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Wetland Strategy and Action Plan 2026-2031

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DISCLAIMER

The original development of this Wetland Strategy and Action Plan was made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of the original version are the sole responsibility of ICLEI – Local Governments for Sustainability and do not necessarily reflect the views of USAID or the United States Government.

Garden Route District
Wetland Strategy and Action Plan (2026- 2031)

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The original compilation of the Garden Route District Wetland Strategy and Action Plan (WSAP) would not have been possible without the significant contribution and support from the many active stakeholders who currently work within the Garden Route District.

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The Garden Route District Municipality would like to acknowledge the meaningful contributions from all other stakeholders within Garden Route District Municipal area, both public and private, which have culminated in the reviewed and updated Garden Route District Wetland Strategy and Action Plan, 2026 – 2031.

List of Acronyms and Abbreviations

AS	Africa Secretariat
DEA&DP	Department of Environmental Affairs and Development Planning
DFFE	Department of Forestry, Fisheries and the Environment
GRDM	Garden Route District Municipality
IAP	Invasive Alien Plant
ICLEI	International Council for Local Environmental Initiatives
IDP	Integrated Development Plan
LAB: Wetlands SA	Local Action for Biodiversity: Wetlands South Africa
LM	Local Municipality
SA	South Africa
SALGA	South African Local Governments Association
SANBI	South African National Biodiversity Initiative
SDF	Spatial Development Framework
USAID	United States Agency for International Development
WFW	Working for Wetlands
WSAP	Wetland Strategy and Action Plan

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INTRODUCTION

South Africa is endowed with a rich wealth of biodiversity, which offers an immense opportunity to support the country's development path by providing many goods and services which contribute to municipal service delivery, water and food security and quality of life, especially under a changing climate. However, wetlands have been severely affected by the anthropogenic activities that have drastically altered landscapes over the past few centuries (DWS, 2025; SANBI, 2019). It has been reported that more than 50% of wetlands have been lost in South Africa, and of those that remain, 33% are in poor ecological condition due to poor management (DWS, 2025). Furthermore, the latest National Biodiversity Assessment (NBA) Report (SANBI, 2019) also states that wetlands form part of the most threatened and least protected ecosystems in South Africa.

Within the Garden Route district, a significant number of the wetlands are under threat or have already been lost. This is largely due to historical degradation, deliberate draining of wetlands to make way for development and agriculture, inappropriate development within the close proximity to the wetlands, poorly regulated agricultural practices, contamination through chemical, sewage, effluent and stormwater seeps, sedimentation, water abstraction and the spread of invasive alien plants. Degraded wetlands are unable to function to the same degree as healthy wetlands and as such ecosystem service provision from these wetlands is severely hindered or even lost altogether.

In light of this, there is an urgent need to increase awareness of wetland importance and to incorporate natural wetland resource considerations into municipal governance mechanisms and planning. Careful management as well as the investment in the maintenance of healthy wetlands and the rehabilitation and restoration of damaged or degraded wetlands is also needed. This will ensure the continued provision of these vital ecosystem services to the district.

This Wetland Strategy and Action Plan (WSAP) was originally developed by the ICLEI Africa Secretariat (ICLEI AS), to assist the Garden Route district Municipalities in identifying the gaps in management, and to support the district with devising new and better wetlands management strategies going forward.

Supporting Documentation:
This document relies heavily on supporting documents developed by ICLEI, and which are available on their website. These can be downloaded from **http://cbc.iclei.org/project/lab-wetlands-sa/**

1. Wetlands in the Garden Route District

The Garden Route District Municipality (GRDM) is located in the Western Cape Province of South Africa, and covers an area of 23 331 km2. The Municipality falls within the Cape Floristic Region (a recognised World Heritage Site and a global biodiversity hotspot with high levels of endemism and floral and faunal diversity). A significant number of wetlands can be found throughout the district, including one RAMSAR site of international importance. The wetlands within Garden Route district are considered to be high-value "ecological infrastructure", in that they provide vital habitat for flora and fauna, but also provide critical ecosystem services to the municipality. These include flood attenuation, water filtration, erosion control and water storage (regulatory services) as well as food provision, supply of raw materials and clean drinking water (provisioning services). The wetlands within the district also play a pivotal role in disaster risk management as well as reducing the impacts of climate change within the district.

The area includes the Gouritz River catchment, , with its main tributaries, the Groot, Gamka and Olifants rivers as well as secondary tributaries, the Touws, Dwyka, Buffels, Koekemoers, Kamma, Leeu, Vals, Stink and Kammanassie Rivers. Along the coast to the east and west of the Gouritz River are several smaller coastal catchments. The Duiwenhoks and Goukou Rivers drain the coastal belt west of the Gouritz River, while the Garden Route area to the east of the Gouritz consists of several smaller rivers including the Knysna and Keurbooms Rivers. The catchments of the coastal belt also contain a number of important coastal lakes and wetlands. For instance, the Wilderness Lakes near Sedgefield are a designated Ramsar wetland site and the Knysna Lagoon1 is considered the largest and most important estuary in the country. Rainfall decreases from the coast inland, with mean annual precipitation varying from as high as 865 mm in the coastal areas, which experience year round rainfall, to as little as 160 mm in the drier areas inland to the north, which experience late summer rainfall

1.1. What is a Wetland?

> "*Wetlands are land which is transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil*".
>
> ***National Water Act No. 36 of 1998.***

Wetlands are essentially an expression of the presence of surface or near-surface water in the landscape. This water can either be static (e.g. pans) or slowly moving through the landscape. The source of the water can include surface flow, interflow (water flowing through the soil profile), groundwater (including deep and/or perched groundwater), direct rainfall, or any combination of these. Whatever the source, the water must be present for long enough to influence both the soil properties and the vegetation. In practice, the wetland boundary is defined as the position in the landscape where hydric indicators occur in the soil within 0.5 m of the surface (DWS, 2025). Where these hydric indicators are deeper than 0.5 m, they generally do not support wetland adapted

plants. Thus, the 0.5 m measurement traditionally forms the boundary between terrestrial and wetland adapted plant species.

In simpler terms, a wetland is a feature in the landscape which is saturated with water for a long enough period that the soil conditions change (mottling as a result of the anaerobic conditions) and the vegetation shifts to respond to these changes (Figures 1 & 2).

1)  2) 

Figure 1 & 2: *Mottled soils indicative of a wetland (left)and specially adapted wetland vegetation (right).*

1.2 Wetland Types and Categories

As a result of various environmental factors and topography, various types of wetland areas exist in South Africa. The author Cowan (1995) divided wetlands around the country into different regions according to climate and the geomorphology of the country. These are further sub-divided into four groups, i.e., mountains, plateau, coastal plain, coastal slopes and rimland. Endorheic pans, lacustrine, riverine, estuarine, palustrine, marine, and man-made/constructed wetlands are some of the most common wetlands found in South Africa.

Brinson (1993), Kotze (1999) and Marneweck and Batchelor (2002) developed a system to characterise wetland systems based on the hydrogeomorphic (HGM) characteristics (landscape settings and flow) - the way in which water moves in, through and out of them. This system follows that used by the United States Environmental Protection Agency (US-EPA) and has in the past been included as part of a proposed wetland category system for South African wetlands by Ewart-Smith et al., (2006). Table 1 below presents the different types of wetlands which are grouped according to landscape settings and hydrological functions.

Table 1: Landscape settings and flow characteristics of the HGM wetland types (DWS, 2025).

