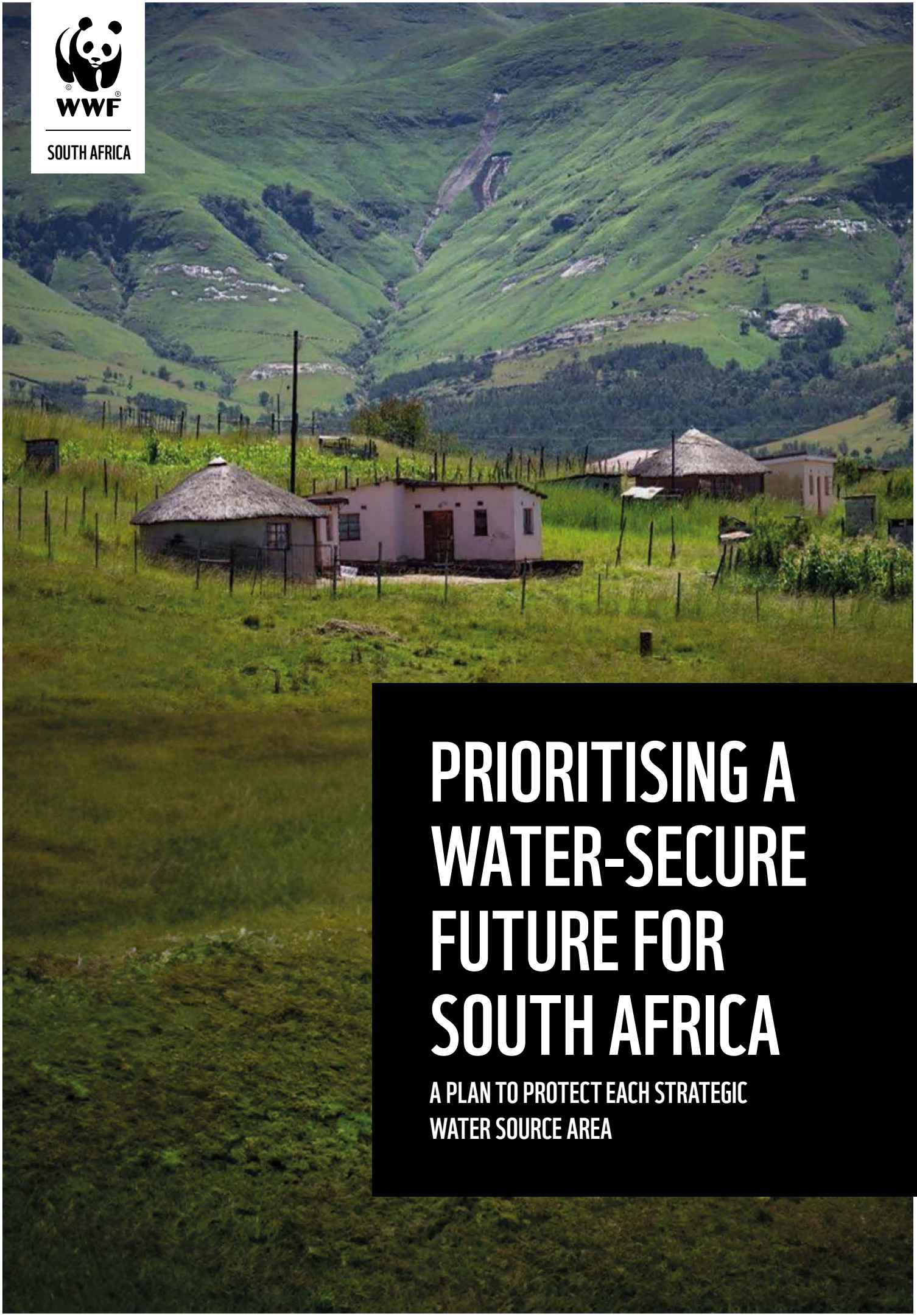


WWF

SOUTH AFRICA

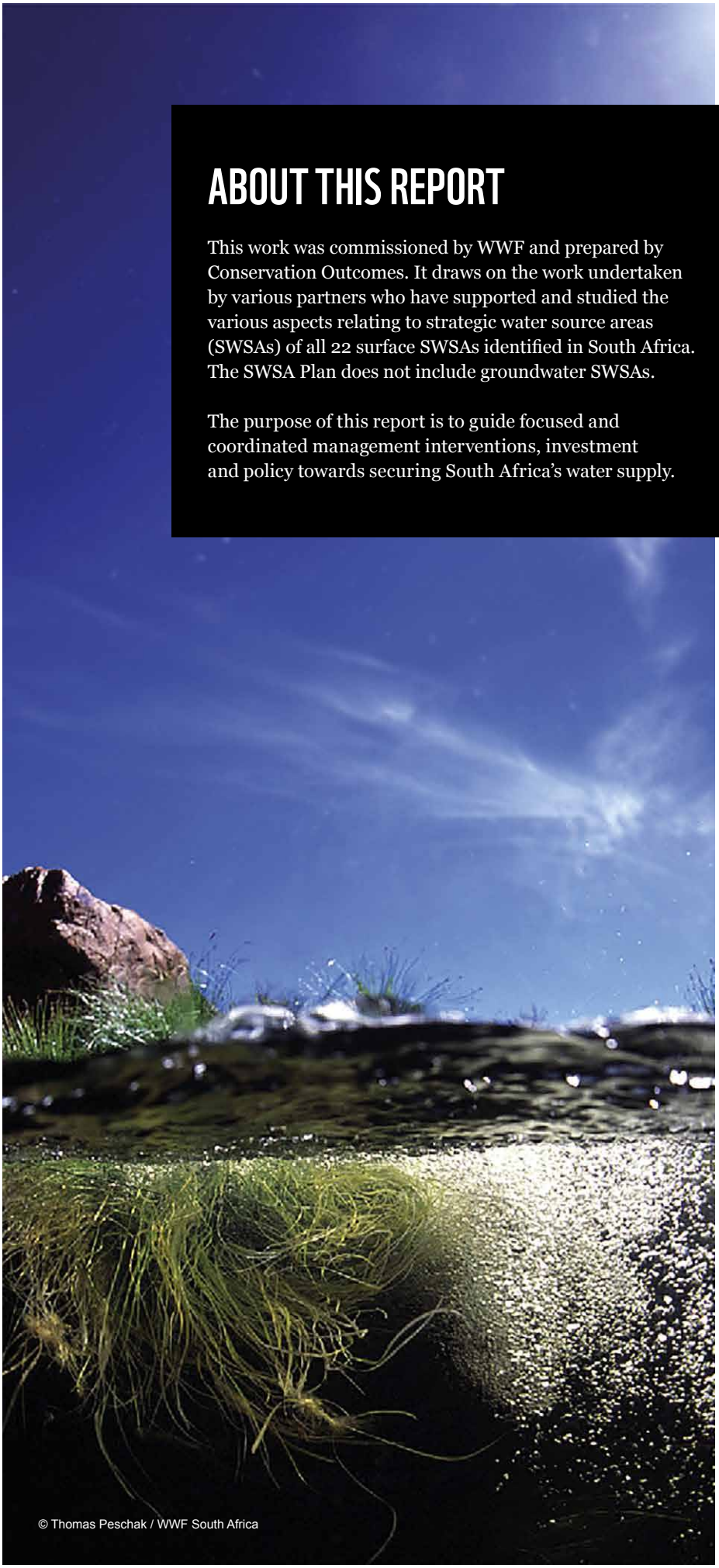
PRIORITISING A WATER-SECURE FUTURE FOR SOUTH AFRICA

A PLAN TO PROTECT EACH STRATEGIC WATER SOURCE AREA

ABOUT THIS REPORT

This work was commissioned by WWF and prepared by Conservation Outcomes. It draws on the work undertaken by various partners who have supported and studied the various aspects relating to strategic water source areas (SWSAs) of all 22 surface SWSAs identified in South Africa. The SWSA Plan does not include groundwater SWSAs.

