The terms of reference of the review specialist must be attached.

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Signature of the specialists:

Cape Vegetation Surveys and Nature Management Services

---

Name of company:

---

Date:

Abbreviated C.V.: Petrus Alwyn JoubertPersonal particulars

Date of Birth 26/07/1947  
I.D. Number 4707265008082  
Passport PPZAF 467565289  
Postal Address P.O. Box 3746, Knysna, 6570  
Telephone 044- 3826396  
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Email [peet@bluepebble.biz](mailto:peet@bluepebble.biz)  
[peet.joubert@mweb.co.za](mailto:peet.joubert@mweb.co.za)

Qualifications

Matric 1965

Botany 3, Zoology 3, Entomology 1, Communication science 1

Completed short courses

Environmental Law P.U. for C.H.O

Certificate Environmental Management (PU for C.H.O.)

Certificate in Land use planning for protected areas (Deutsche stiftung fur Internationale Entwicklung)

Course in Integrated Coastal Management (EEU UCT)

Certificate Environmental interpretation and Education. (Rhodes)

Training Course Tourism Environmental Assessment (SEACAM)

Executive course in Community Facilitation for Partnership (Wits Graduate School of Public and Development Management)

Executive course in Social Ecology for SANParks managers (Wits Graduate School of Public and Development Management)

Environmental Management Inspector Compliance and Enforcement Training course (Traffic & DEAT)



## Work History

Technical Assistant     Department of Plant Physiology University of Pretoria (1973-1975)

Technical Assistant     National Institute for Water Research CSIR (1975-1979)

Senior Information officer     Tsitsikamma National Park (1979-1988)

Senior Information officer     West Coast National Park (1988-1990)

Park Manager     Knysna National Lake Area (1990-2007)

Private Independent Environmental Consultant (August 2007 -2021)

## Experience

Environmental Education

Community Liaison and Communication

Integrated Environmental Management

Environmental Impact Assessments

Environmental Monitoring processes

Park Management and planning:

    Marine, Estuarine, Fynbos and Indigenous Forest

    Community Development

## Present Activities

Environmental Director Garden Route Biosphere Reserve

Trustee for Pledge Nature Reserve in Knysna

Environmental Consultant

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