Wetland Type	**Description**	**Flow Pattern**	**Landscape Setting**	
Rivers	-	Channelled	Valley bottoms	Strongly confined valley floor
Lakes	-	Standing water		

Unchannelled valley bottoms	• Valley bottom surfaces which do not have a channel; • These systems tend to be found in the upper catchment areas, or at tributary junctions where the sediment from the tributary smothers the main drainage line	Diffuse		Wide or unconfined valley floor
Channelled valley bottoms	• Valley bottom surfaces which have a straight channel with flow on a permanent or seasonal basis; • These systems tend to be found in the upper catchment areas	Channelled (parallel to valley)		
Meandering floodplain	• Valley bottom surfaces which have a meandering channel which develop upstream of a local (e.g. resistant dyke) base level, or close to the mouth of the river (upstream of the ultimate base level, the sea).	Channelled (meandering across valley)		
Seepage wetlands	• Located on the mid- and foot slopes of hillsides; either as isolated systems or connected to downslope valley bottom wetlands.	Diffuse – diffuse Diffuse to surface / channel	Slopes	
Depressional Pans	• Pans are found in many arid zones around the world and consist of brackish, saline or alkaline lakes, flats, pans and marshes; • Endorheic pans are distinguished by shapes ranging from circular to oval and have no drainage outlet; • Pans are most frequently found in the Western, Southern and Eastern Plateau wetland regions of South Africa; • Circular or oval in shape; usually found on the crest positions in the landscape	Diffuse flow – standing water	Crests	
Flats		No defined direction of drainage due to very flat landscaping	Flats	

Peatlands are defined as wetlands with more than 30% organic matter, roughly equal to 20% organic carbon or more, in a peat layer of more than 30cm thick, whilst a mire is a peatland where peat is currently being formed by peat forming vegetation (DWS, 2025; Joosten et al., 2012). Peatlands are maintained by hydrological processes, and their position in the landscape determines their characteristics and response to change. Most peatlands occur in temperate climates where precipitation exceeds evapotranspiration, although a significant proportion does occur in subtropical climates with a water deficit (DWS, 2025; WRC, 2008).

Please refer to the Garden Route District Municipality: Wetland Report (2017) for information on the main wetland types within the Garden Route district. The report can be accessed here: **http://cbc.iclei.org/project/lab-wetlands-sa/**

1.3 The Value of Wetlands to the Garden Route District

All wetland types can be classified as high value "ecological infrastructure" due to the large number of ecosystem services that they provide. Wetland ecosystem services can be classified into four separate categories namely "provisioning services", "regulating services", "cultural services" and "supporting services". Provisioning services can be described as the products one can physically obtain from wetlands. Regulatory services can be described as the benefits one receives from the wetland. Cultural services are the nonmaterial benefits that one can obtain from wetlands. Lastly supporting services are the services provided that are necessary for the production of all other ecosystem services. Please refer to Table 2 below for a detailed description of the ecosystem services that wetlands within the Garden Route district provide.

Table 2: *Ecosystem services identified in the Garden Route district.*

Ecosystem Service Type	Ecosystem Service	Description/ Case Study
Provisioning	Food	Local communities within the district obtain plants and fish from the wetland systems within the district to support their diets.
	Medicinal plants	Many of the plants growing within and around wetlands have natural medicinal properties. Local communities harvest these plants to maintain/ improve their personal health.
	Raw materials supporting local economies and livelihoods	Local communities living within Garden Route district harvest reeds from the wetlands to make baskets and furniture, grasses for thatching and Arum lilies to sell on the side of the road. Fishing and bait collecting (small juvenile fish, prawns and blood worms) is also common practice to support the local informal fishing industry.
	Clean drinking water	Local communities living within Garden Route district, particularly those located in the more rural areas, use clean water supplied by the wetlands for drinking purposes.
Regulatory	Water storage & stream flow regulation	Wetlands store stormwater runoff and slowly release the water as the water table drops. This contributes to sustained streamflow throughout the year.
	Flood attenuation and control	Wetlands and the associated plants play a crucial role in flood attenuation and control as they have the ability to absorb flood water and reduce the velocity of flood waters moving through the system. This contributes to the protection of agricultural land as well as infrastructure downstream.
	Erosion control	Wetland plants (particularly Palmiet) strengthen the banks of wetlands and thereby contribute to sediment stabilisation and soil retention within the catchment.
	Water filtration and purification	Wetlands and wetland plants contribute substantially to improving water quality by filtering and purifying water as it moves through the system. Wetlands have the ability to modify or trap a wide range of substances commonly considered to be pollutants including suspended sediment, excess nutrients, phosphorus, nitrogen, pesticide residue, industrial effluent, pathogenic bacteria and viruses. As such, high concentrations of the above are prevented from reaching groundwater

		supplies or surface water downstream thus contributing to clean drinkable water.
	Climate Change Mitigation	Wetlands have been identified as significant storehouses of carbon. Peatlands are estimated to store more than 25 % of the soil carbon pool, even though these areas cover only about 3 % of the world's total land area.
	Protection against the impacts of climate change	Wetlands have the ability to protect both coastal and inland areas against the effects of climatic change (e.g. from increasing frequency and intensity of storms, changing rainfall and temperature patterns as well as changes in seasonality).
Cultural	Recreation	The wetlands within Garden Route district are used extensively for recreation purposes. Activities undertaken within these wetlands include, amongst other things, boating and kayaking along well-known birding routes, and picnicking along the banks of the wetland systems. Fishing is also a popular recreational and cultural activity in the local wetlands.
	Tourism	Due to their natural beauty and diversity of plant and animal life, the wetlands within Garden Route district are also popular tourist destinations.
	Education	Wetlands provide ideal spaces for involving the general public and schoolchildren in hands-on learning experiences and to raise awareness of environmental issues in a recreational atmosphere.
Supporting	Nutrient recycling	Wetlands naturally slow down the flow of water, thereby promoting the deposition and retention of nutrients. These are then utilised by the microbial species living in the wetland habitat which are in turn eaten by larger species such as prawns and blood worms.
	Supporting habitat	A large variety of bird, fish and invertebrate species are dependent on the wetlands within Garden Route district for at least part of their lifecycle. Wetlands provide vital breeding and nursery ground for a variety of fish species as well as breeding, courtship and foraging ground for a variety of bird species.

It should be noted that the numerous ecosystem services provided by wetlands come at no cost to the district and as such, all that needs to be done to ensure continued provision of these services is to protect and maintain local wetlands. However, the inappropriate management of wetlands can cause a loss of wetland area and subsequent loss of ecosystem services. This results in the Municipalities having to invest in expensive infrastructure (e.g. water filtration plants or flood barriers) to ensure the same level of service delivery.

1.4 Threats to Wetlands within the Garden Route District

Wetlands are amongst the most impacted and degraded of all ecological systems. Global assessments indicate that a large proportion of wetlands have been destroyed, and the majority of remaining wetlands are degraded or under threat of degradation (DWS, 2015). In South Africa, more than half of the country's wetlands are estimated to have been destroyed or converted into areas of lower functional importance. This is typically because wetland resources are often under-appreciated, resulting in inadequate management, unsustainable exploitation and consequently, poor wetland integrity.

The main pressures on wetland ecosystems are typically non-flow related impacts such as encroachment from cultivation and impacts of urban development, mining, dam construction and

poor grazing management. More widespread catchment impacts like alteration of flows, pollutants and sediment from surrounding land uses also lead to wetland degradation.