The purpose of this report is to guide focused and coordinated management interventions, investment and policy towards securing South Africa's water supply.



© Thomas Peschak / WWF South Africa

Author: Kevin McCann (Conservation Outcomes)

Key contributors: Mark Botha (Conservation Strategy Tactics and Insight), Genevieve Pence (consultant) and Brian Reeves (consultant)

Reviewers: Silindile Mtshali (WWF), Zama Ndlovu (WWF) and Nolwazi Ngcobo (WWF)

The members of the project steering committee are thanked for their time and insights provided in guiding the project throughout its development:

- Kevin McCann: Conservation Outcomes
- Silindile Mtshali: WWF South Africa
- Nolwazi Ngcobo: WWF South Africa
- Mkhululi Silandela: WWF South Africa
- Jackie Jay: Department of Forestry, Fisheries and the Environment (DFFE)
- Yakeen Atwaru: Department of Water and Sanitation (DWS)
- Stanley Tshitwamulomoni: DFFE
- Nontutuzelo Gola: South African National Biodiversity Institute (SANBI)
- Takalani Murulana: The Nature Conservancy

We also thank those who participated in the stakeholder engagement workshops for their contributions.

Editorial production: Sue Northam-Ras (WWF)

Editing and design: Roothold Sustainability Communications

Cover photo: © Angus Burns / WWF South Africa

© Text 2026 WWF South Africa

All rights reserved

WWF South Africa is a registered non-profit organisation, number 003-226 NPO. © 1986 Panda symbol WWF – World Wide Fund for Nature (Formerly World Wildlife Fund) ® "WWF" is a WWF Registered Trademark.

Published in 2026 by WWF (World Wide Fund for Nature; formerly World Wildlife Fund), Cape Town, South Africa. Any reproduction in full or in part must mention the title and credit the above-mentioned publisher as the copyright owner.

WWF is an independent global conservation organisation, formed in 1961 and committed to building a future where people and nature thrive. Our mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature by conserving biodiversity, ensuring the sustainable use of natural resources and promoting the reduction of wasteful consumption and pollution.

Active in more than 100 countries, WWF uses science to focus on innovative solutions for people and nature. We collaborate with businesses, governments, Indigenous Peoples, local communities and scientists, ensuring that priorities are shared and knowledge is integrated. Together, we can ensure conservation has a lasting impact.

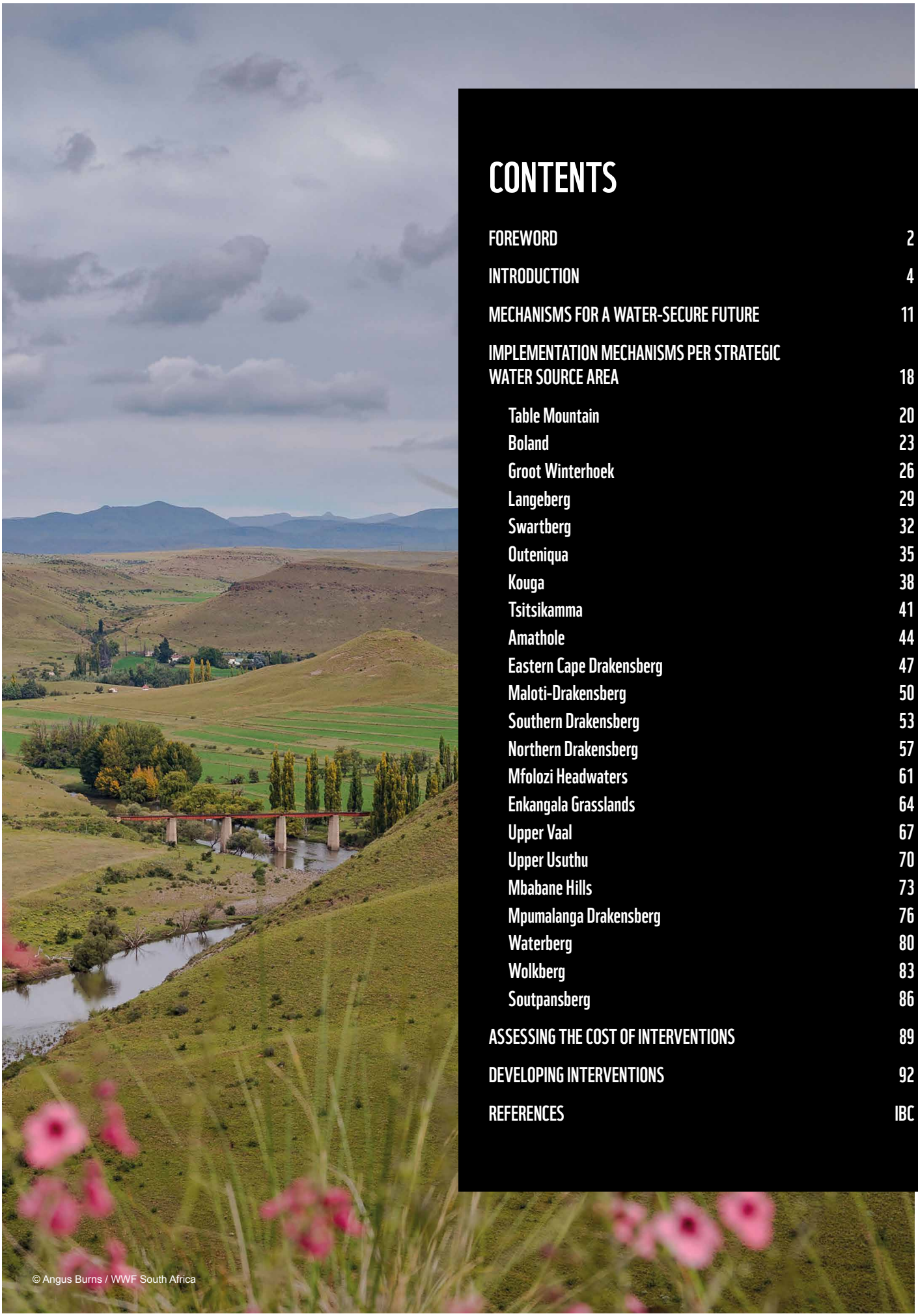
WWF South Africa is a national office in the global WWF network. Started in South Africa in 1968, we are a local non-governmental organisation (NGO) with a vision to create a future in which people and nature thrive. Our aim is to secure and enhance millions of hectares of land and sea for the well-being of millions of people. Nature is our home.

WWF South Africa acknowledges the financial support of Sanlam, which enabled the development of this report.

WWF

TOGETHER INVESTING IN THE FUTURE OF SOUTH AFRICA'S FRESHWATER ECOSYSTEMS

Sanlam



CONTENTS

FOREWORD 2

INTRODUCTION 4

MECHANISMS FOR A WATER-SECURE FUTURE 11

IMPLEMENTATION MECHANISMS PER STRATEGIC WATER SOURCE AREA 18

- Table Mountain 20
- Boland 23
- Groot Winterhoek 26
- Langeberg 29
- Swartberg 32
- Outeniqua 35
- Kouga 38
- Tsitsikamma 41
- Amathole 44
- Eastern Cape Drakensberg 47
- Maloti-Drakensberg 50
- Southern Drakensberg 53
- Northern Drakensberg 57
- Mfolozi Headwaters 61
- Enkangala Grasslands 64
- Upper Vaal 67
- Upper Usuthu 70
- Mbabane Hills 73
- Mpumalanga Drakensberg 76
- Waterberg 80
- Wolkberg 83
- Soutpansberg 86

ASSESSING THE COST OF INTERVENTIONS 89

DEVELOPING INTERVENTIONS 92

REFERENCES IBC


© Heather Dugmore / WWF South Africa

FOREWORD

Water is central to South Africa's future. It supports our economy, food production, public health and the well-being of our communities. Yet, we are facing a growing water crisis, made worse by climate change, environmental degradation and increasing demand.

