Wetland Rehabilitation and Maintenance Management Plan:

Proposed Somerset West Hotel and Casino, Portion 29 of Stellenbosch Farm No. 794, Somerset West, City of Cape Town

Prepared for:

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Glossary[1]

Biodiversity: The number and variety of living organisms on earth, the millions of plants, animals and micro-organisms, the genes they contain, the evolutionary history and potential they encompass and the ecosystems, ecological processes and landscape of which they are integral parts.

Buffer: A strip of land surrounding a watercourse or riparian area in which activities are controlled or restricted, in order to reduce the impact of adjacent land uses on the watercourse or riparian area.

Delineation (of a watercourse): To determine the boundary of a watercourse based on soil, vegetation and/or hydrological indicators.

Groundwater: Subsurface water in the saturated zone below the water table.

Habitat: The natural home of species of plants or animals.

Hydrology: The study of the occurrence, distribution and movement of water over, on and under the land surface.

Hydromorphic: Plants adapted to living in above-normal levels of soil saturation

[1] As provided by DWA (2005) and WRC Report No. TT 434/09.

Macrophyte: A large plant - in watercourse studies usually a large plant growing in shallow water or waterlogged soils.
Perennial: Permanent - persisting from year to year.
Shrub: A shrub is a small to medium-sized woody plant.
Watercourse (NWA definition):

(a) A river or spring;
(b) A natural channel in which water flows regularly or intermediately;
(c) A watercourse, lake or proposed housing development into which or from which water flows; and
(d) Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse.

Acronyms

CCT	City of Cape Town
DWS	Department of Water and Sanitation
NEMA	National Environmental Management Act
NWA	National Water Act
PES	Present Ecological State
REC	Recommended Ecological Category
RMMP	Rehabilitation and Maintenance Management Plan
SANBI	South African National Biodiversity Institute
WUA	Water Use Authorisation

1 INTRODUCTION & BACKGROUND

Portion 29 of Stellenbosch Farm No. 795(the "Property") has been rezoned to Subdivisional area overlay zone with underlying rights for General Business 3 from the City of Cape Town (CCT) which allows for the proposed Somerset West Hotel and Casino. The Property is located near the N2 in Somerset West (see Figure 1). The Property contains a wetland system (see Figure 2) and as such a condition of the approval is that "*a Wetland Rehabilitation and Management Plan, compiled by a suitably qualified and experienced specialist, be submitted to the E&HM Branch for approval, prior to building plan approval or the commencement of earthworks, whichever comes first and that such plan be implemented by a suitably qualified and experienced specialist*".

A Water Use Authorisation (WUA) in terms of the National Water Act (NWA, Act 36 of 1998) is also outstanding for certain aspects of the proposed hotel and casino development, given that the proposed development entails Section 21 c and i activities. The authority with competency for the NWA, the Department of Water & Sanitation (DWS), confirmed in 2018 that, based on the risk assessment contained in a freshwater specialist report by WSP (2017) and an updated freshwater specialist report by Everwater Freshwater Consulting Services (2016), the proposed development would be subject to a General Authorisation (GA). A Wetland Rehabilitation and Maintenance Management Plan (RMMP) would comprise a key document in support of the registration of the GA with DWS. Both the WSP (2017) report and the Everwater (2026) recommended the compilation of a Wetland RMMP as a key mitigation measure and provided the required scope of the plan (see Section 2).

Tsogo Sun has accordingly appointed EnviroSwift Western Cape ("EnviroSwift") to prepare the required Wetland RMMP. This report comprises the Wetland RMMP and has been prepared in accordance with the both the CCT requirements and the requirements of the NWA.



Figure 1: Site Location Plan for the proposed Somerset West Hotel and Casino.



Figure 2: Watercourse Delineation Map for Portion 29 of Stellenbosch Farm No. 794 (Courtesy WSP, 2017).

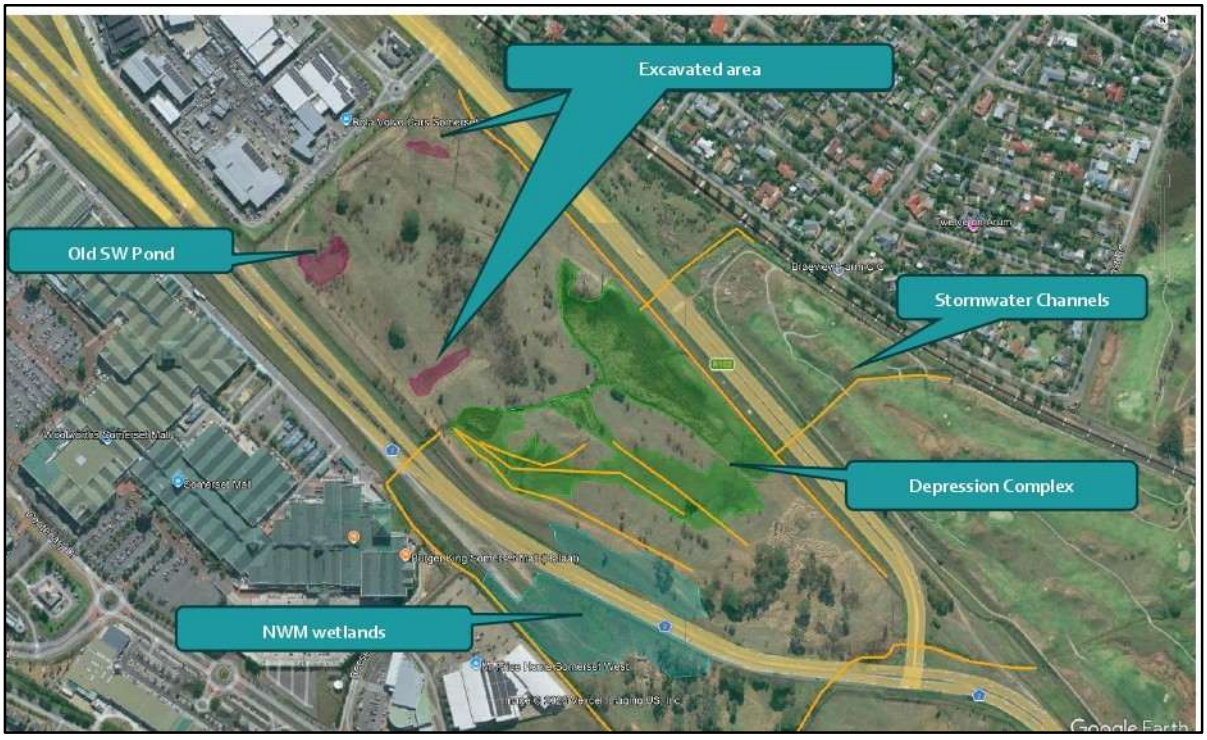


Figure 3: Watercourse Delineation Map for Portion 29 of Stellenbosch Farm No. 794 (Courtesy Everwater, 2026).



Figure 4: Watercourse Delineation Map for Portion 29 of Stellenbosch Farm No. 794 with recommended buffers and development proposal indicated (Courtesy PHS Consulting, 2026).

2 SCOPE OF WORKS

The Scope of Works for the preparation of the Wetland RMMP is prescribed initially in the Freshwater Habitat Assessment conducted by WSP (2017) wherein the following is stated that the plan shall include, but not be limited to:

- Detailed rehabilitation methodology;
- Details for potential structures proposed within existing systems to assist with the prevention of further erosion and improve flooding of wetland systems;
- Methods for the removal and control of alien invasive plant species within the wetland and riparian areas;
- Assessment of current vegetation species within the study site;
- Proposed plant species to be utilised for rehabilitating in the wetland and/or riparian areas; and
- Monitoring requirements to assess how successful the rehabilitation techniques are within the systems.

The Scope of Works for the preparation of the Wetland RMMP is also prescribed in the Everwater report (2026) as follows:

- The ecological condition of the wetland complex should be enhanced through the removal of alien invasive plant species and the rehabilitation of disturbed areas using locally indigenous wetland vegetation.
- Upon completion of construction, all disturbed areas should be stabilised through mulching, erosion-control matting, revegetation with indigenous species, or other suitable rehabilitation measures to minimise the risk of ongoing sediment generation.
- Maintenance activities should include the regular removal of debris and accumulated sediment from the connecting channels to ensure the continued movement of water between wetland areas and the effective functioning of the stormwater system.
- A monitoring programme should be implemented to periodically assess wetland vegetation, hydrology, and water quality. Monitoring results should be used to guide adaptive management interventions aimed at maintaining the wetland in its target ecological condition of C/D and preventing further ecological degradation. This should be included in a formal Maintenance and

Management Plan.