Following verbal communications with active stakeholders working in the Garden Route district, the following key threats were identified, are summarised in Table 3 below:

Table 3: *Threats to wetlands within the Garden Route district:*

Threat	Description
Historical Degradation	Historically, there has been little understanding of the value of wetlands and as such wetlands within with district have been poorly managed. Early European farmers used wetlands for intensive livestock farming and as access routes for ox wagons and carts. In more recent years, wetlands had also been deliberately filled in so as to "reclaim the land" for urbanisation and agriculture.
Urban Development & Expansion	Wetlands within the Garden Route district are at risk from both formal and informal urban development and expansion. Due to population expansion within the district, there is a need for more housing. As such, development is being taken right up to, and sometimes beyond, the urban edge threatening wetlands near the vicinity of the urban edge. Due to limited knowledge of where wetlands are on the ground, the development process often entails the accidental draining or infilling of wetlands to make room for these developments. Additionally, due to limited capacity of Municipalities to enforce legislated setback lines, wetlands are also negatively impacted from deliberate development within these systems.
Converting & Using Land for Agricultural Purposes	Since the 1970s, due to lack of knowledge of the value of wetlands and the importance of the ecosystem services they provide, farmers have been deliberately and actively draining and converting wetland land for agricultural purposes because of the relatively fertile alluvial soils, close proximity to water and level land. The result is that with each flood event, a significant amount of sediment is washed downstream putting downstream infrastructure and livelihoods at risk. In addition, the planting of crops, fruit trees and nut trees, as well as converting the land for large scale forestry, results in the continuous abstraction of significantly more water than the original indigenous vegetation would have done. Subsequently, this means that there is significant stream-flow reduction as these man-made plantations and forests hold water that would otherwise have been available for downstream users.
Pollution & Effluent Seepage	Dairy farming, particularly in the coastal catchment area, poses a significant threat to wetlands. Irrigation of pastures means that excess pesticides and nitrogen seep into the wetland system whilst cleaning of the dairy farms results in the seepage of effluent directly into wetland areas. This results in eutrophication as well as pollution of the wetlands. This not only poses a risk to the local flora and fauna in terms of habitat contamination, but also poses a health risk to humans in terms of altered water quality. As such, water coming from the wetlands located in close proximity to dairy farms requires significant treatment before it is safe for human consumption. As a result of expanding urbanization in close vicinity to wetland areas, ageing and failing waste-water treatment infrastructure and poor stormwater runoff

	monitoring and management, the wetlands within Garden Route district are also at risk from polluted stormwater runoff, as well as from sewerage seeping into wetland areas. The effect of this includes increased nutrient loads, as well as E. coli levels within in the wetland and estuarine systems which negatively affects the delicate biodiversity depending on these systems for survival.
Water Abstraction	The Garden Route district falls within the Breede-Overberg Catchment Management Agency (BOCMA) area. In the northern inland part of the district, evaporation exceeds rainfall meaning that these are water stressed areas. In contrast, rainfall largely matches evaporation in the southern part of the district meaning that these are generally moister environments. More than half of the water currently used in the drier inland areas of the district is abstracted from groundwater and wetlands in order to meet water needs of the local population, including for agricultural purposes. In light of this, the inland wetlands are under severe pressure. Pressure on all wetlands within the municipality however is only likely to increase. The Garden Route District Municipal area is the third most populated region in the Western Cape Province, after the City of Cape Town, and the Cape Winelands districts, representing 11.3% of the Provincial population. The region is characterized by both highly urbanized coastal areas (like Knysna, Mossel Bay, and Bitou) and rural farmlands (like Kannaland, Hessequa, and Oudtshoorn). Population density in 2023 was 27.2 persons per km^2, with an expectation of a slight increase to 27.8 by 2025. As such, water provision services across the municipality will have to expand to service this population growth, placing more pressure on the local water resources. In addition, low-cost housing projects emerging from the National Reconstruction and Development Programme (RDP), together with the National Water and Sanitation Programme have contributed to additional water demand.
Encroachment of Invasive Alien Plants (IAPs)	Invasive plant and animal species, introduced by human actions either accidentally or intentionally, are proving a major threat to the quality and quantity wetlands, as well as to the biodiversity within the Garden Route district. IAPs have the ability to alter local water quality, displace indigenous plants (and subsequently the fauna that depends on that vegetation for survival) and ultimately alter the habitat and change ecosystem functioning to suit themselves. IAPs are also “thirsty” as they draw a far greater amount of water than the local indigenous vegetation resulting in a reduced amount of water moving through the system to downstream users.

2. Governance and Management

South Africa has an extensive legislative framework concerning the environment, and biodiversity is considered in both development planning as well as national government priorities. This section outlines key legislation and policies which leads to the current wetland management strategy for the district.

2.1 Policy Framework

Table 4 provides a comprehensive summary of all South African legislation, policies and strategies pertinent for the management of wetlands. It is important to note that some of the legislation such as the National Environmental Management Act provides specific instructions regarding wetland management, whilst other legislation indirectly supports management of wetlands such as the National Environmental Management: Waste Act.

Table 3: *Legislation governing wetland management in the Garden Route district.*

LEGISLATION/ POLICY/ STRATEGY	HOW IT RELATES TO WETLANDS
Legislation	
South African Constitution	Overarching principles of care for the environment.
Environmental Conservation Act and associated By-Laws	Controls access to and activities within coastal and wetland areas.
National Water Act	Water use control, including extraction and construction within the vicinity of a watercourse or wetland.
National Environmental Management Act	Environmental impact assessments (EIAs) for the development of a new or disturbed site within the vicinity of a watercourse or wetland.
National Environmental Management: Biodiversity Act	Protection of biodiversity and the formulation of a number of tools (e.g. bioregional plans and threatened ecosystem lists) that feed into land use planning and EIA procedures.
National Environmental Management: Biodiversity Act - Alien and Invasive Species Regulations	All matters related to invasive species management (both fauna and flora).
National Environmental Management: Integrated Coastal Management Act	Protection of coastal landscapes and sensitive areas, which often include wetlands.
National Environmental Management: Protected Areas Act	Protection of national parks, protected areas and conservation sites. This includes the protection of wetland site.
National Environmental Management: Waste Act	Regulation of illegal dumping
Conservation of Agricultural Resources Act	Protect the utilization of the natural agricultural resources to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invasive plants.
Municipal Systems Act	Role of local governments and the requirements for IDPs, SDFs and Disaster Management Plans
Municipal Structures Act	Promotion of regional planning and spatial planning categories.
Municipal Health Act	Monitoring of WWTW discharge
Policies	
National Development Plan, and associated Medium Term Strategic Framework.	Sets out measures to protect natural resources in South Africa. Through the creation of the MTSF and associated 'Delivery Agreements', required outputs and targets are set.
Municipal Planning	
Integrated Development Plan (IDP)	Overall strategy document for the municipality.
Provincial Strategic Development Framework (SDF)	Overarching spatial planning guidelines for the province.
District SDF	Broad spatial planning guidelines for the district (including a map of land use within the district)
Local Municipal SDFs	Strategic plans to manage municipal land at the local level.
Open Space Framework	Demarcation of Open Space Areas.

LEGISLATION/ POLICY/ STRATEGY	HOW IT RELATES TO WETLANDS
Environmental Management Framework	Map and land use guidelines for areas of environmental importance.
Sector Plans	This includes the Disaster Management Plan
By-Laws	Boating By-Law which regulates recreational activities on the Keurbooms River.
Strategies	
The National Biodiversity Framework	Provides biodiversity targets for South Africa.
National Water Resource Strategy	Speaks to protection and rehabilitation of wetlands.
Other	
Bioregional plans (draft or gazetted)	Maps Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs).
Spatial Planning and Land Use Management Act	Provides a framework for spatial planning and land use management in South Africa. It also stipulates that municipal planning is primarily the executive function of the local sphere of government and requires that biodiversity is adequately considered in spatial planning.
Disaster Management Amendment Bill	Outlines how ecosystems should be considered in the updated Disaster Management Act.

2.2 Wetland Management within the District

Currently there is no specific designated wetland management authority within the Garden Route district. Instead, the management of wetlands is a collective effort between the GRDM and the seven local Category-M Municipalities within the Garden Route district, along with the various government authorities and parastatals such as DFFE, DEA&DP, CapeNature and SANParks and private stakeholders, each of which manage wetlands through their own key mandates and legislative requirements and capacity.

The local Municipalities have different capacity levels that influences the effectiveness of wetland management on the ground, depending on their financial status, number of dedicated environmental management officers employed for this function, as well as their capacity for enforcement.