We know the challenges, and we know that the longer we delay action, the more difficult and costly they become.

Our Constitution guarantees the right of access to sufficient food and water. However, for many South Africans, reliable access to safe water remains a daily challenge. Too many municipalities, communities and businesses can no longer rely on safe, reliable water services. This is particularly true for vulnerable communities, where women and young people often bear the greatest burden of water insecurity, affecting their health, education and opportunities to earn a living. Addressing water security is therefore also about improving people's lives and creating a more equitable society.

In July 2026, President Cyril Ramaphosa introduced the National Water Action Plan (NWAP) to ensure a reliable supply of quality water for all South Africans, aiming to address the root causes of the water supply challenges in many municipalities. This national plan outlines strategic interventions to address the water crisis over the short, medium and long term.

The NWAP was developed by the National Water Crisis Committee (WATERCOM), which was established following the 2026 State of the Nation Address in response to increasingly severe water supply interruptions in several parts of the country. WATERCOM will meet regularly to oversee the implementation of the NWAP and to hold the responsible departments and agencies accountable for delivery.

Much of the national response to the water crisis has understandably focused on infrastructure and service delivery. While these investments are essential, we must urgently pay significant attention to where our water comes from.

Protecting and restoring our strategic water source areas (SWSAs) – the high-lying natural areas that give rise to our major rivers – must become an integral part of how we secure the country's water future. This is no less important than building and maintaining the infrastructure that delivers water where it is needed.

Seeing SWSAs recognised in national legislation is a big step in the right direction. In 2024, the Department of Forestry, Fisheries and the Environment developed a national framework for securing SWSAs. In 2025, the Department of Water and Sanitation convened a National Water and Sanitation Indaba, which called for stronger collaboration and improved water governance.

In 2026, the SWSA Plan – as defined in this new report, *Prioritising a water-secure future for South Africa: a plan to protect each strategic water source area* – is an important step to drive collaborative action in ensuring national water security. It moves us beyond recognising the importance of these areas towards a more deliberate, practical and coordinated effort to protect, manage and restore them. It identifies the actions, partnerships and investments needed and the responsibilities we must collectively take forward.

We are fortunate that there is already a strong foundation to build on.

Across the country, government, communities, landowners, businesses and conservation organisations are doing important work. The challenge now is to connect these efforts, address the gaps and ensure that the work happens at the scale required.

The success of this work will ultimately be measured by access to sufficient clean water that will forever support the well-being of those who depend on it.



MORNÉ DU PLESSIS
CEO, WWF SOUTH AFRICA

INTRODUCTION

South Africa is a water-scarce country. Strategic water source areas are the ecological infrastructure that provides our water. To ensure water security for all before it is too late, we need to prioritise healthy, fresh water by looking after these areas.



Strategic water source areas (SWSAs) are critical landscapes that support the well-being of South Africa's people and economy. Although they cover only 10% of the land area across South Africa, Eswatini and Lesotho, they supply more than 50% of South Africa's fresh water. This water supports half the population, two-thirds of economic activity, 70% of irrigated agriculture, more than 90% of urban water users and up to 42% of all river baseflow.

Strategic water source areas have been progressively defined over several years, starting with the definition in the National Water Resource Strategy of 2013, which states that SWSAs are areas that "supply a disproportionately high amount of the country's mean annual run-off in relation to their surface area". Early versions of the National Spatial Biodiversity Assessment (2004) included a map of the tertiary and quaternary catchments that jointly supplied about 50% of the country's water, calling these "high water yield catchments".

In 2011, the *Atlas of Freshwater Ecosystem Priority Areas for South Africa* included a map of high-water-yield areas. These were identified slightly differently, as sub-quaternary catchments with mean annual run-off at least three times more than the average for the related primary catchment.

In 2013, SWSAs for surface water were conceptualised as they are today, but the methodology used to delineate them spatially has evolved. The first map of SWSAs, finalised in 2013, identified 21 surface SWSAs across South Africa, Lesotho and Eswatini. This delineation found that 8% of the area of these countries supplied 50% of the surface water run-off (Colvin et al., 2013).

In 2018, an updated map of SWSAs was released from a Water Research Commission project. This map identified 22 SWSAs based on a generalised 1,7 × 1,7 km resolution mean annual run-off dataset. This delineation included some new inland SWSAs that were strategically important for specific industries like power generation, and it excluded some SWSAs that met the original criteria but were not deemed strategic due to being short, coastal catchment areas. The new delineation found that 10% of the area of South Africa, Lesotho and Eswatini supplied 50% of the area's surface water run-off.

In 2021, updated data and the latest geostatistical approaches were used to delineate SWSAs at a finer resolution of 90 × 90 m, with the primary purpose being to refine the spatial resolution so that SWSAs can be reliably integrated into a range of catchment- and local-level planning, management and regulatory processes (Lötter and Le Maitre, 2021).

WHY THIS SWSA PLAN IS NEEDED

The most important SWSAs for securing South Africa's water resources were identified in 2021. They cover more than 10 million hectares (ha). This report builds on that work by:

- Identifying the top 50% within those areas that are the most important for securing biodiversity, water resources and human well-being (Table 1)
- Proposing a strategic plan to guide appropriate interventions to secure SWSAs and promote land management that supports the long-term sustainability of these vital water source areas.