Secondarily the CCT, as a condition of the land use approval, provided the following Terms of Reference for the required Plan – "*A Wetland Rehabilitation and Management Plan, compiled by a suitably qualified and experienced specialist, be submitted to the E&HM Branch for approval, prior to building plan approval or the commencement of earthworks, whichever comes first and that such plan be implemented by a suitably qualified and experienced specialist*".

3 SPECIALIST QUALIFICATIONS

Nick Steytler, owner of EnviroSwift Western Cape, is a SACNASP registered environmental scientist and has expertise in freshwater ecology and environmental restoration. For further information in this regard the CV of the specialist is provided in Appendix A.

4 LIMITS AND ASSUMPTIONS

The limitations and assumptions that apply to this project are provided below:

- The findings of the WSP (2017) study and the Everwater (2026) study are assumed to be correct insofar as the following is concerned:
    - The artificial origin of the wetland is assumed to be correct;
    - The scope of rehabilitation is assumed to be acceptable to the competent authority (DWS) and the CCT;
    - While being artificial the wetland complex does not have a reference condition. Despite this fact the target PES of improving the current PES of C/D is the aim for the rehabilitation plan
- Part of the undeveloped site currently provides a regional stormwater attenuation function. Given that the pond which provides some of this capacity will be infilled and developed upon as a result of the proposed development, the remaining portion of the proposed site to the east that will not be developed will provide this capacity. The area that provides this capacity encroaches upon the proposed buffer. Buffers temporarily saturated by excess stormwater as a result of regional stormwater attenuation would have an elevated soil wetness which could cause die-back of the terrestrial species recommended for the buffer as these species may not adapted to living in seasonally saturated soils. It is assumed that this aspect presents no limitation in respect of the success of wetland rehabilitation.
- This plan does not address the planting of the buffer areas as this area is terrestrial in nature and as such falls outside the expertise of the freshwater specialist.
- Given that Landmark has been appointed as the Landscape Architect, EnviroSwift's primary focus would be to provide the rehabilitation and maintenance and management specifications and Landmark will incorporate these in the preparation of the Landscape Plan which will provide a diagrammatic representation of the Rehabilitation Plan.

5 LEGAL CONTEXT

5.1 NWA

Given that the requirement for the Wetland RMMP has in part arisen as a supporting technical documentation for a WUA, the NWA and in particular Regulation 509 of 2016, provides the key regulatory context for the compilation of this Wetland RMMP.

The requirement for River (including wetlands) Management Plans is specified under Paragraph 6 (i) (iv) of Regulation 509. In summary this states that when undertaking river and infrastructure associated with rivers which constitute Section 21 (c) and (i) water use activities, one may conduct river and stormwater management activities provided they are incorporated in a River Management Plan. The river and stormwater management activities must only be associated with LOW risks to the resource quality of the watercourse and supporting technical documentation must be included in the River Management Plan to ensure this is the case. The River Management Plan must be submitted to the relevant regional DWS office or Catchment Management Agency office.

Appendix B of outlines a method for developing the River Management Plan as well as the information requirements of a River Management Plan. The recommended method is as follows:

- Identify the River Management Plan domain which should preferably be an entire catchment;
- Identify who the custodian / implementing agent should be (ideally an accountable, unbiased and representative body);
- Identify all the key stakeholders;
- Determine discrete and practicable river management units;
- Identify the major drivers of river disturbance and instability;
- Include completed Risk Assessments using the DWS Risk Matrix for identified mitigation activities;
- Engage with the key stakeholders and determine their priorities and objectives in relation to the management of the watercourse;
- Define best practice measures for rehabilitation and maintenance of the watercourse;
- Include an ecological monitoring programme linked to the river management objectives determined through the stakeholder consultative process;
- Set out an implementation programme and a review mechanism.

The recommended information requirements of a River Management Plan are as follows:

- An impact assessment and mitigation report completed by an independent consultant;
- Relevant specialist reports supporting the proposed mitigation measures that address the level of modification/risk posed to the resource quality in terms of flow regime, water quality, geomorphological processes, habitat and biota of the watercourses and contain Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) data for the watercourse;
- An Environmental Management Plan giving effect to all actions required to mitigate impacts;
- Best practices applicable to these activities, where applicable;
- Norms and Standards where available;
- Monitoring Programme that must include “present day” conditions to be used as base line values;
- Monitoring, auditing and reporting programme (reports to be sent upon request to the regional office or CMA office); and
- Internalised controls and auditing, where applicable.

5.2 NEMA EIA Regulations

In terms of the NEMA EIA Regulations (2014, as amended) the maintenance and management of watercourses (such as sediment removal, bank reshaping, clearing debris from culverts and the removal of alien and control of problem vegetation) may require prior environmental authorisation unless the activities are undertaken in accordance with an authority-adopted Maintenance Management Plan (MMP). To provide guidance on the information and procedural requirements of an MMP, the competent authority (DEA&DP in the Western Cape) issued an Information Document for the Development of Maintenance Management Plans for a Watercourse in July 2017. The Information Document was prepared to ensure that the request for adopting MMPs for watercourses in the Western Province are undertaken to the sufficient standard and requirements of the competent authority. Specifically, the Information Document prescribes the following:

- The purpose of the MMP is to maintain both man-made and ecological infrastructure in a manner that either improves the current state of and/or reduces the negative impacts on a watercourse to ensure that ecosystem services are preserved/improved and to prevent further deterioration of the watercourse;
- Notwithstanding the MMP being adopted by the competent authority any other applicable statutory requirement must still be complied with (e.g. any obligations under the NWA and the Conservation of Agricultural Resources Act, Act 43 of 1983);
- The MMP must provide a strategic overview of the Need for the MMP (i.e. indicate how the MMP will contribute to furthering sustainable practices and reducing and/or mitigating the need for maintenance).
- Regardless of the sufficiency of the expertise of the proponent or other professionals acting on behalf of the proponent, the appointment of an EAP for the compilation and submission of the final MMP to the competent authority is still required.
- The Information document also provides guidance on the scope of Public Participation which requires consultation with all riparian landowners and relevant authorities and similar to the

requirements of a River Management Plan as contemplated in Regulation 509 of 2016 recommends the establishment of a stakeholder representative implementing agent in circumstances when there are multiple riparian landowners and relevant authorities.

5.3 Existing Municipal River Management and Maintenance Plans

The CCT conducts routine river and stormwater management and maintenance activities in the rivers under its jurisdiction in accordance with an Environmental Management Programme (EMPr) which presents standards for the undertaking of a number of routine maintenance and management measures on its surface stormwater features such as such as rivers, watercourses, canals, dams and ponds and is intended to guide the manner in which these activities are executed.

The EMPr initially received environmental authorisation from DEA&DP on 13 February 2015 as part of a Basic Assessment Process which included various technical reports including specialist studies. The validity of this environmental authorisation is questionable as it has a 10-year validity period (i.e. expired in February 2025). There have been a number of subsequent amendments of the EMPr, largely to include estuaries within the CCT.

The EMPr outlines the roles and responsibilities, identifies the management and maintenance priorities, specifies best practice management and maintenance activities and the prescribes the monitoring and auditing requirements. The EMPr also gives guidance and presents minimum performance conditions which will be used to compile waterbody-specific Maintenance Plans for all areas where maintenance and management measures will be undertaken.

Given that the watercourses on the site are not identified as such on the relevant CCT databases, presumably due to them being identified as an artificially created system, the CCT EMPr does not address the maintenance of the on-site wetlands.

6 REHABILITATION PLAN

6.1 Aims of Rehabilitation

The most recent specialist assessment (Everwater, 2026) indicated that the current PES of the wetland complex was C/D and that the aim of rehabilitation was to improve the PES (i.e. reach at least a PES of C). In order to achieve this PES the following is recommended and detailed in this Wetland RMMP:

- Minor bank reshaping to reduce the slope of channels and banks;
- Eradication of alien invasive species from the site;
- Revegetation with suitable indigenous plants; and
- Long term maintenance and management of the planted wetland vegetation, ongoing eradication of alien invasive plants, control of *Typha capensis* and removal of excess sediment and debris/solid waste from channels, culverts and other stormwater infrastructure associated with the wetland system and located within the site.