Parastatals such as SANParks and CapeNature are highly effective in terms of the land that they manage, however these entities only cover certain sections of land within the district. SANParks exclusively manages the national parks areas whilst CapeNature manages land where Working for Wetlands is working on wetland rehabilitation projects. Private land, which is interspersed between state and municipal owned land located in between, is managed as is seen fit by the separate municipalities and individual landowners. As such, there is no holistic management of wetlands and due to differences in agendas of each entity, there is little to no cooperative action between parties which puts wetlands at risk from mismanagement.

2.3 Local and regional partnerships and programmes managing wetlands within the Garden Route district

In addition to the collective municipal work that is being undertaken at both the district and local level to monitor and manage wetlands within the Garden Route district, there are numerous projects and activities currently being implemented within and around wetlands by both the public and private sector as well as several NGOs. The projects currently underway within Garden Route District Municipality are summarised in Annexure C of this document.

3. Development of the Garden Route District Wetland Strategy and Action Plan

Prior to the development of the original Wetland Strategy and Action Plan (WSAP), it was critical to undertake an extensive and inclusive stakeholder engagement process to gather all relevant information and inputs from key stakeholders for populating the WSAP, as well as ensuring critical stakeholder buy-in. To achieve this, as part of the LAB: Wetlands SA project, ICLEI-Local Governments for Sustainability and Garden Route District Municipality engaged with key stakeholders (provincial, district and local municipal officials within Garden Route District Municipality as well as representatives from local NGOs, private landowners and farmers) in three key ways namely, through a Wetland Awareness Raising Workshop, one on one meetings which facilitated the development of the Garden Route District Municipality Wetland Report (2017) and at a WSAP Workshop to gather the required information for inclusion in the WSAP and secure stakeholder buy-in at the local level.

The Wetland Awareness Raising Workshop was undertaken in George in November 2015. Prior to this workshop, a desktop study was undertaken to ascertain which stakeholders within Garden Route District Municipality are working in the planning and biodiversity sectors. All identified stakeholders were invited to the workshop which was then used to not only raise awareness of the value of wetlands but also to identify possible stakeholders who should also be included in the WSAP development process.

After the Wetland Awareness Raising Workshop, ICLEI-Local Governments for Sustainability and Garden Route District Municipality co-developed the Garden Route District Municipality: Wetland Report throughout the course of 2016. The Wetland Report was a desktop study and aimed to include all the known information on wetlands within the municipality. One on one interviews were undertaken with all stakeholders identified up until that point and resulted in critical information being gathered for the Wetland Report. These engagements also resulted in critical 'gaps' in wetland management being identified that need to be addressed. This set the scene for the final stakeholder engagement – the WSAP Workshop.

The Garden Route WSAP Workshop was held in George in August 2016. All stakeholders identified during previous engagements were invited to attend. During the workshop feedback on the findings of the Garden Route District Municipality: Wetland Report were presented to the stakeholders, namely the critical ecosystem services the wetlands within Garden Route provide, the threats to these wetlands and the gaps in wetland management. This set the scene for the development of the WSAP.

The WSAP is outlined below and includes all identified issues as well as proposed solutions as developed by all stakeholders present at the WSAP workshop, as well as those that contributed to the Garden Route District Municipality Wetland Report.

The WSAP was reviewed in order for all the relevant wetland information to be updated, and to provide for the additional inputs of stakeholders during the reviewed document's stakeholder participation process. The reviewed document will cover the 5-year period between 2026 – 2031. The review also endeavoured to obtain all the current wetland projects, programmes and initiatives which are currently being implemented, as well as those planned for the next 5 years, of all the local Municipalities, government authorities, NGO's and relevant stakeholders within the district.

4. References

Brinson M.M. 1993. A hydro-geomorphic classification for wetlands. Wetland Research Programme Technical Report WRP-DE-4.

Cowan, G.I. 1995. Wetlands of South Africa. Pretoria: Department of Environmental Affairs and Tourism.

Department of Water and Sanitation, 2025. Rehabilitation Management Guidelines. Rehabilitation Management Guidelines for Wetlands. Report 2.2. Sources Directed Studies. Report No: RDM/RMG/00/IHP/SDS/0222. Pretoria, South Africa

Department of Water and Sanitation (DWS), 2015. Reserve Determination Studies for Surface Water, Groundwater, Estuaries and Wetlands in the Gouritz Water Management Area: Wetland Report. Prepared by Rountree, M (Fluvius Consultants) for Scherman Colloty & Associates cc.. Report no. RDM/WMA16/03/CON/0513.

Ewart-Smith, J.L., DJ Ollis, J.A. Day and H.L. Malan. 2006. National Wetland Inventory: development of a wetland classification system for South Africa. WRC Report No. KV 174/06.

ICLEI. 2017. Garden Route District Municipality Wetland Report. ICLEI, Cape Town.

Joosten, H. & Clarke D. 2002. Wise use of mires and peatlands: Background and principles including a framework for decision-making. International Mire Conservation Group and International Peat Society, Jyväskylä.

Kotze D.C. 1999. A system for supporting wetland management decisions. Ph.D. thesis. School of Applied Environmental Sciences, University of Natal, Pietermaritzburg.

Marneweck G.C and Batchelor A. L 2002. Wetland classification, mapping, and inventory.

Water Research Commission (WRC). 2008. WET- Origins – Controls on the distribution and dynamics of wetlands in South Africa. Water Research Commission Project (Report No: TT 334/08).

5. Garden Route District Wetland Strategy and Action Plan (2026- 2031)

VISION STATEMENT

" The Garden Route District has ecologically healthy wetland systems that are valued for the diversity of life they support and the benefits they provide to their communities".

VALUES

- ✓ *Information:*
  To provide credible information that is accessible to all and that is used to inform wetland management.
- ✓ *Partnerships and Collaboration:*
  To create partnerships that will assist in effective wetland management and to share information and ideas.
- ✓ *Open Communications:*
  To facilitate community feedback mechanisms and build knowledge, awareness and appreciation of wetlands within the community as a whole.
- ✓ *Ecological Integrity:*
  To promote wetland conservation and restoration so that ecosystem services are maintained in the long- term.
- ✓ *Sustainable Livelihoods:*
  To recognise the inter-dependence between communities and wetland resources in all the work undertaken by Garden Route District Municipality.

FOCUS AREAS (3 – 6 strategic interventions / priorities):

1. *Conservation and protection of wetlands*
2. *Research and mapping of wetlands throughout the Garden Route district*
3. *Awareness raising and education*
4. *Coordination of wetland management between multiple stakeholders*
5. *Mainstreaming wetland conservation into land use planning*
6. *Sustainable use of wetland ecosystem services within the Garden Route district.*

(S.M.A.R.T.)* GOALS FOR EACH FOCUS AREA *(Action, Detail, Measure, Unit, Deadline)	
FOCUS AREA 1: *Conservation and protection of wetlands*	***Goal 1.1*** Compile guiding principles and objectives for wetland systems management within GRDM – for best practice.
	Goal 1.2 Identify and prioritise pilot projects for inclusion in the IDP.
	Goal 1.3 Include objectives for wetland management in the IDP.
FOCUS AREA 2: *Research and mapping of wetlands throughout Garden Route District Municipality*	***Goal 2.1*** Obtain information from Working for Wetlands, Department of Agriculture and local municipalities regarding wetlands in need of rehabilitation.
	Goal 2.2 Compile the best available spatial information into a map for inclusion in the SDF as well as to facilitate a clearer understanding of current status quo of wetlands within GRDM.
FOCUS AREA 3: *Awareness raising and education*	***Goal 3.1*** Develop/ package material for municipal departments to raise awareness (and subsequently build buy-in).
	Goal 3.2 Sourcing of funding and potential funding opportunities
FOCUS AREA 4: *Coordination of wetland management between multiple stakeholders*	Goal 4.1 Contact the coordinator of the GRDM SDF development unit to gain a clear understanding of timelines for including information into the SDF.
	Goal 4.2 Ensure wetlands are addressed / represented on existing coordination platforms.
	Goal 4.3 Ensure Sector Plans take wetlands into consideration.