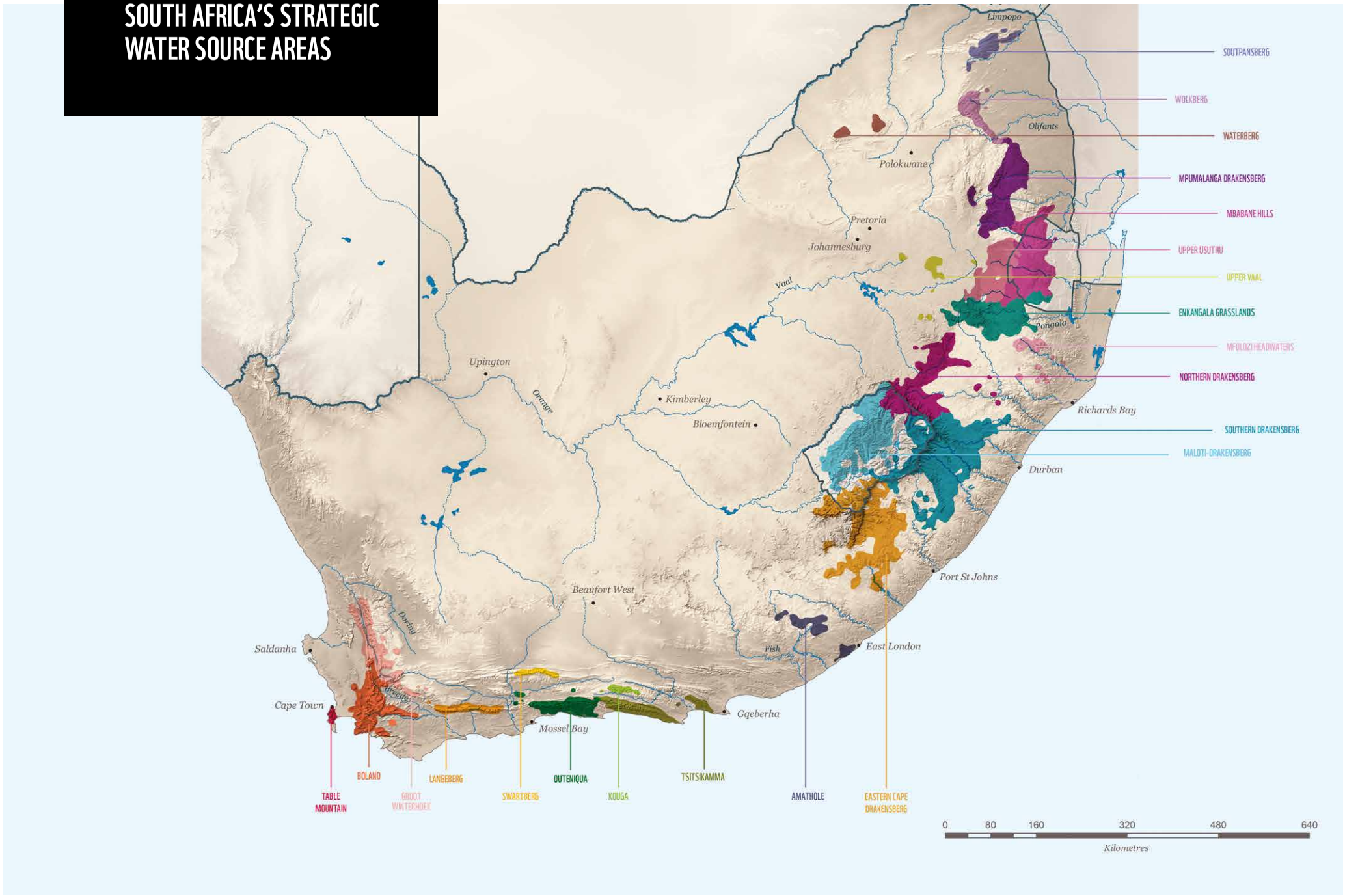


Figure 1: South Africa's 22 surface strategic water source areas

Table 1: Extent of priority areas within each strategic water source area

	NAME	EXTENT OF SWSA (ha)	AREA TO BE PRIORITISED (ha)
	Table Mountain	47 241	24 069
	Boland	608 040	306 656
	Groot Winterhoek	518 277	261 517
	Langeberg	171 515	88 771
	Swartberg	77 984	39 325
	Outeniqua	304 233	153 415
	Kouga	63 099	31 903
	Tsitsikamma	322 201	162 314
	Amathole	200 162	103 735
	Eastern Cape Drakensberg	1 452 839	728 158
	Maloti-Drakensberg	154 703	79 416
	Southern Drakensberg	1 842 147	927 659
	Northern Drakensberg	868 804	435 006
	Mfolozi Headwaters	192 069	99 422
	Enkangala Grasslands	788 131	394 843
	Upper Vaal	139 401	71 889
	Upper Usuthu	539 331	274 336
	Mbabane Hills	295 783	148 121
	Mpumalanga Drakensberg	837 274	419 486
	Waterberg	103 220	52 136
	Wolkberg	259 639	130 910
	Soutpansberg	234 685	117 747
		10 020 776	**5 050 835**

DEFINING "SECURE"

What constitutes "secure"? The Department of Forestry, Fisheries and the Environment (DFFE) (2024) defines what it means to "secure" water as follows:

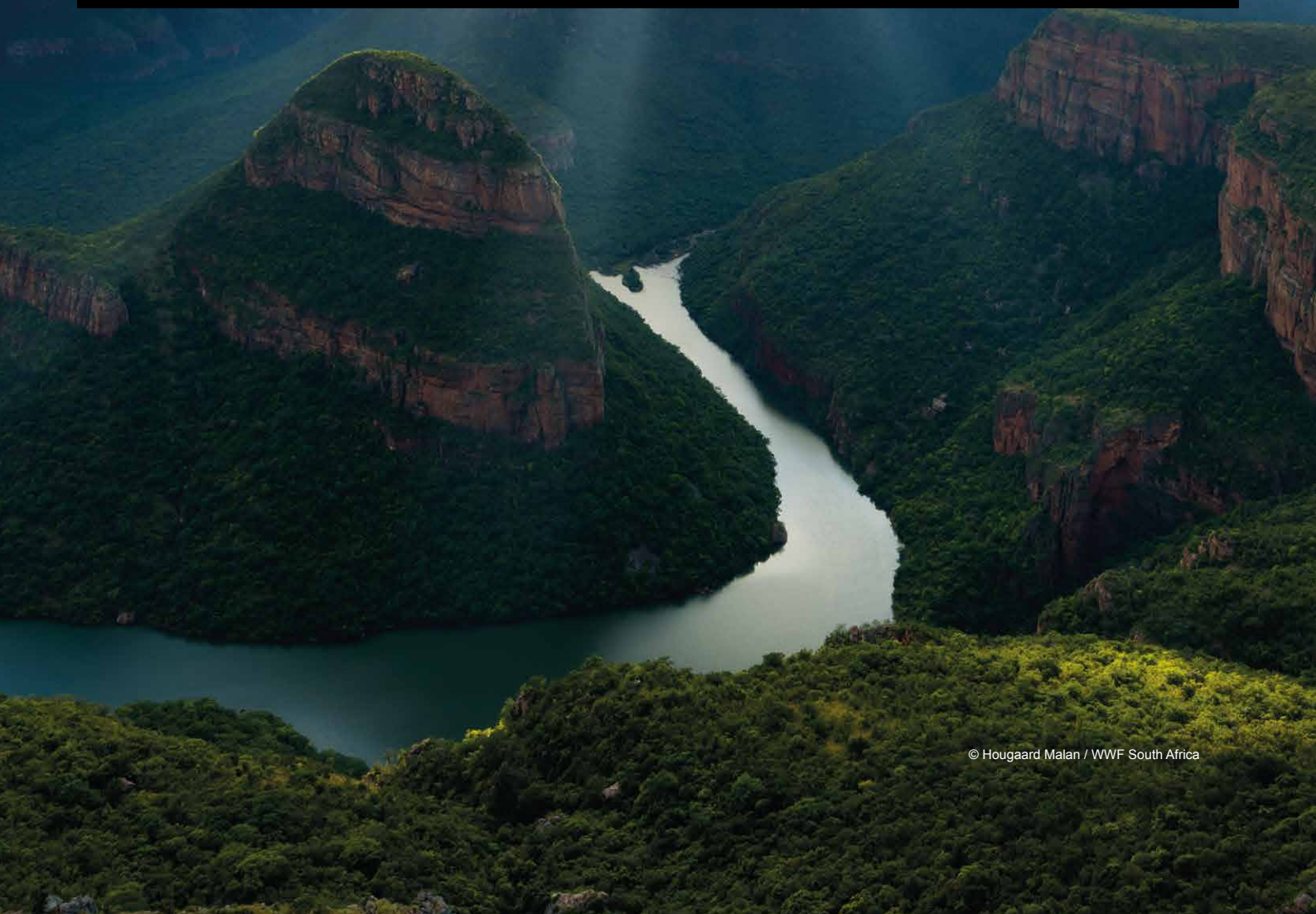
> The progressive, collaborative and adaptive implementation of a range of mechanisms that aim to enhance the ability of SWSAs to deliver the maximum quantity of good-quality fresh water for people, economic activity and ecosystems, both within and downstream, in a way that helps assure efficient, equitable and sustainable water supply and access to water for all.