Sections 6.2 to 6.5 below provide a detailed rehabilitation methodology that includes the techniques and timing involved in adequately addressing each of these requirements.

6.2 Bank Reshaping

The banks of the wetland ponds and interconnecting channel all exceed a 1:2 slope and in places, in particular the interconnecting channel, have a bank slope of 1:1. Ideally bank slopes should not exceed 1:8 but in this case, with the wetland complex being artificial and the spatial constraints brought about by the development to the west of the wetland complex and the requirement of the land to the east providing a regional stormwater attenuation function, it is considered pragmatic to aim to achieve a bank of slope of 1:4 or greater (i.e. less of a slope than 1:4). An example of such a slope is presented in Figure 5.



Figure 5: Wetland rehabilitation underway in the Noordhoek Wetlands. Note the reshaped bank of the pond in the background which is estimated to be in the region of a 1:4 slope indicated by the white arrow.

6.2.1 Background

It is mandatory for all landowners to control listed invasive alien species in terms of the National Environmental Management Biodiversity Act (Act 10 of 2004). The most prevalent species occurring on the site is *Acacia saligna* (Port Jackson) which is a Category 1a alien invasive species which applies to species that present the greatest threat to South Africa's biodiversity and water resources. While there is evidence of historical alien clearing on the site, given the strong likelihood that a viable seed bank exists, *A saligna* and other alien invasives will become re-established on the site if alien clearing does not continue. Monitoring for the emergence of seedlings and early eradication of the alien invasive species would therefore be the key focus of rehabilitation.

6.2.2 Alien Invasive Plants occurring within the site

In addition to *A. saligna*, there are an additional two species of listed alien invasive plants on the site, *Cortaderia selloana* (Pampass grass) and *Pennisetum clandestinum* (Kikuyu grass). The methods to control these species is presented in Table 1. For further guidance on alien vegetation control please refer to Martens *et al*. (2021).

Table 1: Invasive species control measures.

	Activity	Details	Aim	Frequency and Timing	Risk and Comments
1	*Acacia saligna* (Port Jackson)	All mature *Acacia saligna*. must be felled. Stumps must be treated within 5 minutes of felling with a herbicide containing Trychlophyr as the active ingredient (such as Trychlon) in an appropriate mix (3% for Trychlon) with water and an indicator dye only. No diesel or other substances may be added. The herbicide may be applied by painting or spraying the stump, but in either case it must be applied without spillage. Young trees must be removed by hand-pulling tree popping, or by felling with loppers, hand saws or chainsaws, and stumps treated as for mature trees if complete removal is not possible.	Category 1b - Eradicate from the site.	Initial clearing is to take place in year 1 between November and March and occurs once. Herbicide application should not take place when rain is predicted within 24 hours as rain may reduce herbicide effectiveness and may wash herbicide onto other plants.	Herbicide spillage is the only significant risk, and it is limited in scale to the spillage site and immediate surrounds. Vehicles must remain on existing roads and must not enter the area to be rehabilitated.
2	*Cortaderia selloana* (pampass grass)	Dig out remaining clusters after construction and then dig out emergent clusters periodically.	Category 1b - Eradicate from the site.	The removal of the emergent clusters should be undertaken biannually.	No significant risks although removal should be by hand as the use of machinery such as an excavator would be associated with additional potentially significant impacts (e.g. sedimentation and erosion and water quality impairment).
3	*Pennisetum clandestinum* (Kikuyu grass)	Spray in low concentration and regularly (Glyphosate)	Not listed unless in a Protected Area and in wetlands in which it does not currently occur – Eradicate from wetland and buffer areas.	The removal of kikuyu should be undertaken biannually until evidence of its occurrence has been mostly eliminated.	The control of kikuyu requires persistent effort and needs to be supported by efforts to establish *Stenotaphrum secondatum* (buffalo grass) as a preferred groundcover in wetland temporary zones.
4	Follow-up and maintenance clearing of	Search the site for all known invasive plant species and note new invasive plant species. Remove by appropriate methods as detailed in points 1 - 3 above. Take time-stamped photographs of the aliens removed and watercourse area each time it is inspected or cleared.	Eradicate invasive plant species from the site.	Inspect the site and in particularly the watercourse on a six-monthly basis.	Some damage of planted vegetation may occur during operations. Any die-back of the planted vegetation should be replanted in accordance with planting methods indicated in this plan.

6.3 Planting and Seeding

Re-establishing appropriate indigenous hydrophytic vegetation within the various soil saturation zones of wetlands (see Figures 6, 7 and 8) and terrestrial vegetation within the buffer would contribute towards improving the PES of the wetland. It also improves the ability of the wetland to assimilate phosphates, nitrates and toxicants and establishes habitat for aquatic biota. Only species adapted to the various hydrological regimes of the wetland zones should be planted. For the depression wetland complex the dominant zone is the permanently saturated zone and indicated by broad swathes of *Typha capensis*. Given the dominance of *T. capensis* in this zone, it is not considered pragmatic to increase the species diversity in the permanent zone. Accordingly, all species listed would be adapted to the narrow seasonal/temporary zone which lie at the wetland edges. The bank reshaping discussed in Section 6.2, which aims to reduce the slope of the banks of the ponds and channels, would increase the area of the seasonal and temporary wetland zones.

6.3.1 Procurement

Plants must be procured of good local genetic stock. Bagged plants of appropriate genetic stock may be purchased in limited quantities either from the Fynbos Life Nursery (082 378 9445) or from the Kirstenbosch Botanical Gardens nursery (021 797 1305), for wind or bird-dispersed species.

6.3.2 Species

A preliminary species list has been compiled and is presented in the table below. Species already occurring at the site are prioritised, given their likely survival. Plants of all the listed species should be locally available. Planting should be guided the species included in the list above, but other suitable species such as the species indicated in Figures 7 and 8 are accepted. Species should be planted in the correct habitat (permanent zone versus seasonal versus temporary zone) in accordance with the specialist knowledge of the implementing agent.

Table 2: Preliminary list of indigenous species for planting in the watercourse.

SPECIES		
Permanent Wetland Zone	**Seasonal Wetland Zone**	**Temporary Wetland Zone**
Cyperus papyrus	*Cyperus textilis*	*Cenchrus caudatus*
Prionium serratum	*Cyperus denudatus*	*Cynodon dacylon*
Juncus kraussii	*Eleocharis dregeana*	*Stenotaphrum secundatum*
Restio subverticillatus	*Zantedeschia aethiopica*	*Neesenbeckia punctoria*
	Pauridia aquatica	*Pycreus polystachios*
	Ficinia nodosa	*Cliffortia ferruginea*
	Elegia tectorum	*Pycreus polystachios*
	Orphium frutescence	*Plecostachys serpyllifolia*
	Juncus effusus	
	Scirpoides thunbergii	
	Gladiolus angustus	
	Watsonia marginata	
	Watsonia meriana	