FOCUS AREA 5: *Mainstreaming wetland conservation into land use planning*	**Goal 5.1** Compile the best available spatial information into a map for inclusion in the SDF as well as to facilitate a clearer understanding of current status quo of wetlands within GRDM.
	Goal 5.2 Include wetland management in the IDP.
	Goal 5.3 Identify and prioritise pilot projects for inclusion in the SDF.
	Goal 5.4 Review the legal home/ rational for the Wetland Management Plan to give it weight.
FOCUS AREA 6: *Sustainable use of wetland ecosystem services within GRDM*	**Goal 6.1** Identify and prioritise pilot projects for inclusion in the SDF.

HIGH LEVEL ACTION PLAN			
FOCUS AREA & GOALS	KEY ACTIONS	RESPONSIBILITY	TIME FRAME
Focus Area 1: *Conservation and protection of wetlands*			

Goal 1.1: Compile guiding principles and objectives for wetland systems management within the Garden Route district – for best practice.	• (Review and consult on below draft objectives and management principles)
	• Objective 1 – Ensuring wetland protection
	• Objective 2 - Ensuring long-term sustainable wetland use
	• Objective 3 - Research and monitoring
	• Objective 4 - Climate change mitigation and adaptation
	• Objective 5 - Ensuring up to date spatial information and mapping
	  • Management Principle 1 – Maintenance of connectivity
	  • Management Principle 2 – Maintenance of landscape heterogeneity
	  • Management Principle 3 – Maintenance of biodiversity & complexity
	  • Management Principle 4 – Maintenance of intact aquatic ecosystems
	  • Management Principle 5 – Disturbance identification to guide management
	  • Management Principle 6 – Maintenance of important wetland functioning
		District Municipality, local Municipalities and key stakeholders/organisations	2026 - 2031

Goal 1.2: Identify and prioritise pilot projects for inclusion in the IDP.	• Identify priority pilot projects and technical, human and financial resource requirements:
	  o Alien invasive species management & control
	  o Fire management
	  o Water and solid waste pollution identification
	  o Identification of remedial action
		District municipality, local municipalities and key stakeholders/organisations	2026 - 2031

HIGH LEVEL ACTION PLAN			
FOCUS AREA & GOALS	KEY ACTIONS	RESPONSIBILITY	TIME FRAME
	○ Retention, stabilisation and rehabilitation structures ○ Water quality monitoring ○ Clean-ups ○ Identification of upstream/catchment disturbance/activities		
Goal 1.3 Include objectives for wetland management in the IDP.	• Stakeholder consultation and IDP inclusion	District municipality and local municipalities (IDP developers, coordinators and managers)	2026 - 2031 (next IDP review or amendment processes of GRDM and local Municipalities)
Focus Area 2: ***Research and mapping of wetlands throughout the Garden Route district***			
Goal 2.1 Obtain information from Working for Wetlands, Department of Agriculture and local municipalities regarding wetlands in need of rehabilitation.	• Maintain regular stakeholder participation • Identify priority wetlands in need of rehabilitation within the Garden Route District • Identify degree of rehabilitation/techniques and action needed. • Identify available funding and funding opportunities	District municipality, local municipalities and key stakeholders/organisations	2026 - 2031
Goal 2.2 Compile the best available spatial information into a map for inclusion in the SDF as well as to facilitate a clearer understanding of	• Collaborate with stakeholders and similar key projects to gather the most up-to-date spatial information on wetland location & wetland boundaries • Obtain historical spatial information to identify: ○ wetland disappearance;	District municipality and local municipalities (SDF developers, coordinators and managers)	2026 - 2031 (next SDF review or amendment processes of

HIGH LEVEL ACTION PLAN			
FOCUS AREA & GOALS	KEY ACTIONS	RESPONSIBILITY	TIME FRAME
current status quo of wetlands within the district.	○ decreasing wetland/boundary size; or ○ Changing structures/profiles ○ Stakeholder engagement and inclusion in SDF.		GRDM and local Municipalities
Focus Area 3: *Awareness raising and education*			
Goal 3.1 Develop/ package material for municipal departments to raise awareness (and subsequently build buy-in).	• Identify and prioritise information gaps and needs; • Conduct knowledge and perspectives survey to facilitate above; • Identify priority threatened wetlands and conduct/coordinate campaigns	District municipality, local municipalities and key stakeholders/organisations	2026 - 2031 (ongoing)
Goal 3.2 Sourcing of funding and potential funding opportunities	• Stakeholder collaboration and sourcing of funding/funding opportunities	District municipality and local municipalities (IDP developers, coordinators and managers)	2026 – 2031 (ongoing)
Focus Area 4: Coordination of wetland management between multiple stakeholders			
Goal 4.1 Contact the coordinator of the GRDM SDF development unit to gain a clear understanding of timelines for including information into the SDF.	• Stakeholder consultation and rehabilitation; • Conduct and coordinate and roadshows in collaboration with local Municipalities; • Media messages and notices.	District municipality and local municipalities (SDF developers, coordinators and managers)	2026 - 2031 (next SDF review or amendment processes of GRDM and local Municipalities
Goal 4.2 Ensure wetlands are addressed / represented on existing coordination platforms.	• Stakeholder collaboration and consultation; • Identification of wetland management champions within the Garden Route District.	District municipality, local municipalities and key stakeholders/organisations	2026 – 2031 (ongoing)

HIGH LEVEL ACTION PLAN			
FOCUS AREA & GOALS	KEY ACTIONS	RESPONSIBILITY	TIME FRAME
Goal 4.3 Ensure Sector Plans take wetlands into consideration.	• Consultation and collaboration with sector plan managers, developers and coordinators; • Awareness and educational workshops to sensitize and inform Sectoral Plan managers, developers and coordinators.	District municipality, local municipalities and key stakeholders/organisations	2026 – 2031 (ongoing)
Focus Area 5: *Mainstreaming wetland conservation into land use planning*			
Goal 5.1 Compile the best available spatial information into a map for inclusion in the SDF as well as to facilitate a clearer understanding of current status quo of wetlands within the district.	• Identify what spatial information is available currently; • Identify who is currently undertaking mapping, the process undertaken to do this and to what extent they are mapping etc. (key people who do the on the ground main streaming); • Identify the gaps in mapping and spatial data as well as status of wetlands (based on above points); • Identify best available method (based on municipality) to develop required spatial data and best method for mainstreaming; • Develop spatial information map (and/or associated tools informed by above points); • Contact the coordinator of the GRDM SDF development unit to gain a clear understanding of timelines for including information into the SDF; • Attend SDF planning meeting and present argument for inclusion of wetland map/spatial layer in SDF; • When SDF goes out for public participation, encourage DM and LMs as well as local communities to comment in favour of wetland inclusion in SDF;	District municipality and local municipalities (SDF developers, coordinators and managers)	2026 - 2031 (next SDF review or amendment processes of GRDM and local Municipalities