Based on extensive stakeholder engagement, this definition has been modified for the purpose of developing this plan because it was felt that greater emphasis needed to be placed on:

- Ensuring equitable benefits within the catchment
- Strengthening the role of ecological infrastructure alongside built infrastructure
- The role of monitoring to demonstrate the impact of interventions to secure SWSAs.

As a result of these engagements and stakeholder inputs, the following revised definition of "secure" is proposed and forms the basis of this report:

> **The progressive, collaborative and adaptive implementation of a range of mechanisms that aim to enhance the ability of SWSAs to deliver improved quantities of good-quality fresh water. This can be achieved through better management and restoration of key water-related ecological infrastructure, in a manner that provides equitable benefit to people within the SWSA, improves economic activity and secures access to a sustainable water supply for all.**



© Hougaard Malan / WWF South Africa

METHODOLOGY

The early phase of this work focused on developing a method for spatial prioritisation. The planning domain for identifying the priority areas was defined using the nationally mapped SWSA boundaries, which were intersected with quinary catchments to create consistent planning units while maintaining the full extent of each SWSA for tracking conservation targets. A quinary catchment represents the fifth tier of a hierarchical river drainage classification system. It is a local area where rainfall and run-off drain into the same stream or section of a river, allowing impacts to be assessed at a much finer scale.

Spatial datasets describing ecological, hydrological and socio-economic characteristics were compiled for each planning unit. To enable comparison across different datasets, all values were standardised using Z-scores and converted into a common priority scale ranging from zero (lowest priority) to 10 (highest priority). A steering committee guided the development and approval of 10 prioritisation criteria, grouped under three themes: nature positive, water positive and people positive. These criteria considered ecological integrity and biodiversity importance; water production and fresh water ecosystem condition; downstream dependence; disaster risk reduction; and community reliance on ecosystem services.

Several data-processing steps were undertaken to improve consistency and avoid duplication, including resolving overlaps between spatial datasets such as protected areas and critical biodiversity areas. Three alternative prioritisation scenarios were then tested to evaluate different weighting approaches. After a technical review, a two-phase prioritisation approach was selected. Under this approach, planning units were first ranked according to their combined nature-positive and water-positive scores, with people-positive criteria used to distinguish areas of similar ecological importance and to ensure social priorities were represented.

The highest-ranking quinary catchments were selected until 50% of the area of each SWSA was reached, providing a transparent, evidence-based foundation for subsequent conservation planning and implementation.



The highest-ranking quinary catchments were selected until 50% of the area of each SWSA was reached, providing a transparent, evidence-based foundation for subsequent conservation planning and implementation.

STAKEHOLDER ENGAGEMENT

WWF's aim is to support government's mandate through partnerships and collaboration, so this plan was developed with input from government, municipalities, civil society, the private sector, research institutions and other key stakeholders. This process ensured that it aligns with national priorities, incorporates diverse perspectives and builds shared understanding for implementation.

After the draft prioritisation approach was developed, four regional stakeholder workshops were held across the country to review the methodology, validate the results and identify opportunities for implementation. In total, 107 stakeholders were engaged, including 35 representatives from government, 64 representatives from civil society and the private sector, and eight representatives from municipalities.

The feedback received through these engagements strengthened this SWSA Plan by validating the prioritisation approach, identifying regional opportunities and implementation challenges, and ensuring that the proposed actions are practical and aligned with national and regional priorities.

As a result of these engagements, this plan responds to national priorities, answers the needs of our partners to work towards a water-secure future and aligns with our own ambitious Strategy 2030.

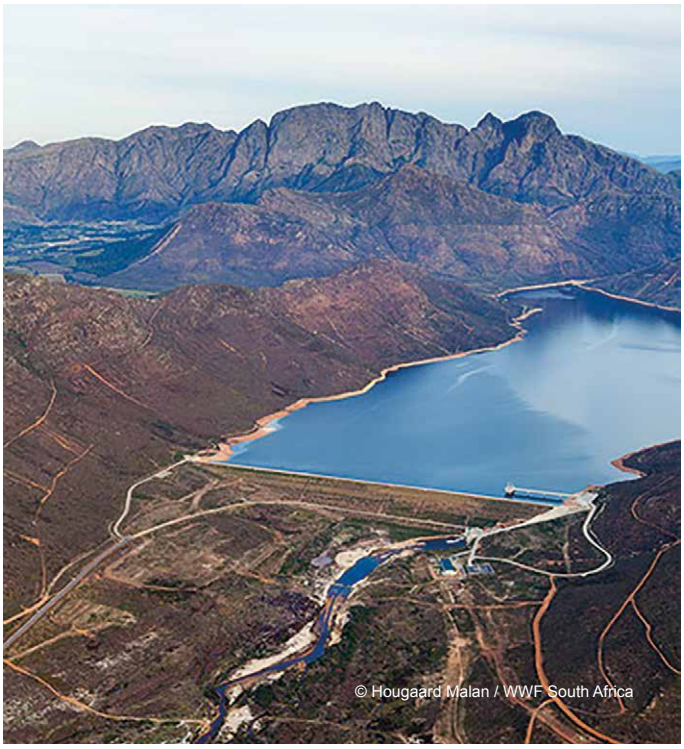


ALIGNMENT WITH THE NATIONAL FRAMEWORK

In 2024, the Department of Forestry, Fisheries and the Environment (DFFE) developed a national framework for securing SWSAs, which included key elements such as detailed reasons for the need to secure SWSAs; an assessment of the threats and pressures facing SWSAs; the legislative basis for securing SWSAs; and the broad state responsibilities for securing SWSAs. In 2025, the Department of Water and Sanitation convened a National Water and Sanitation Indaba, which called for stronger collaboration, improved water governance, greater investment into the water sector and faster implementation of actions that strengthen South Africa's water security.

This plan gives practical effect to the resolutions of this indaba. It also provides spatial evidence to support the implementation of the proposed National Water Act Amendment Bill (B1-2026), which was introduced in 2026 and which recognises, in Chapter 3A, SWSAs as nationally important water resources that require protection. Finally, it supports the National Water Resource Strategy (NWRS-3; 2023) by helping direct investment to and catchment management of the areas that contribute most to the country's water security.


© Angus Burns / WWF South Africa


© Hougaard Malan / WWF South Africa

GUIDING PRINCIPLES AND VALUES

The DFFE (2024) describes the following principles and values for identifying pathways to secure our water:

- **Win-win-win solutions.** Solutions should benefit the environment, local people and their livelihoods, as well as the water security of the country.
- **People must be central.** The framework and the actions emerging out of it must be centred on people and must highlight the people in all its interventions.
- **Collaboration and partnerships.** Collaboration and partnerships, within the state but also between the state and non-state actors, must be central to how securing is carried out.
- **Equity initiatives.** Equity must be a central principle in how the actors go about securing the SWSAs. This is equity in access to water resources (primarily for productive purposes), particularly who gets water if the SWSA is secured, and in the process more water becomes available for use/allocation.
- **Iterative and adaptive.** More understanding has been gained about the SWSAs over time through research by different entities. The approach to securing must therefore be iterative and adaptive – always seeking greater understanding and adjusting the interventions in line with improved understanding over time.
- **Integrated and holistic approaches.** The threats to SWSAs are not uniform and singular in nature. An integrated and holistic approach is therefore necessary in designing and implementing the mechanisms to secure the SWSAs.

MECHANISMS FOR A WATER-SECURE FUTURE

The DFFE divides the mechanisms to secure South Africa's water into three broad categories: "enabling", "implementation" and "adaptive".