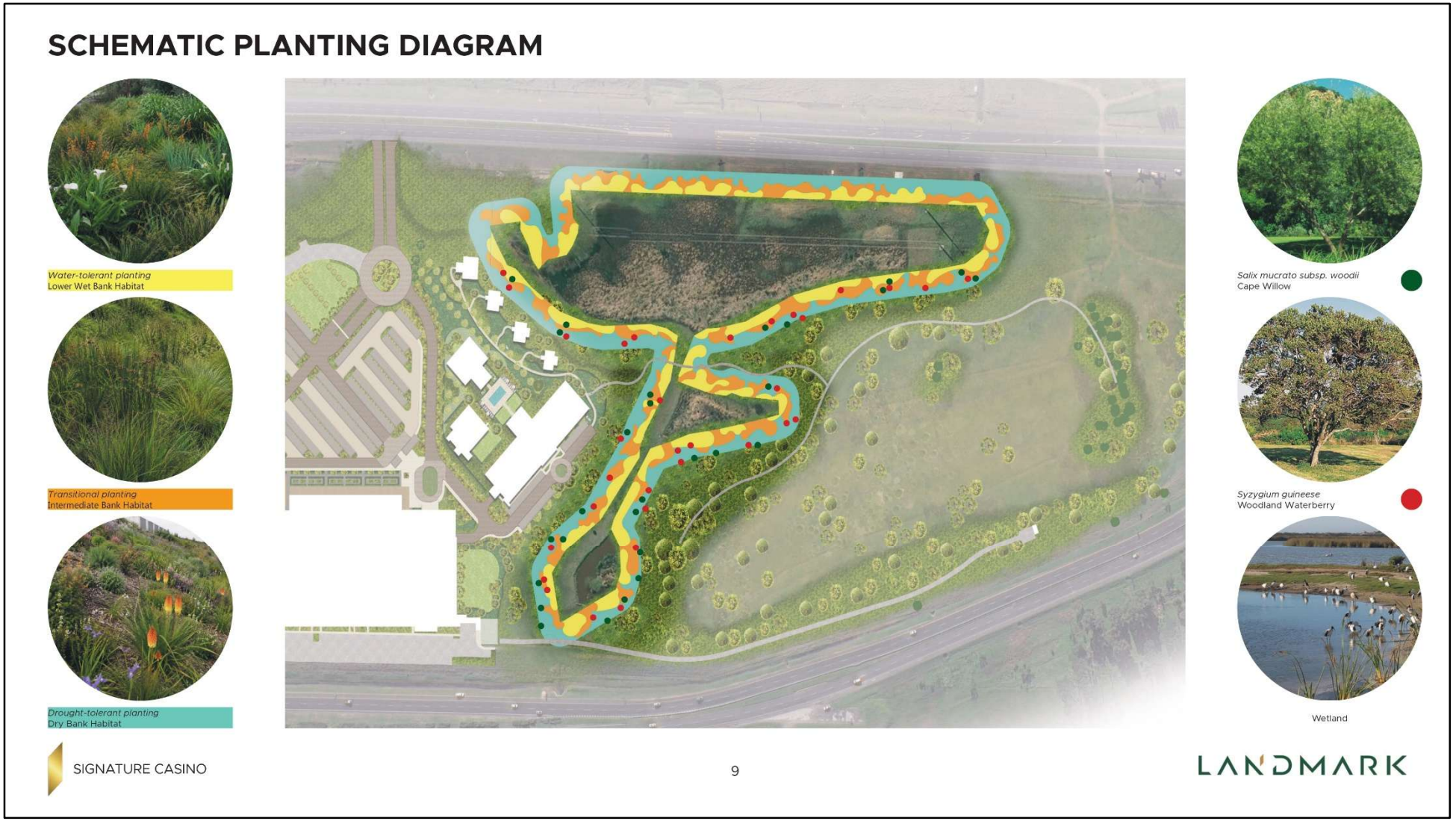


Figure 6: Wetland Rehabilitation Plan showing the various zones of saturation associated with the artificial wetland.

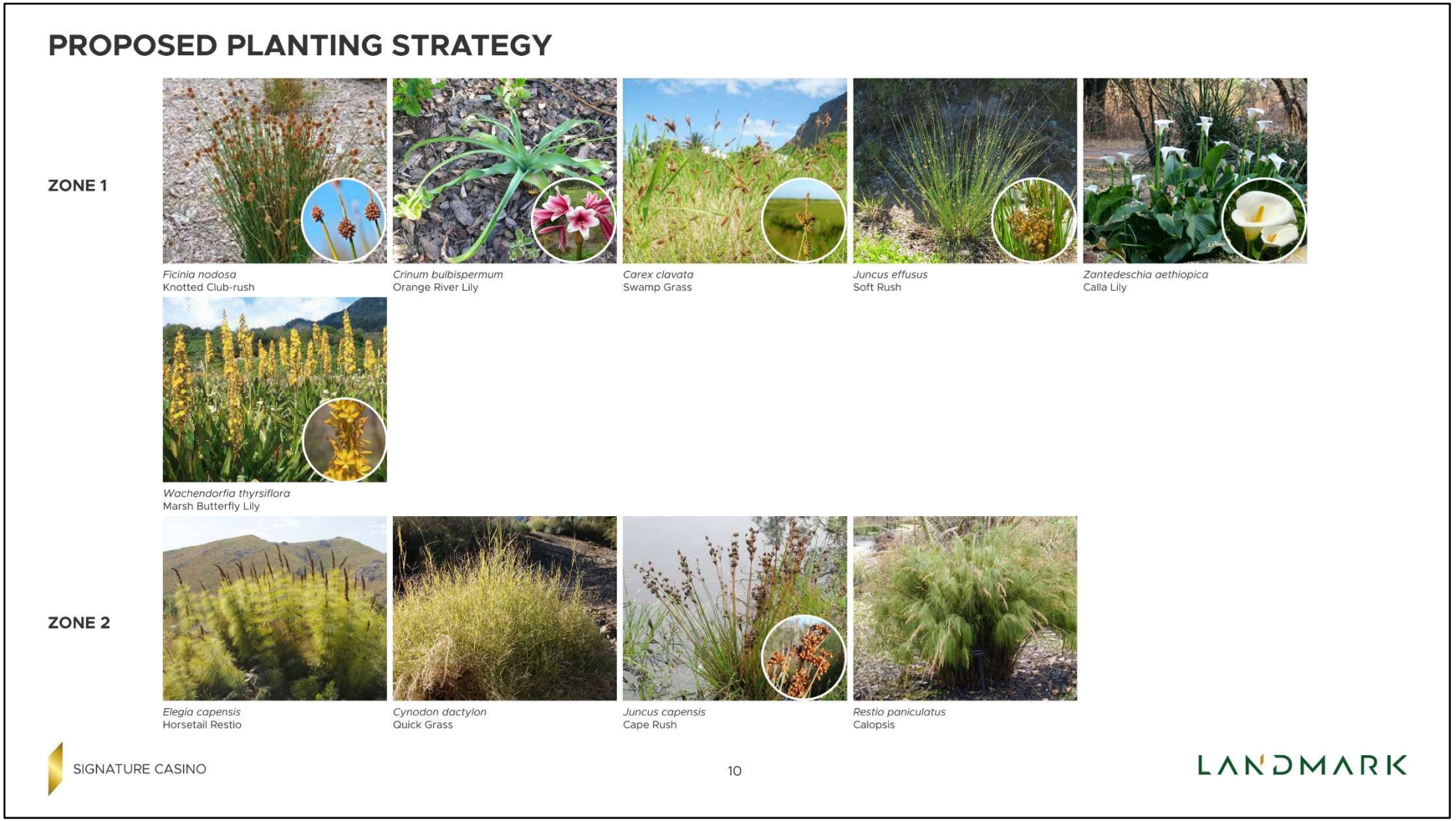


Figure 7: Wetland Rehabilitation Plan showing zones 1 & 2 and proposed species for planting.



Figure 8: Wetland Rehabilitation Plan showing zone 3 and proposed species for planting as well as tree species for planting.

6.3.3 Techniques

Planting:

- Plant in May and June.
- Dig a square hole by hand using a spade for each plant. The hole should be twice the width of the plant's container and about 1.2x the depth.
- Remove the plant from its bag/container and loosen the roots slightly by hand without damaging them.
- Place the plant in the hole and replace the soil originally removed, ensuring that the replaced soil forms a slight depression with the plant in the centre of the depression.
- Do not water after planting.

6.3.4 Care After Planting

It is essential that the following after care measures are implemented in the revegetated and seeded areas:

- Inspect the wetland once per month until indigenous vegetation cover has reached 80%. Should 80% cover not be reached within 12 months, seek professional advice.
- No watering or fertilization is required or permitted.



Figure 9: Photograph showing an example of a successful wetland planting scheme. Note the separate plantings within the various wetland zones as indicated (white stippled area – permanent zone; green stippled area – seasonal zone; yellow stippled area – temporary zone.

6.4 Compliance Monitoring

Fixed point photography can serve as a record of general compliance with the rehabilitation plan. The landowner must monitor the site by means of fixed-point photography during the rehabilitation process and also in perpetuity to monitor alien invasive vegetation encroachment as well as the build-up of debris and streambank and channel erosion. Photographs must be taken at face height while standing at each position indicated in Figure 10 and in the direction indicated. A relatively wide-angle lens of 25 to 32mm or equivalent must be used such that the field of view remains consistent. Photographs are to be taken monthly for the duration of the construction and rehabilitation phase and thereafter on an ad-hoc basis whenever any significant maintenance and management activities as set out in this plan are undertaken. Records (i.e. photographs and any correspondence/reports relating to the environmental management of the site) must be kept by the landowner and made available to the authorities (see Section 7.4.2) for compliance auditing purposes.