HIGH LEVEL ACTION PLAN			
FOCUS AREA & GOALS	KEY ACTIONS	RESPONSIBILITY	TIME FRAME
	• Once map is included in SDF, in order to mainstream, capacity building and training with key decision makers and land use planners on spatial data and maps.		
Goal 5.2 Include wetland management in the IDP.	• Establish to what degree wetlands are addressed in the current IDP; • Identify where wetlands can be inserted into the IDP; • Develop sentence/ clause for inclusion of IDP based on IDP guiding methodology; • Contact the coordinator of the GRDM IDP development unit to gain a clear understanding of timelines for including information into the IDP; • Attend IDP planning meeting and present argument for inclusion of wetlands in IDP –focus on how wetlands can assist municipality to save money through utilising "ecological infrastructure"; When IDP goes out for public participation, encourage DM and LMs as well as local communities to comment in favour of wetland inclusion in IDP.	District municipality and local municipalities (IDP developers, coordinators and managers)	2026 - 2031 (next IDP review or amendment processes of GRDM and local Municipalities
Goal 5.3 Identify and prioritise pilot projects for inclusion in the SDF/IDP.	• In addition to above mapping, to inform the development of projects, map ; 1) Status of wetlands (e.g. degraded, pristine etc.); 2) Wetlands which are threatened by climate change and anthropogenic impacts which are subsequently at risk from losing their ecosystem service delivery to municipalities (flood attenuation, water filtration etc.); • Workshop the map(s) with key stakeholders in order to prioritise work that needs to be done; identify focus area	District municipality and local municipalities (SDF/IDP developers, coordinators and managers)	2026 - 2031 (next SDF and IDP review or amendment processes of GRDM and local Municipalities

HIGH LEVEL ACTION PLAN			
FOCUS AREA & GOALS	KEY ACTIONS	RESPONSIBILITY	TIME FRAME
	within the municipality and develop projects; establish roles and responsibilities for project implementation as well departmental focus area and capacity; • Contact the coordinator of the GRDM SDF development unit to gain a clear understanding of timelines for including information into the SDF; • Attend SDF planning meeting and present argument for inclusion of pilot project into SDF; When SDF goes out for public participation, encourage DM and LMs who will be implementing pilot projects to comment in favour of inclusion of pilot projects in SDF.		
Goal 5.4 Review the legal home/ rational for the Wetland Management Plan to give it weight.		Biodiversity Strategy / National Water Act	Biodiversity Strategy / Water Act
Focus Area 6: *Sustainable use of wetland ecosystem services within the Garden Route district*			
Goal 6.1 Identify and prioritise pilot projects for inclusion in the IDP.	• Monitor and regulate new environmental authorization applications that will affect wetlands; • Identify sustainability projects that will benefit the neighbouring communities; • Identify community upliftment opportunities and products/services for sustainable wetland use; • Prioritise wetlands of tourism and conservation value.	District municipality and local municipalities (IDP developers, coordinators and managers)	2026 - 2031 (next IDP review or amendment processes of GRDM and local Municipalities

Annexure A: Condition, Threats and Rehabilitation Recommendations for Priority Wetlands

*__Table 5:__ Condition, Threats and Rehabilitation Recommendations for Priority Wetlands in the Gouritz Area (DWS, 2025).

Wetland	Characteristics of wetland	Major threats	Rehabilitation recommendations
Duiwenhoks	Hydrological condition: partially degraded. Physical condition: upper reaches are intact, but very large, rapidly eroding donga is degrading the wetland. Socio-economic/poverty: it flows into the Duiwenhoks dam which supplies a large amount of water.	Major headcut, agricultural encroachment, burning/removal of palmiet.	Erosion dongas need to be stabilised to protect remaining wetlands. Rehabilitation of the entire eroded system is not feasible. These interventions will be very costly, but will protect downstream catchment watercourse from further sedimentation impacts.
Goukou river system	Biodiversity: Fairly pristine for a palmiet system. Socio-economic/poverty: supply of water, and farms depend on it. Physical condition: fairly pristine, lower down it is degraded. Two of the tributaries are degraded.	Agriculture; invasive alien vegetation.	One rehabilitation structure that needs to be built to secure a large area of wetland.
Bitou River floodplain and estuary	Biodiversity: has a unique mixture of biodiversity. The floodplain transitions to the estuary (confluence with the Keurbooms estuary). Hydrological intactness: waste water return flows, reduced inflows.	Encroachment from existing and proposed landuses. In addition, minor impacts from a proposed dam may occur in future, and invasive alien vegetation on the floodplains.	
Keurbooms river catchment (upper)	Hydrological intactness: it is important as it feeds the entire Keurbooms. Socio-economic/poverty: it is an important area, score similar to Upper Palmiet – but slightly higher because it is bigger. Physical condition: in the upper areas there was a lot of erosion – there are also dams, but to get in there it would be very expensive.	Very high threat due to the amount of AIPs everywhere, there are also trout farms in this system.	There are many small problems that can be dealt with; especially the management of invasive alien plants, but the upper catchment is difficult to access and rehabilitation there would be challenging.
Gwaing river system	Biodiversity: it is an urban river that runs through George, with a large number of wetlands throughout the area, it is fairly degraded. Socio-economic/poverty: golf courses etc. benefit.	Very high – development, pollution, waste water discharge from Waste Water Plant.	Alien clearing, river rehabilitation, it would be a good investment to remove Alien Invasive Plants (AIPs) in these wetlands as they are easily accessible etc.

**Taken from the Reserve Determination Studies for Surface Water, Groundwater, Estuaries and Wetlands in the Gouritz Water Management Area: Wetland Report.*

Wetland	Characteristics of wetland	Major threats	Rehabilitation recommendations
Salt River system (Knysna)	Hydrological intactness: large quantities of siltation, there is an informal settlement above it. Socio-economic/poverty: there is a large community of people living in poverty nearby. It is comparable to Bigai River. Physical condition: not good, but probably better than the Bigai River, there are also alien species.	High threats particularly from sewerage.	Education and clean-up exercises could be done, intervention measures would be expensive.
Groenvlei	Biodiversity: It is the only endorheic coastal lake and the water level is about 3 meters above sea-level. Very unique. Hydrological intactness: hydrology is marginally changed. Socio-economic/poverty: it is important for recreation such as bass angling. Essentially all lakes in this area are fairly important for tourism etc. Physical condition: still good.	There are a number of threats – alien fish, bass, carp, tilapia etc., groundwater use, pollution, hydrological changes, and development.	Interventions would include curbing groundwater use and development, and control alien fish (carp – have decreased from fishing, which is good news). Some can be solved, could do more signage and interpretation.
Salt River system (Crags)	Biodiversity: this is probably comparable to the Groot River, particularly in invertebrates, it has no fish. Hydrological intactness: there is more water going out of this river than the previous example; however there is still a fair amount flowing down it. Socio-economic/poverty: it is providing water, there is the possibility of tours by local communities. Physical condition: it is currently still fairly pristine.	The threats to this system are high – Kurland Polo Estate in particular – sewerage and pollutants from the estate, the threat is quite high because it's pristine downstream, there are also plans to pipe water to Plettenberg Bay from this system.	Alien removal in upper catchments could be done.

Wetland	Characteristics of wetland	Major threats	Rehabilitation recommendations
Upper Knysna catchment (incl. Gouna)	Biodiversity: high biodiversity – there is still a lot of Palmiet, Gouna – has high biodiversity, Knysna River has important invertebrates and there are a diversity of habitats (big pools, vleis etc.) in this system which is very rare. Hydrological intactness: mostly intact, 99% of water abstraction comes from lower parts of this system. There are some plantations in Gouna. Socio-economic/poverty: it is important because it's feeding into the Knysna Estuary and providing water. Physical condition: Gouna is good but there are plantations and dairy farms, Knysna is not in as good condition but there is clearing going on.	There are a number of threats such as erosion and AIPs, however this is being addressed. It's not as bad as the Palmiet, but no one has looked into it much.	A lot of high altitude AIP removal work would have to be done which is expensive.
Kaaimans river system	Socio-economic/poverty: extremely important for George. Physical condition: still in good condition.	Threats: high, a dam is being built.	Invasive alien plant control, but it is a very steep system.
Tshokwane wetland (lower Keurbooms)	Already impacted by extensive development and encroachment.	Proposed development, currently draining, alien plants, mining nearby and roads.	Road needs better drainage, change culverts.
Wilderness Lakes system	Biodiversity: it is a national park and a Ramsar site. Hydrological intactness: it is modified, it does still get breached, and the percentage of loss of flow is high. Socio-economic/poverty: very important for recreation and tourism. Physical condition: there is a lot of modification, emergent vegetation because the flooding has been altered.	Creeping development, effluent etc.	There are some small interventions that could help, rehabilitate the vegetation, and do artificial flooding.
Karatara	Biodiversity: similar to Diep and Wolwe river. Hydrological intactness: the most modified of the three, abstraction high. Socio-economic/poverty: need water for Sedgefield from this system. Physical condition: probably quite good, nor heavily eroded.	Abstraction, AIPs, but there are two clearing programmes going on.	Not much that can be done, they are building a dam.