These mechanisms are defined as follows:

- **Enabling mechanisms** are those that make implementation mechanisms possible or practical. They may also include mechanisms that give legal power, capacity or sanction to implementation mechanisms.
- **Implementation mechanisms** are operational in nature and result in a direct positive effect on water resources, that is, they take place on the ground.
- **Adaptive mechanisms** are those that improve the processes of securing SWSAs through enhancing understanding of how to adjust the enabling and implementation mechanisms to achieve sustainability, equity and efficiency in securing SWSAs in the long term.

Within each SWSA, it is envisioned that the stakeholders involved will use several different mechanisms that act together or in concert to secure SWSAs. The best suite of mechanisms for one SWSA may not be the same as for another with a different management and socio-ecological context.

ENABLING MECHANISMS

An enabling environment for interventions that secure SWSAs on the ground involves multiple aspects, including legislation and policy, institutional and collaboration initiatives and communication. Each of these facets is important, and understanding the range of available options provides a clear basis for undertaking implementation mechanisms.

Stakeholder engagements were undertaken to better understand the requirements for securing water resources within each SWSA. This process identified several national, cross-cutting enabling opportunities (Table 2).

IMPLEMENTATION MECHANISMS

Stakeholder engagements and the assessment of prioritised quinary catchments within SWSAs (based on local knowledge) highlighted interventions to address the security of SWSAs. These were broadly grouped into three categories: PROTECT, MANAGE and RESTORE (Table 3).



Table 2: Potential national, cross-cutting enabling mechanisms

POTENTIAL ENABLING MECHANISM	PROPOSED ACTIONS
National Water Act Amendment Bill	Co-develop regulations, providing stronger restrictions for activities within SWSAs and possibly restrictive land uses.
Water use licences	Rationalise water use licences within SWSAs, with additional restrictions on water use licences in SWSAs.
The Department of Forestry, Fisheries and the Environment's (DFFE's) Natural Resource Management programme	Engage with the DFFE's Natural Resource Management programme to revitalise the invasive alien plant (IAP) clearing programme in SWSAs.
The Department of Agriculture's (DoA's) LandCare programme	Engage with the DoA to revitalise the LandCare programme in provinces where it needs assistance.
Preservation and Development of Agricultural Land Act 39 of 2024	Engage the DoA on formulating regulations for protected agricultural areas within SWSAs, targeting conservation agriculture interventions.
Catchment management agencies	Support and strengthen catchment management agencies' capacity to address all strategic interventions.
National Environmental Management: Protected Areas Act 57 of 2003	Coordinate an amendment to the Protected Areas Act to strengthen the Mountain Catchment Areas Act 63 of 1970 and integrate SWSAs.
Restoration	Support the development of an overarching environmental authorisation (environmental impact assessments plus water use licences) for all rehabilitation activities within SWSAs to enable effective restoration.
Strategic planning	Mainstream SWSAs and their management requirements into all planning tools: catchment management agency strategic plans, municipal planning (spatial development frameworks, by-laws, climate adaptation plans), water boards and water user associations.
Resource quality objectives modelling for all river systems in SWSAs	Perform/undertake ecological reserve determinations and baseflow assessments for all river systems. These are the core water-protection measures used in water resource management (notably under South Africa's National Water Act 36 of 1998), clearly defining numerical limits and narrative statements used to balance the protection and utilisation of a water resource.
Fire protection associations	Integrate water-resource protection into fire management, including appropriate burning regimes, firebreak management and post-fire rehabilitation.
Biocontrol	Develop a coordinated and effective biocontrol programme for wattle and pine across all SWSAs.
Small-town sewerage works	Develop an understanding of the scale of water pollution from small-town sewerage works within SWSAs and engage key municipalities (through their Municipal Infrastructure Grant programme) to address failing sewerage works infrastructure.



Table 3: Interventions to secure SWSA

INTERVENTION	DESCRIPTION
PROTECT	
New acquisition	A parcel of land is purchased and managed (including specific water management interventions).
New private stewardship	A relevant stewardship agreement is finalised with individual or multiple private landowners, and an appropriate management plan (including specific water management interventions) is developed and implemented.
New corporate stewardship	A relevant stewardship agreement is finalised with a company, and an appropriate management plan (including specific water management interventions) is developed and implemented.
New community stewardship	A relevant stewardship agreement is finalised with a community, and an appropriate management plan (including specific water management interventions) is developed and implemented.
Management of existing protected areas and rehabilitation of protected areas and other effective area-based conservation measures (OECMs)	The management of existing protected areas and OECMs is improved to address water-related management issues (invasive alien plants [IAPs], fire management and erosion), with appropriate and sustained budget allocations.
MANAGE	
Stewardship maintenance – natural and rural	Natural ecosystems in stewardship sites are maintained through regular stewardship extension support.
Stewardship maintenance – forestry	Stewardship sites that consist predominantly of forestry are maintained through regular stewardship extension support.
Stewardship maintenance – private rangeland	Stewardship sites that consist of livestock rangelands under private ownership are maintained through regular stewardship extension support.
Stewardship maintenance – community rangeland	Stewardship sites that consist of livestock rangelands under communal ownership are maintained through regular stewardship extension support.
Conservation agricultural extension – permanent and temporary crops (commercial)	Extension support is provided to commercial agricultural landowners, supporting them in implementing conservation agriculture interventions (including soil improvement, erosion management, catchment management, crop selection and no-till farming, and water management).
Conservation agricultural extension – subsistence croplands	Extension support is provided to communal subsistence agricultural landowners, supporting them in implementing conservation agriculture interventions.
RESTORE	
Landscape-scale restoration	Landscape-scale restoration encompasses all the RESTORE measures below.
Restoration – urban and peri-urban	Specific water management interventions are implemented and fully funded, and budget is allocated for long-term maintenance.
Restoration IAP control – forestry	An IAP strategy is in place, fully funded and implemented (for commercial forestry land).
IAP control – community	An IAP strategy is in place, fully funded and implemented (for communal land).
IAP control – other (protected areas and private)	An IAP strategy is in place, fully funded and implemented (for private landowners).
Gully restoration	Fully funded and implemented gully erosion plan is in place to stabilise soil with indigenous vegetation.
Restoration erosion control – rangeland	Within rangelands – an erosion rehabilitation plan is in place, fully funded and implemented, with budget allocated for long-term maintenance.
Wetland and riparian restoration – forestry	Within forestry land – a wetland/riparian rehabilitation plan is in place, fully funded and implemented, with budget allocated for long-term maintenance of hard structures.
Wetland and riparian restoration – conservation agriculture and other (non-forestry)	Within agricultural land – a wetland/riparian rehabilitation plan is in place, fully funded and implemented, with budget allocated for long-term maintenance of any hard structures.

The implementation of mechanisms to secure SWSAs must respond to the specific regulatory and land use context of each site, including land tenure, applicable legislation and current land use. This plan therefore transitions from broad, catchment-scale prioritisation to the land parcel (cadastral) scale, where implementation opportunities can be linked to specific properties and actions.

The maps below provide an overview of the different types of land tenure, regulatory frameworks and land use. Figure 2 represents the distribution of land by tenure (categorised as state, communal/traditional authority or private owner) across SWSAs. Figure 3 shows areas formally protected under the National Environmental Management: Protected Areas Act (NEMPAA), alongside agricultural areas identified under the Preservation and Development of Agricultural Land Act 39 of 2024 (PDALA). Figure 4 illustrates the distribution of the major land use categories across South Africa's SWSAs.

Understanding land tenure is critical for identifying the most appropriate conservation, governance and implementation mechanisms, as the opportunities and constraints for intervention differ significantly between state-owned, communal and privately owned land. Figure 2 provides an important foundation for tailoring conservation approaches and strengthening partnerships with the relevant landowners and custodians.