Figure 10: Position of the 4 fixed point photography points indicated by white arrows.

6.5 Role-players for Rehabilitation

Implementation of this rehabilitation plan requires the collaboration of several role players. The appropriate role of each entity is clarified in Table 3 below.

Table 3: Roles and responsibilities

Role Player	Responsibility
Landowner(s)	• Overall responsibility for implementation of the RMMP. • Appointment of the implementing agent. • Operational phase maintenance of landscaping as well as alien invasive plant control, solid waste and debris removal and implement erosion control measures on an ad hoc basis under supervision of a suitably qualified freshwater ecologist.
Appointed Landscaper	• Compilation and implementation of Landscaping Plan. • May undertake landscaping maintenance at the request of the landowner(s).

Independent ECO	• Oversee the implementation of a site-specific EMP for the duration of the construction and landscaping phase. No role during the operational phase.
DWS	• Competent Authority with overall compliance oversight.

The implementation of the rehabilitation plan can be undertaken by almost any agent with prior experience in wetland rehabilitation and/or indigenous landscaping as the requirements of the plan are easily achieved provided the plan is effectively implemented.

6.6 Schedule for Rehabilitation

Ideally all rehabilitation activities within the delineated wetland area (primarily removal of invasive alien plants and revegetation) should take place during the dry summer season with planting taking place just prior to the onset of the rainy winter season. It is accepted that other timing factors may override these less critical scheduling requirements. If the timing is such that it is not possible to plant just prior to the onset of the rainy season then irrigation of the revegetated areas will be required for the first 6 months or less if the rainy season is overlaps the 6-month establishment phase.

7 MAINTENANCE AND MANAGEMENT PLAN

7.1 Application

This Maintenance and Management Plan will apply after the landscaping/rehabilitation plan has been fully implemented, and in perpetuity thereafter.

7.2 Desired State

The wetland should be managed in such a way that the improvement in PES achieved through implementation of the rehabilitation plan. Given that the current PES is a C/D, the desired state is at least a Category “C” PES.

7.3 Objectives

The following maintenance and management objectives must be reached in order to ensure that the desired state of the wetland (improvement in PES) is maintained:

- Maintenance of indigenous wetland vegetation;
- Control of *Typha capensis*;
- Eradication of alien invasive vegetation;
- Timeous removal of solid waste and debris from within the wetland area, and
- Control of erosion in a manner that the PES is maintained or improved.

7.4 Roles and Responsibilities

7.4.1 Management

Day to day implementation of this management plan (including funding thereof) will be undertaken by the owner(s) of the site. The landowner may appoint a service provider to implement this management plan in part or whole, but the responsibility remains that of the landowner to ensure that the management plan is implemented.

7.4.2 Compliance Monitoring

- There is no requirement for the landowner(s) to appoint an environmental professional to provide an independent environmental oversight role during the operational phase of the development.

- The only requirement is that the landowner(s) undertake fixed point photography and maintain all records of management and maintenance activities.
- If deemed necessary by the CCT as a condition of plan approval, there may be a requirement for a site-specific EMP and appointment of an ECO for the duration of the construction and landscaping phase to oversee the actions of the Construction and Landscaping Contractors on-site.
- If deemed necessary as an outcome of the Water Use Application then the landowner(s) could commission a PES assessment of the wetland complex by a freshwater ecologist. The purpose of this assessment would be to determine whether the PES of the wetland complex had improved and not declined which would confirm that the RMMP has been effective.

7.4.3 Review

- The efficacy of the management plan to meet its objectives could be reviewed by any freshwater ecologist appointed by the landowner(s).
- If the review determines that the management plan should be amended then an application to have the amended management plan approved must be submitted to the competent authority, DWS, for approval prior to conducting any amended management activity.

7.5 Management Activities

7.5.1 Invasive Species

- The wetland must be inspected at least bi-annually to determine presence of any invasive alien species.
- All listed invasive plants and animals must be managed in accordance with the methods defined in the rehabilitation plan timeously (within 1 month of detection).
- Should new invasive species be noted that cannot be hand-pulled or tree popped, professional advice should be sought on their eradication.

7.5.2 Typha capensis

Table 4: *Typha capensis* control measures.

	Activity	Details	Aims	Frequency and Timing	Risk and Comments
1	Control of *Typha capensis*	Cut-back *T. capensis* by hand and dig out emergent clusters where the extent of the *T. capensis* beds have increased.	1. To reduce the organic material loading of the wetland as a result of *T. capensis* die-back. 2. To create opportunities for other hydrophytic species to become established. 3. To ensure that flow through the wetland complex is maintained	Every two years	Ideally *T. capensis* should be cut by hand and removed from the wetland complex. The practice of burning of *T. capensis* can be supported provided the necessary fire risk precautions are taken.



Figure 11: Photograph showing an example of *Typha capensis* control entailing hand-cutting and burning in an urban area.

7.5.3 Infrastructure

- No new infrastructure or structures may be constructed within the wetland and associated buffer area.
- All existing stormwater management infrastructure should be maintained in accordance with the maintenance specifications of the Stormwater Management Plan.
- Should the landowner wish to erect new infrastructure (e.g. gabion stabilisation baskets) then this would need prior approval from DWS and possibly DEA&DP in terms of the NWA and the NEMA EIA Regulations (2014, as amended). An Environmental Assessment Practitioner (EAP) should be consulted in the event that new infrastructure is required.

7.5.4 Erosion

- Implement erosion control measures in the event of channel erosion being detected.
- Erosion control measures may only involve 'soft' interventions such as the following:
  - Planting to be undertaken in accordance with the planting specification and list provided in the rehabilitation plan (see Section 6.2.6).
  - Disturbed areas will be vulnerable to alien and/or weedy invasion - ongoing clearing of such plants must be allowed for particularly in the early stages of plant establishment.

7.5.5 Sediment Removal

- Sediment removal from the wetland ponds and connecting channel, if required at all, should be undertaken in accordance with the following guidelines:
  - Unless dictated by the need to effect emergency sediment removal to prevent damage to property or ecosystems, sediment removal may only take place under low flow conditions and when there is sufficient time for regrowth and stabilisation of disturbed areas before the wet season;

- The manner in which sediment is removed must not cause erosion or soil compaction within the delineated wetland and buffer area (for this reason hand removal of excess sediment is recommended);
- Sediment removal activities must be managed such that the wetland is not impacted by sediment-loaded water and/or organic material passing out of the disturbed;
- Any areas disturbed as a result of sediment and debris removal must be rehabilitated to pre-activity condition or better.
- The removal of more than 10 cubic metres of sediment from within the delineated extent of the wetland complex would trigger the requirement for prior environmental authorisation in terms of the NEMA EIA Regulations (2014, as amended) and as such should not be undertaken without consulting the services of an Environmental Assessment Practitioner (EAP).

7.5.6 Solid Waste & Debris Removal

- Solid waste and debris removal from the depression wetland complex should be undertaken in accordance with the following guidelines:
  - Remove solid waste and debris by hand annually at the end of the wet season and also immediately after and major rainfall event;
  - All solid waste and debris removed from the wetland area must be removed from site and disposed of at a licensed landfill;
  - Any areas disturbed as a result of solid waste and debris removal must be rehabilitated to pre-activity condition or better.

7.5.7 Monitoring

The purpose of monitoring is to assess whether:

- Re-vegetation is successful;
- That the extent and coverage of *Typha capensis* has not increased;
- Any channel erosion is occurring and potentially requires stabilisation; and
- Any solid waste and debris being deposited in the wetland area is removed as per this Wetland RMMP.

Conduct fixed point photography monitoring as per the method defined in Section 6.3 above annually for the next 10 years. The photographic monitoring shall be carried out by the landowner or any agent employed by the landowner and must be kept on record by the owner(s) of the site should the DWS/CCT require proof of compliance with the Wetland RMMP.

8 CONCLUSION

This Wetland RMMP for the depression wetland complex on Portion 29 of Stellenbosch Farm No. 794 has been recommended in two freshwater specialist reports and as a condition of the rezoning approval. While the depression wetland complex is not or natural origins (and as such has no reference condition), both specialist studies determined the PES for the wetland complex with the most recent assessment indicating that the current PES of the wetland is a C/D. Both specialist reports recommended as a key aim of rehabilitation, improving the PES and accordingly the primary aim of this Wetland RMMP is to achieve a Category C PES or better.