Wetland	Characteristics of wetland	Major threats	Rehabilitation recommendations
Wolwe / Diep River	Physical condition: there is a lot of development in the middle reaches, with changes to the riparian zone, localised erosion etc.	A possible threat is the reversal of the forestry exit decision – there could be reforestation pressure.	Monitor any expansion of afforestation to limit encroachment; IAP control.
Groot Brak plateau / Varings River	Impacted from reduced flows and invasive alien vegetation.	Threats: AIPs and farming, there are a lot of applications for increased abstraction for farming.	Rehabilitation: alien clearing.
Maalgate river system	Hydrological intactness: there are numerous farm dams. Socio-economic/poverty: many people benefit – farming.	AIPs, trout farms and other farming activities.	AIP clearing, not much can be done about farm dams.
Klein Wolwe	Hydrological intactness: highly modified, compounded by farm dams etc. Socio-economic/poverty: important for industry. Physical condition: Highly modified, lowest in terms of river health assessment.	Dairy farming impacts.	There have been effluent spills – milk by-products. Could do artificial wetlands before it goes into the estuary to purify water – so there is opportunity.
Piesang River	Biodiversity: very degraded. Hydrological intactness: inter-basin transfer, dams. Socio-economic/poverty: high value as the town relies on the water. Physical condition: physical condition is probably all right in terms of the estuary at the bottom.	High from development (sewage, dumping, municipal dump seepage etc.)	Some rehabilitation potential at the Roodefontein Golf Estate. There are some opportunities in the upper catchment.
Duiwenhoks (eastern eroded reach)	Hydrological intactness: degraded. Physical condition: not much left, essentially just an erosion gully.	Erosion dongas are the primary threat, as well as IAPs.	Could be rehabilitated slightly, the wetlands need to be rehydrated, but this will be very costly. However, in the long term it would save the entire system downstream.
Bigai River (Knysna Golf course)	Biodiversity: not much, it's an urbanised river system, Typha is an indication that it is degraded, but this will help to filter the water before going into the Knysna Estuary. Socio-economic/poverty: it is near to areas of poverty, it is important locally but not for tourism.	High effluent from Hornlee and Hunters Home, erosion etc.	Minor - rehabilitate erosion problems.

Wetland	Characteristics of wetland	Major threats	Rehabilitation recommendations
Upper Groot Doring seep zones	Biodiversity: high species diversity. Hydrological intactness: fairly intact. Socio-economic/poverty: feeds into the Doring River system, many farmers probably benefit.	Severe groundwater abstraction near the Zebra Railway Station.	Not much can be done at this point except monitoring.
Hoogekraal		Golf estate and Sedgefield inter-basin transfer.	In the upper reaches there are possible areas which could provide opportunities for erosion preventions etc.
Touw River	Biodiversity: this system extends to the top of Outeniqua, mostly falls into protected areas. Hydrological intactness: only a small amount of abstraction. Physical condition: the condition is still fairly good, it is not incised, AIPs clearing has been ongoing.	Abstraction will increase, another 35% is predicted to be abstracted for Wilderness, there is also a threat from pollution, sewerage pipes etc.	Can't stop development, but can sort out the AIPs.
Geelbeksvlei / Brandwag River	Degraded due to IAPs and reduced flows.	Aliens, water abstraction.	Not much can be done.
Goukamma/ Homtini upper catchment	Biodiversity: the mountain catchment is fairly good, there are farmlands in the middle reaches, and the system rejuvenates slightly towards lower reaches. Hydrological intactness: the headwaters are not very impacted. Socio-economic/poverty: a lot of people depend on it, but it's not that crucial. Physical condition: there are some nice forested gorges.	Aliens, agriculture.	Alien removal, erosion could be solved but it is steep terrain.
Moordkuil River	Biodiversity: Palmiet wetlands in this system. Hydrological intactness: still intact, mostly AIPs affect the flow, abstraction high. Socio-economic/poverty: important.	Heavy AIP infestation.	Alien clearing can be done – wattle.
Duive River / Langvlei Spruit	Hydrological intactness: it is a perennial river that stops flowing – altered. Physical condition: August 2008 floods affected it severely in lower reaches, it is eroded.	Increased agricultural use.	It is quite an inaccessible region so interventions would be costly.

Wetland	Characteristics of wetland	Major threats	Rehabilitation recommendations
Robberg Vlei	Not much was known about this vlei amongst the expert group, scoring was done intuitively	Probably high from development and storm water etc.	
Ruigtevlei	Biodiversity: very saline, mainly reeds, not a unique system, plantations surround it. Hydrological intactness: there are a number of roads, it's possibly been fairly modified in the past 100 years – there may have been more links between this and Groenvlei. Socio-economic/poverty: not a lot of value.	Plantations – water level could have been affected by the plantations, it's also in the aeolian sand dune system. Probably also groundwater fed.	Limited opportunities for rehabilitation.
Perdespruit	Hydrological intactness: it is completely altered, it used to be one of the temporary channels that was part of the bigger system when flooding. The connectivity with Swartvlei has been lost. There are culverts. Physical condition: road culverts etc.	Threats are getting worse – AIPs etc.	In order to restore this system – millions would have to be invested, all the constrictions would have to be removed, the N2 would have to be moved, and therefore this is not viable.
Vankervelsvlei	Biodiversity: extremely unique aspargnum wetland (forms the peat). A plant survey has been done. Hydrological intactness: very intact, groundwater fed by the TMG aquifer – not affected by the plantations at all. Socio-economic/poverty: it is not really benefiting anyone per se, but the plantation owners won't touch it – it's safe. It could have tourism potential. Physical condition: good.	TMG abstraction would be the only perceivable threat.	Low cost for high return – tourism – signage etc. Another similar small wetland was identified nearby, but this had been impacted by trees and had dried up (found by FSC – Forest Stewardship Council).
Groot River (including Nature's Valley)	Biodiversity: this is quite a diverse and pristine system, with two red-data-book fish species. The system does not really have large wetlands upstream, but there are fynbos seeps in the mountains. There are several systems that are similar systems in terms of biodiversity, so it is not unique. The Upper Groot River is mostly contained within a conservation area so it is fairly secure. A pristine area like this should be important as it has a high corridor function. Socio-economic/poverty: socio-economic benefit/potential is low; there are not many houses there. Physical condition: the system is virtually pristine physically.	Possible development and water abstraction. Sewage is only a minor problem in Nature's Valley.	A strategic intervention could be to raise the road, and move three houses, this could solve the artificial breaching problem of the estuary system. A high input for relatively low return, so a low score.

Wetland	Characteristics of wetland	Major threats	Rehabilitation recommendations
Upper Palmiet (Soetkraal/Keurbooms)	Biodiversity: this area was last burnt in 2005, there is a large alien invasive problem, but making headway with this. Ten years ago it was completely degraded with wattle, hakea and pine. An important fish species is found here: Pseudobarbas, it is the only place where it does not co-occur with alien fish, it is also the most endangered fish in SANParks land. Hydrological intactness: it flows into the Keurbooms River so it is important, however there are also alien invasive plants (AIPs). Socio-economic/poverty: it is feeding into a big system where there is a lot of development. Plettenberg Bay is taking water from Keurbooms. Physical condition: it seems fairly unmodified, AIPs may have changed it, it is eroded towards the east, but unsure.	AIPs are a threat in the whole catchment, but it is being dealt with.	There is already an existing project here and it is also in a conservation area.