Regulatory frameworks include formally declared protected areas under NEMPAA and agricultural areas identified under the PDALA framework. These legal instruments provide a strong foundation on which future protection and management efforts can build, while identifying areas where additional conservation mechanisms may be a required duty of care.

With regards to SWSAs, duty of care refers to the responsibility of landowners, land users, businesses and relevant authorities to take reasonable measures to prevent, minimise and remedy activities that degrade ecological infrastructure, compromise water quality or reduce water availability.

Figure 4 highlights the diversity of land uses, including natural landscapes, agriculture, forestry, urban settlements and mixed use that coexist in SWSAs. Understanding current land use patterns is essential for identifying key pressures on water resources, prioritising conservation, restoration and management interventions.

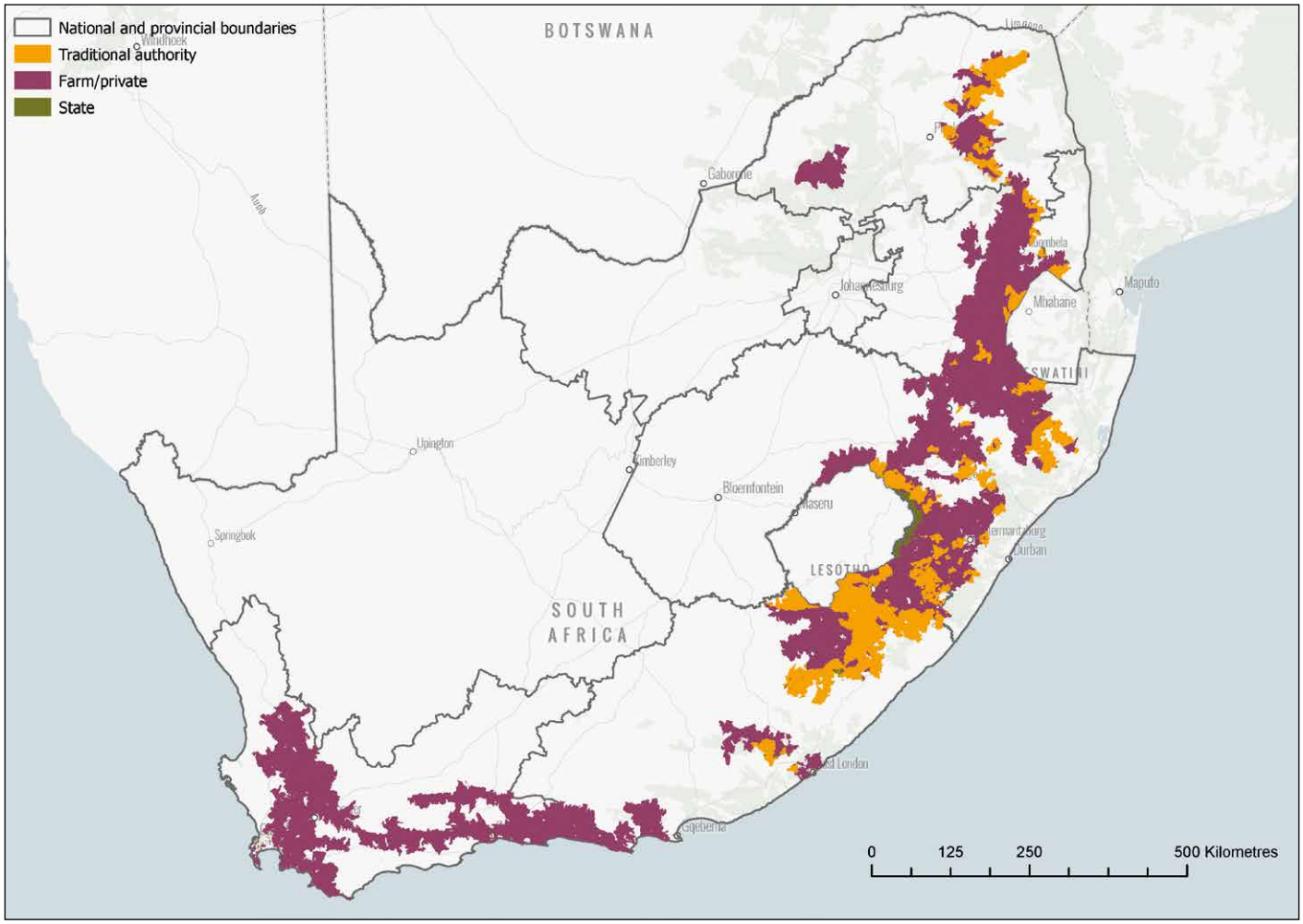


Figure 2: Distribution of different land tenure types within SWSAs

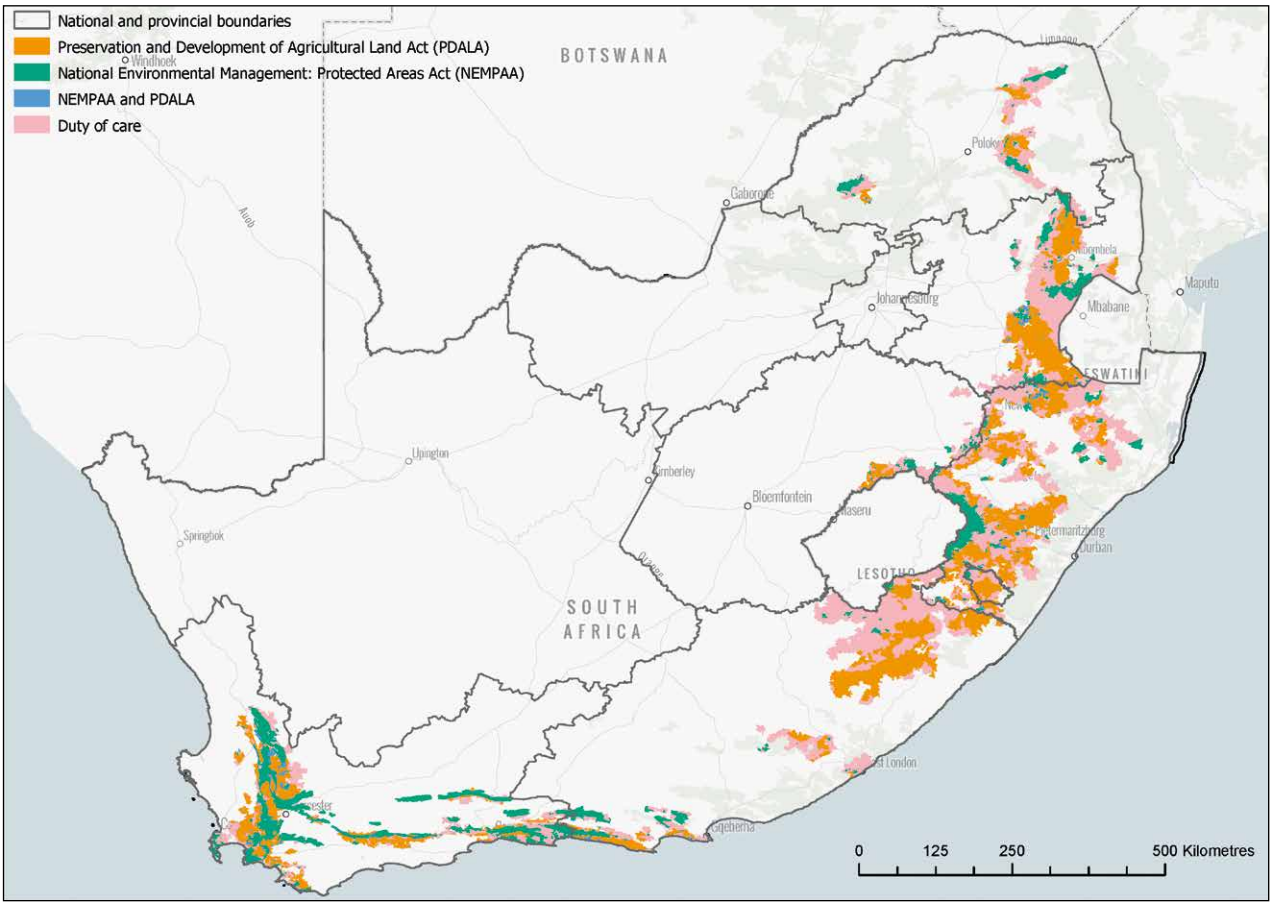


Figure 3: Distribution of different regulatory frameworks within SWSAs

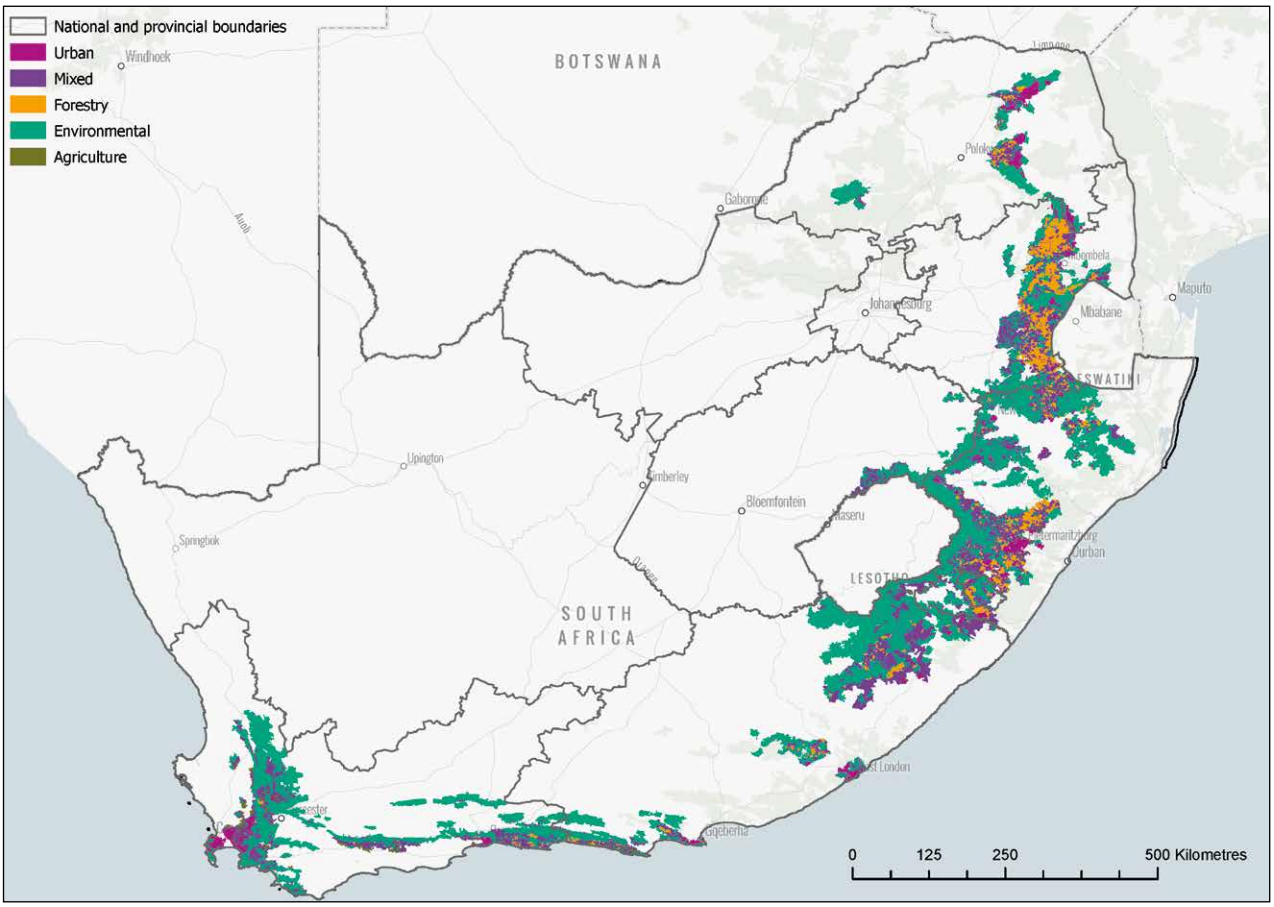


Figure 4: Distribution of different land uses within SWSAs

ADAPTIVE MECHANISMS

Adaptive mechanisms are those that improve the processes of securing SWSAs by enhancing understanding of how to adjust the enabling and implementation mechanisms to achieve sustainability, equity and efficiency in the long term. These mechanisms may include:

- Establishing monitoring, evaluation and learning (MEL) processes at the SWSA level to enable actors to look at their actions and evaluate how effective their interventions have been. This will help them adjust their practices and identify constraints in enabling mechanisms (for example, legislation or funding).
- Undertaking research on the progress in all SWSAs to share lessons across the board and use this learning to refine legislation, policy and practice.
- Developing collaborative systems of data capture, management and sharing to further facilitate adaptation and joint monitoring and learning.
- Communicating with the public, broadly and in the SWSAs, on the question of SWSAs and the need to secure them. At the SWSA level, this could include sharing lessons emerging from the MEL processes.

Table 4: Adaptive mechanisms identified for implementation

ADAPTIVE MECHANISM	SUPPORTING ACTIONS