Given the current depauperate status of the vegetation on the site (both aquatic and terrestrial) and the presence of alien invasive species, simply eliminating the alien invasives and introducing additional indigenous species into the wetland and associated buffer area, the PES would most certainly be improved. Additional measures are also recommended including the management of *Typha capensis*, a naturalised species that can dominate freshwater ecosystems and cause ecological and hydrological impacts.

Effective implementation of this Wetland RMMP would therefore ensure that the PES of Category “C” is achieved, if not exceeded, for artificial depression wetland complex within the site.

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REFERENCES

Everwater. 2026. Freshwater Impact Assessment and Risk Matrix for the proposed Abland (Pty) Ltd Development, Somerset West, Western Cape. May 2026.

WSP. 2017. Freshwater Habitat Impact Assessment - Somerset West Development. Project No 48553. July 2017.

Martens, C., Deacon, G., Ferreira, D., Auret, W., Dorse, C., Stuart, H., Impson, F., Barnes, G. and C. Molteno. 2021. A practical guide to managing invasive alien plants: A concise handbook for land users in the Cape Floral Region. WWF South Africa, Cape Town, South Africa.

APPENDIX A – CV OF THE SPECIALIST

Curriculum Vitae
of
NICHOLAS STEYTLER
Director – EnviroSwift Western Cape

CONTACT DETAILS	
Address	32 Rameron Road, Imhoffs Gift, Kommetjie 7975
Email	Nick@enviroswift.co.za
Cell	082-322 4074
PERSONAL INFO	
Full Names	Nicholas Sean Steytler
Date of Birth	28 March 1970
Nationality	South African
Languages	English, Afrikaans, isiZulu (fair)
Identity Number	7003285202088

ACADEMIC QUALIFICATIONS		
BSc	University of Natal (Pmb)	1990
BSc Honours (Zoology & Entomology) ***Cum Laude***	University of Natal (Pmb)	1991
MSc (Entomology)	University of Natal (Pmb)	1994

PUBLICATIONS

Steytler, NS and Samways, MJ. 1995. Biotope selection by adult male dragonflies (Odonata) at an artificial lake created for insect conservation in South Africa. Biological Conservation Volume 72 Issue 3, December 1995, Pages 381 – 386.

Samways, MJ and Steytler, NS. 1996. Dragonfly (Odonata) distribution patterns in urban and forest landscapes, and recommendations for riparian management. Biological Conservation Volume 78 Issue 3, December 1996, Pages 279 – 288.

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS

Registered Environmental Scientist (Pr Sci Nat 400029/02)

Member of IAIA SA

FIELDS OF EXPERTISE	**Years experience**
Integrated Environmental Management	25 years +
Natural Resource Management Planning	25 years +
Freshwater Ecological Specialist Studies	5 years +

EMPLOYMENT HISTORY

2019 – present: EnviroSwift Western Cape. Director / owner

2007 – present: KHULA Environmental Consultants. Director / owner

2005 – 2009: DJ Environmental Consultants. Associate Consultant.

2000 – 2005: SRK Consulting, Cape Town, Environmental Department. Senior Environmental Scientist.

1996 – 2000: Institute of Natural Resources, Pietermaritzburg. Associate Researcher: Natural Resources Management Programme.

WORK EXPERIENCE (note IEM experience not listed below)
Freshwater ecological specialist studies:
Freshwater ecological assessment of the proposed Sandown 8 residential development, Tableview, City of Cape Town (2026)
Freshwater ecological assessment of the proposed Rivergate 4 residential development, Tableview, City of Cape Town (2026)
Independent Peer Review of the Aquatic Biodiversity Assessment for the proposed expansion of agricultural lands on Portion 9, Portion 10 and Remainder of Farm Zandrug No. 122, Cedarberg Municipality, Western Cape (2026).
Wetland Rehabilitation and Management Plan for the proposed Somerset West Hotel and Casino, Portion 29 of Stellenbosch Farm No. 794, Somerset West, City of Cape Town (2026)
Aquatic Biodiversity Compliance Statement for the proposed development of a Solar Photo-Voltaic Facility and light industrial activities on Portion 1 of Farm 189, Uyekraal near Saldanha, Saldanha Bay Local Municipality, Western Cape (2026)
Freshwater Ecological Screening for the proposed lining of the Kromvlei Dam, Portion 2 of Farm 76 Namaquasfontein, Piketberg, Western Cape (2026).
Freshwater Ecological Screening for the proposed development of a new shopping centre on Erf 578 Schaapkraal, City of Cape Town, Western Cape (2026)
Detailed Freshwater Ecological Assessment for the proposed development of a Roundabout on Baden Powell Drive, Macassar, City of Cape Town, Western Cape (2026)
Independent Peer Review of the Aquatic Biodiversity Assessment undertaken by Enviro-EAP for the proposed Vredenburg Revitalisation Project Phases 3 and 4 Louwville, Erf 16604 and Erf 16606, Vredenburg, Saldanha Bay Municipality, Western Cape (2026)
Independent Peer Review of the Aquatic Biodiversity Assessment undertaken by Enviro-EAP for the proposed development of Erf 141 Philippi, City Of Cape Town, Western Cape (2026)
Aquatic Biodiversity Compliance Statement for the proposed George Kerridge Housing Development, Erf No. 8270 and Portion 4 of Farm 132, Vredenburg, Saldanha Bay Municipality, Western Cape (2026)
Aquatic Biodiversity Assessment for the proposed upgrading of the Raithby Wastewater Treatment Works, Erf 271 Raithby, Stellenbosch Municipality, Western Cape (2026)
Aquatic Biodiversity Compliance Statement for the proposed residential development on Remainder Erf 22, Riversdale, Hessequa Municipality, Western Cape (2025)
Aquatic Biodiversity Compliance Statement for the proposed development of low-cost housing opportunities, Remainder of Erf 551, Darling, Swartland Municipality, Western Cape (2025)
Independent Peer Review of the Aquatic Biodiversity Assessment undertaken by Enviro-EAP for the proposed Upgrading of a Bulk Water Supply from Alfa Street, Malmesbury to District Road 1111, Swartland Municipality Western Cape (2025)
Aquatic Biodiversity Assessment and preparation of a River Rehabilitation and Maintenance Management Plan for the proposed development of affordable housing opportunities, Erven 5636, 5637, 4061 & 4062, Hout Bay, City of Cape Town, Western Cape (2025)
Freshwater Ecological Screening for the proposed development tourism accommodation and hospitality facilities on Erf 789, 76 & Portion 4 of the Farm 983, Scarborough City of Cape Town, Western Cape (2025)
Aquatic Biodiversity Compliance Statement for the proposed residential development on Remainder Erf 22, Riversdale, Hessequa Municipality, Western Cape (2025)
Aquatic Biodiversity Assessment for the proposed development of a Petroport at on Portion 7 of the Farm Jacobus Kraal No. 544, near Yzerfontein, Western Cape (2025)
Aquatic Biodiversity Compliance Statement for the proposed affordable/low-cost housing in Nuwerus, Northern Cape (2025)
Independent Peer Review of the Aquatic Biodiversity Compliance Statement undertaken by Enviro-EAP for the proposed development of a Water Treatment Works for Heidelberg, Western Cape (2025)
Independent Peer Review of the Aquatic Biodiversity Assessment undertaken by Enviro-EAP for the proposed development of affordable/low-cost housing in two areas in Clanwilliam, Western Cape (2025)
Independent Peer Review of the Aquatic Biodiversity Assessment undertaken by Enviro-EAP for the proposed development of affordable/low-cost housing including the development of a new water supply reservoir in Citrusdal, Western Cape (2025)
Aquatic Biodiversity Compliance Statement for the proposed residential development of Remainder Erf 474 St. Helena Bay, Saldanha Bay Municipality, Western Cape (2025)
Aquatic Biodiversity Compliance Statement for the proposed development of an off-stream dam of storage capacity of 125 500m³ on Portion 24 of the Farm Misgunt No. 499, Citrusdal, Western Cape (2025)
Freshwater Screening Study for Erf 9882 Hout Bay, City of Cape Town (2025)
Freshwater ecological impact assessment of the development of housing opportunities on Portion 22 of the Farm Koopmans Kloof No. 221, Kraaifontein, City of Cape Town (2025)
Freshwater ecological impact assessment to support a S24G Rectification Application for the development of a residential dwelling on Farm 1620 Stellenbosch, Western Cape (2025)
Freshwater ecological risk assessment and preparation of a Rehabilitation Plan for the establishment of a Construction Site Camp in a wetland on Erf 65266 Wynberg, City of Cape Town (2025)
Freshwater ecological impact assessment for the proposed residential development of Erf 534 Bantry Bay, City of Cape Town (2025)
Freshwater ecological impact assessment for the proposed residential development of Erf 2534 Yzerfontein, Western Cape (2025)