Annexure B: Summarised Criteria and Scores

***Table 6:** Summarised Criteria and Scores Used to Rank Priority Wetlands in the Gouritz Area (DWS, 2025).

Wetland name	Condition (0: highly degraded; 10: pristine)				Risk of degradation (0: none to 10: high, immediate threat)	Comments on impacts	Priority ranking number and consideration for rapid wetland assessment (two priority wetlands were selected for rapid Ecostatus assessment)
	Biodiversity	Hydrological	Physical	Median score			
Duiwenhoks (upper catchment)	9	8	9	**9**	***9***	Primarily non-flow related: Still pristine Palmiet wetland in uppermost zone, but high risk of rapid erosion as well as encroachment from agriculture.	1: Priority # 1: large wetland threatened by rapid erosion and invasive vegetation, as well as flow abstractions.
Goukou river system	8	8	7	**8**	***9***	Primarily non-flow related: Palmiet wetland system which is eroding fast, farming impacts	2: Excluded from wetland assessment as the wetland type, threats and processes are very similar to priority #1.
Bitou River floodplain and estuary	8	6	7	**7**	***9***	Non-flow and flow related: In the lower zone there is infilling and impacts from roads/bridges. Upstream alien plants, roads through the floodplain and farming impact upon the floodplain.	3: Priority for wetland assessment as this system has a unique mix of biodiversity, but is threatened by waste-water return flows, abstraction and proposed dam developments.
Keurbooms river catchment (upper)	6	6	5	**6**	***9***	Alien invasive vegetation and forestry. Alien fish (trout) are present.	4: River reserve site is located here to address flow problems.
Gwaing river system	6	6	4	**6**	***9***	Alien plants. Development pressures, urban impacts (township, industry). Pollution.	5: A large number of wetlands are present in this urban (city of George) watercourse. Alien clearing should be considered to improve the EC.
Salt river system (Knysna)	4	4	5	**4**	***9***	Urban development, siltation and water quality (sewage) impacts.	6
Groenvlei	8	9	8	**8**	***8***	Groundwater dependant wetland which is impacted by alien fish species. Minor development pressures, although boreholes are potentially a risk.	7: Evaluated in the previous Outeniqua study. EIS and PES are high.
Salt river system (Crags)	9	8	8	**8**	***8***	Near pristine system but threats from catchment degradation (aliens, farming, housing, polo fields, industry) are present. Significant threat from abstraction.	8

**Taken from the Reserve Determination Studies for Surface Water, Groundwater, Estuaries and Wetlands in the Gouritz Water Management Area: Wetland Report.*

Wetland name	Condition (0: highly degraded; 10: pristine)				Risk of degradation (0: none to 10: high, immediate threat)	Comments on impacts	Priority ranking number and consideration for rapid wetland assessment (two priority wetlands were selected for rapid Ecostatus assessment)
	Biodiversity	Hydrological	Physical	Median score			
Upper Knysna catchment (incl. Gouna)	9	8	7	**8**	***8***	Farming pressures, alien vegetation, abstraction and afforestation.	9
Kaaimans river system	8	6	8	**8**	***8***	Road impact, plus potential and current water abstraction.	10
Tshokwane wetland (lower Keurbooms)	8	7	7	**7**	***8***	Infested with alien plants, drains, and road needs installation of better culverts. Potential development pressure.	11
Wilderness Lakes system	10	6	6	**6**	***8***	This Ramsar site of interconnected lakes is threatened by continued development creep and effluent (water quality) risks associated with elevated nutrients and pesticides. Abstraction and alien fish are also of concern.	12
Karatara	8	6	7	**7**	***8***	Stressed by abstraction. Farming pressure. Alien plants.	13
Wolwe / Diep River	8	7	6	**7**	***8***	Stressed by abstraction. Farming pressure. Alien plants. Reforestation pressure	14
Groot Brak plateau / Varings River	6	6	6	**6**	***8***	Abstraction. Farming pressure. Alien plants.	15
Maalgate River system	7	5	6	**6**	***8***	Alien plants. Golf course development. Farming pressure. Upper area granite geology.	16
Klein Wolwe	5	4	4	**4**	***8***	Stressed by abstraction. Farming pressure. Alien plants. Opportunity for artificial wetland in lower reach	17
Piesang river	4	3	4	**4**	***8***	Urban development. Sewage. Dumping. Municipal dump seepage.	18
Duiwenhoks (eroded reach)	4	4	2	**4**	***8***	Degraded palmiet system affected by deep erosion donga.	19

Wetland name	Condition (0: highly degraded; 10: pristine)				Risk of degradation (0: none to 10: high, immediate threat)	Comments on impacts	Priority ranking number and consideration for rapid wetland assessment (two priority wetlands were selected for rapid Ecostatus assessment)
	Biodiversity	Hydrological	Physical	Median score			
Bigai River (Knysna Golf course)	3	3	3	**3**	***8***	Urban and farming. Development.	20
Upper Groot Doring seep zones	8	9	8	**8**	***7***	Wilderness area. Drains into Klein Karoo.	21
Hoogekraal	8	8	8	**8**	***7***	Stressed by abstraction. Farming pressure. Alien plants	22
Touw River	8	8	8	**8**	***7***	Ramsar site. Development pressures. Potential pollution (nutrients, pesticides). Farming impacts. Abstraction threat. Alien fish.	23
Geelbeksvlei / Brandwag River	7	7	7	**7**	***7***	Alien aquatic plants. Big (size counts).	24
Goukamma/ Homtini upper catchment	6	7	7	**7**	***7***	Abstraction and farming. Alien vegetation	25
Moordkuil river	7	7	6	**7**	***7***	Alien plants. Opportunity – alien clearing.	26
Duive River / Langvlei Spruit	6	5	5	**5**	***7***	Farming pressure. Abstraction. Alien plants. Alien fish & other fauna. Plantations	27
Robberg Vlei	5	6	5	**5**	***7***	Dry. Isolated from main water source (from Piesang river?). Development pressure.	28
Ruigtevlei	7	6	6	**6**	***6***	Plantation impacts. Sedgefield waterworks abstraction. Ecological corridor.	29
Perdespruit	3	2	3	**3**	***6***	Blocked shortcut flow to Swartvlei. Floodplain. Flooded under flood conditions. Could be opened easily. Alien infested.	30
Vankerwelsvlei	9	10	10	**10**	***5***	Unique. Peat system. Plantation. Ground water fed. Opportunities for monitoring and interpretation.	31: Unique wetland but very low risk of impacts.

Wetland name	Condition (0: highly degraded; 10: pristine)				Risk of degradation (0: none to 10: high, immediate threat)	Comments on impacts	Priority ranking number and consideration for rapid wetland assessment (two priority wetlands were selected for rapid Ecostatus assessment)
	Biodiversity	Hydrological	Physical	Median score			
Groot River (incl. Nature's Valley)	7	9	9	**9**	***4***	Degraded and sewage problems (lower catchment) upper area pristine. Possible development threat (water abstraction). Artificial breaching of estuary.	32
Upper Palmiet (Soetkraal/ Keurbooms)	8	8	6	**8**	***4***	Lots of work done. Lots of aliens still. Post-fire rehab needed. Water for Plettenberg Bay.	33

Annexure C: Current and Planned Municipal and Stakeholder Wetland Projects and Initiatives

Municipality / Authority / NGO / Stakeholder	Current Project/s / Programme / Initiative	Planned Project/s / Programme / Initiative (next five years)	Comment