Freshwater screening study for the proposed redevelopment of Erf 3129 Oranjezicht, City of Cape Town (2025)
Freshwater screening study for the proposed agricultural expansion at Rio Largo Olive Farm (Farms 757 and 758), Scherpenheuwel, Worcester, Western Cape (2025)
Freshwater screening study for the proposed residential development of Remainder Erf 474 St. Helena Bay, Western Cape (2025)
Freshwater screening study for the proposed residential development of Erf 919 Constantia, City of Cape Town (2025)
Freshwater screening study for the proposed redevelopment of Erf 2762 Camps Bay, City of Cape Town (2025)
Freshwater screening study for the proposed expansion of a school at Erf 4929 Lekkerwater Road, Sunnydale, City of Cape Town (2025)
Freshwater ecological impact assessment for the proposed residential development of Erf 3368 Higgovale, City of Cape Town (2025)
Freshwater screening study for the proposed residential development of Erf 17678 Capri, City of Cape Town (2024)
Freshwater screening study for the proposed Eersteriver Station Development, Erven 18-21, 25-29 and 1072, Eersteriver, City of Cape Town (2024)
Freshwater ecological impact assessment as part of a NEMA Section 24G Rectification process for the unlawful expansion of an egg-laying poultry farm on Portion 128 of the Farm Stocklands and Oatlands No. 878, Currys Post, KwaZulu-Natal (2024)
Freshwater ecological impact assessment as part of a NEMA Section 24G Rectification process for the unlawful clearance of indigenous vegetation on Portion 48 of the Farm 708, Franskraal, Overstrand Municipality (2024)
Freshwater ecological impact assessment for the proposed single residential development of Portions 125 & 126 of Farm 599 Bettys Bay, Overstrand Municipality (2024)
Freshwater ecological impact assessment for the proposed development 4 residential dwellings and associated infrastructure on Portion 86 of the Farm Bosjesmans Valley No. 218, Worcester (2024)
Freshwater screening study for the proposed development of Erf 1847 Hout Bay, City of Cape Town (2024)
Freshwater screening study as part of a NEMA Section 24G Rectification process for the proposed single residential development of Erf 5629 Bettys Bay, Overstrand Municipality (2024)
Freshwater ecological impact assessment for the proposed development of Erf 8384 Hout Bay, City of Cape Town (2024)
Freshwater screening study for the proposed development of Erf 4502 Hout Bay, City of Cape Town (2024)
Freshwater screening study for the proposed subdivision of Erf 4476 in Waterfall Lane, Hout Bay, City of Cape Town (2024)
Freshwater ecological impact assessment as part of a NEMA Section 24G Rectification process for the unlawful development of tourism accommodation facilities at the Portion 1 of Farm 866, Bot River, Theewaterskloof Municipality (2024)
Freshwater screening study for the proposed development of Erf 1472 Hout Bay, City of Cape Town (2024)
Freshwater screening study for the proposed expansion of the Montana Seed Processing Facility, Joostenbergvlakte, City of Cape Town (2024)
Freshwater screening study for the German School, Kloof Neck, City of Cape Town (2024)
Freshwater screening study for the proposed telecommunications mast on Portion 6 of the Farm Harkerville No 423, Knysna Road, Plettenberg Bay (2024)
Freshwater screening study for the proposed residential development of Erven 3233 and 3234 Hout Bay, City of Cape Town (2024)
Freshwater screening study for the proposed residential development of Portion 3 of Farm 1643, Franschhoek, Drakenstein Municipality (2024)
Freshwater screening study for the proposed new in-stream dam on the Remaining extent of Farm Sevilla No. 135, Clanwilliam (2024)
Freshwater screening study for the proposed Morning Star affordable housing scheme, Durbanville, City of Cape Town (2024)
Freshwater screening study for the proposed temporary staging facility for the proposed Wynberg IRT bus depot, City of Cape Town (2024)
Freshwater screening study for the proposed subdivision of Erf 4795 Noordhoek, City of Cape Town (2024)
Freshwater screening study for the proposed single residential development of Erf 88844 Clovelly, City of Cape Town (2023)
Wetland delineation at the propsoed Eagles Rest Private Nature Reserve, Cape Point (2024)
Freshwater ecological impact assessment for external services for Welmoed Urban Node, Stellenbosch (2024)
Freshwater screening study for proposed solar PV facilities on the Remainder of Portion 5 of the Farm Rietvallei No. 167, Montagu (2023)
Amendments to freshwater specialist reports submitted in support of the applications for environmental approval for the Calcutta Cemetery, Farm 29 Stellenbosch (2023)
Freshwater screening study for the proposed development of Erf 325 Atlantis, City of Cape Town (2023)
Freshwater screening study for the proposed development of solar PV facilities on Farms 788-6 and 792-RE, Philippi, City of Cape Town (2023)
Freshwater screening study for the Proposed development of solar PV facilities on Erven 551 and 553, Schaapkraal, City of Cape Town (2023)
Freshwater ecological impact assessment for the proposed expansion of the Rusty Gate Mountain Retreat, Greyton (2023)

Freshwater screening study of the proposed redevelopment of portions of Stikland Hospital, Erf 6300 Stikland, Bellville (2023)
Freshwater ecological specialist review & assessment for the proposed amendment to the scope of the authorised extension of Erica Drive, Belhar, City of Cape Town (2023)
Freshwater Screening study for the proposed telecommunications base station on Portion 20 of the Farm Matroosberge No. 57, De Doorns (2023)
Freshwater ecological impact assessment for the proposed subdivision of Erf 10546 Hout Bay (2023)
Freshwater screening study for the proposed expansion of Louwville township, Vredenburg (2023)
Freshwater ecological impact assessment for the residential development of Erf 178092 Newlands, City of Cape Town (2023)
Freshwater screening study for Erf 2068 Somerset West, City of Cape Town (2023)
Freshwater screening study for Portion 3 of Farm 1025 Wemmershoek, Stellenbosch Municipality (2023)
Freshwater ecological impact assessment for a new Wastewater Treatment Works for Matjiesfontein, Laingsburg Municipality (2023)
Freshwater ecological impact assessment for the development of tourism accommodation facilities at the Farm Hemelrand, Hemel en Aarde Valley, Overstrand Municipality (2023)
Freshwater screening study for residential development at Oude Bosch, Hermanus Lagoon, Overstrand Municipality (2022)
Freshwater ecological impact assessment for a proposed shopping centre at Erf 666 Hout Bay, City of Cape Town (2022)
Freshwater screening study for the proposed formalisation of the Valhalla Park informal settlement, Cape Flats, City of Cape Town (2022)
Freshwater screening study for a proposed telecommunications mast, Overhex, Breede Valley Winelands Municipality (2022)
Freshwater ecological impact assessment for the proposed expansion of the Leopard Rock residential estate, Onrusrivier, Overstrand Municipality (2022)
Freshwater screening study for the proposed low cost housing development at Wolwerivier, City of Cape Town (2022)
Freshwater ecological impact assessment for the proposed low cost housing development of Erf 148 Philadelphia, City of Cape Town (2022)
Freshwater screening study of Erf 10932 Constantia, City of Cape Town (2022)
Freshwater screening study of Erf 49 Faure, City of Cape Town (2021)
Freshwater screening study for a proposed concrete factory on the Remainder of the Farm Bultfontyn 128, near Middelburg in the Eastern Cape (2021)
Freshwater ecological impact assessment for the proposed expansion of vineyards at Mountain Rose Farm, Hemel en Aarde Valley, Overstrand Municipality (2022)
Freshwater ecological impact assessment for unlawful agricultural expansion at Plennegy Farm, Oudtshoorn, Western Cape (2021)
Freshwater screening study for the development of erven 41 and 59, Knole Park, City of Cape Town (2021)
Freshwater ecological impact assessment for proposed truck stop on Portion of Erf 10229, Beaufort West, Western Cape (2021)
Freshwater screening study for the proposed redevelopment of the Mowbray Golf Course, Pinelands, City of Cape Town (2021)
Provision of rehabilitation specifications for the unlawful excavation of a trench in a non-perennial drainage line at the Farm Vergelegen, Robertson, Western Cape (2021)
Freshwater ecological impact assessment for unlawful agricultural expansion at Samber Farms, Riversdale, Western Cape (2021)
Freshwater ecological impact assessment for proposed expansion of an in-stream irrigation dam at Farm Hartebeest Kuil, George, Western Cape (2021)
Freshwater screening study for the proposed residential development of Erf 208 Bishopscourt, City of Cape Town (2021)
Freshwater screening study for the proposed agricultural processing facility, Maqinqi communal area, Port St. Johns Municipality, Eastern Cape (2021)
Freshwater ecological impact assessment for the proposed agricultural expansion at the Farm Vergelegen, Robertson, Western Cape (2021)
Freshwater ecological impact assessment for a proposed residential development in Plattekloof, City of Cape Town (2021)
Freshwater ecological screening study for the proposed sewerage pipeline for Schulz Vlei development, Philippi, City of Cape Town (2021)
Freshwater ecological impact assessment for the proposed development of an agro-industrial facility, Wemmershoek, Western Cape (2021)
Freshwater ecological screening study for a proposed filling station in Eerste River, City of Cape Town (2020)
Freshwater ecological impact assessment for an unlawfully constructed tourist accommodation facility, Tulbagh, Western Cape (2020)
Freshwater ecological screening study and risk assessment for additions and alterations to an existing residential dwelling, Breede River, Western Cape (2020)
Freshwater ecological screening study for a proposed truck depot and filling station, Paarl, Western Cape (2020)
Freshwater ecological screening study for a proposed phosphate mine, Saldanha, Western Cape (2020)

Freshwater ecological screening study for a single residential development at Oppi Berg, Ceres, Western Cape (2020)
Freshwater ecological screening study for a proposed industrial area expansion, Bredasdorp, Overberg, Western Cape (2020)
Freshwater ecological impact assessment for proposed Canola plant at Erf 15711 Wellington, Drakenstein Municipality (2020)
Freshwater ecological impact assessment for single residential development of Ptn 13 of Farm 563 Kleinmond (2020)
Freshwater ecological impact assessment for new IRT bus depot, Wynberg, City of Cape Town (2019)
Freshwater ecological screening study for Blackheath Printers, Blackheath, City of Cape Town (2019)
Freshwater ecological screening study for La Motte residential extension, Franschoek (2019)
Freshwater ecological impact assessment for Vloedbos Resort, Overberg (2019)
Freshwater ecological screening study for Erf 3660 Hout Bay, City of Cape Town (2019)
Freshwater ecological screening study for Erf 2145 Constantia, City of Cape Town (2019)
Freshwater ecological impact assessment for low-cost housing development in Khayelitsha (2019)
Freshwater ecological impact assessment for Kommetjie Vineyards Estate, City of Cape Town (2018)
Freshwater ecological screening study for Remainder Erf 177887 Ottery, City of Cape Town (2018)

Environmental Planning and Natural Resources Management:
Preparation of an Invasive Alien Plant Clearing Plan for Erf 6289 Hout Bay, City of Cape Town (2021)
Preparation of an Invasive Alien Plant Clearing Plan for Shamballah Tea House, Cape Point, City of Cape Town (2019)
Preparation of an Invasive Alien Plant Clearing Plan for Imhoff Farm, Southern Peninsula, City of Cape Town (2018)
Preparation of a River Maintenance Management Plan for the Jakkals River, Elgin, Theewaterskloof Municipality (2018)
Preparation of a River Maintenance Management Plan for wetlands associated with the Bottelary River, Hazendal Wine Farm, Stellenbosch (2017)
Preparation of an Invasive Alien Plant Clearing Plan for the Farm Wildschutsbrand, Cape Point (2017).
Preparation of an Invasive Alien Plant Clearing Plan for Lalapanzi Farm, Cape Point (2017).
Preparation of a River Maintenance Management Plan for the Dawidskraal River, Bettys Bay, Overstrand (2016)
Preparation of a Site Rehabilitation and Management Plan for wetlands at Kraaifontein Shooting club, Northern Cape Metro (2015)
Preparation of a Wetland Maintenance and Management Plan for De Goede Hoop Estate, Noordhoek, South Peninsula (2014)
Application for Off-Road Vehicle Regulations licence for boat launching facility, Oceana Power Boat Club slipway, V&A Waterfront (2014)
Preparation of a Maintenance Management Plan for the Silvermine River, Clovelly Country Club, South Peninsula (2014)
Preparation of a Maintenance Management Plan for the rehabilitation and maintenance of an unnamed stream and associated infrastructure, Klein Constantia Winefarm, Cape Metropole (2014)
Environmental Screening for the proposed redevelopment of the Tygerberg Hospital, Northern Cape Metropole (2014)
Establishment of a Permanent Coastal Development Setback Line for the V&A Waterfront, City of Cape Town (2014)
Preparation of a Maintenance Management Plan for the ongoing maintenance of the access road to the West Coast Rock Lobster holding facility, Witsand Island, Scarborough, City of Cape Town (2013)
Preparation of a Maintenance Management Plan for the Kromboom River, Erf 117459 Lansdowne, Cape Metropole (2013)
Preparation of a Rehabilitation Plan for the remediation of unlawful infilling of a wetland at Lalapanzi Farm, Cape Point (2012)
Preparation of a Rehabilitation Plan for the remediation of unlawful construction of a parking area at Erf 935 Noordhoek Farm Village, City of Cape Town (2012)
Preparation of a rehabilitation plan for the closure of the Retreat Filling Station, City of Cape Town (2012)
Khayeltisha Wetlands Park – Park Delineation and Management Review, City of Cape Town (2010)
Preparation of the Coast & Estuaries Theme for the 1st review of Eastern Cape State of the Environment Report (2009)
Preparation of 2010 FIFA World Cup Greening Business Plan for Polokwane, Limpopo Province (2008)
Preparation of 2010 FIFA World Cup Greening Business Plan for Rustenburg, North West Province (2008)
Revision of the Table Mountain National Park Conservation Development Framework, City of Cape Town (2006)
Comparative Evaluation of alternative venues for the 2010 FIFA World Cup Stadium, City of Cape Town (2006)
Preparation of a Strategic Management Framework for the Kogelberg Biosphere Reserve, Overberg (2005 – 2006)
Preparation of concept document and proposal to undertake a SADC regional market survey of the indigenous fibre trade, SADC Region (2006)
Strategic Planning of Cemeteries in the Drakenstein Municipality (2006)
Environmental assessment of overnight sites for the Hoerikwaggo Trails, Table Mountain National Park, Western Cape (2005)
Preparation of the Year 1 State of the Environment Report for the Western Cape (2005)
Preparation of a Water Resources Management Strategy for Mozambique (2004)
Due Diligence Study for the proposed Mozaq Limitada Prawn Farm, Mozambique (2003)
Preparation of the Culemborg Development Framework, City of Cape Town (2001)
Restoration Planning of the Bokramspruit River, Kommetjie, City of Cape Town (2001)
Management and Maintenance Planning of the Dwars River, Ceres (2001)
Preparation of the Garden Route Spatial Development Framework, Southern Cape (2001)

Strategic Planning of the information needs of a Medicinal Plants Network in the SADC region (1999)
Research to determine potential commercial products from the Wild - Medicinal Plants component, South Africa (1999)
Economic Evaluation of the Cultivation of Nine Species of Medicinal Plants Indigenous to South Africa (1998)
Faunal specialist assessment for the proposed N2 by-pass, Natal Drakensberg, KwaZulu-Natal (1997).
Freshwater specialist assessment for the proposed construction of a bridge over the Msunduzi River, Voortrekker Highschool, Pietermaritzburg (1997)
Strategic Planning of a proposed community based indigenous forest management project, Eastern Cape (1998)
Preparation of a decision support manual for community-based urban riparian systems management (RIPARI-MAN) (1998)
Preparation of an Integrated Catchment Management Plan for the Msunduzi River Catchment, Pietermaritzburg (1997)
Development of Flood Response Strategies for the Msunduzi River Catchment, Pietermaritzburg (1997)
Evaluating community-based wildlife management projects in the SADC region as part of the international project by IIED / IUCN called “Evaluating Eden” (1996)