Monitoring, evaluation and learning	Develop relevant and cost-effective standardised monitoring across all SWSAs, possibly through the South African Environmental Observation Network.
Restoration economy	Explore alien tree biomass projects.
Department of Mineral and Petroleum Resources (DMPR)	Engage the DMPR on the impacts of mining on SWSAs (e.g. the Mabola Protected Environment).
Youth development programmes	Explore opportunities, specifically those that use citizen science tools to monitor factors that affect water resources (e.g. alien plant infestations) and their impacts.
Transboundary monitoring and diagnostics programme	Strengthen diagnostic analysis, improve monitoring stations along transboundary river systems, and encourage data sharing between South Africa and Eswatini.
Potential carbon projects	Explore and potentially develop carbon projects to provide sources of finance to support sustainable land management.



IMPLEMENTATION MECHANISMS PER STRATEGIC WATER SOURCE AREA

This section provides an overview of the characteristics of each SWSA – including its ecological significance, land use and management context – and identifies the most suitable intervention opportunities to protect, manage and restore them.

The interventions identified as options to PROTECT focus on securing high-value natural ecosystems. Interventions that aim to MANAGE focus on strengthening sustainable land and water management across production and communal landscapes. RESTORE interventions target degraded ecosystems through interventions such as IAP clearing, wetland and riparian restoration, and erosion control. Together, these interventions provide a strategic framework for prioritising investment and action to improve long-term water security and ecosystem resilience.



DEFINITIONS OF INTERVENTIONS

PROTECT

INTERVENTION	DEFINITION
New acquisition	Not communal, not a protected area, not urban. Includes South African National Parks (SANParks) expansion
New private stewardship	Not communal, not a protected area, but in top 50%
New corporate stewardship	Partnerships with businesses/big water users to address shared water risks
New community stewardship	Traditional authority subset, not a protected area, but in top 50%
Management of existing protected areas and restoration of protected areas and other effective area-based conservation measures (OECMs)	Existing protected areas and OECMs, including "not adequately managed"

MANAGE

INTERVENTION	DEFINITION
Stewardship maintenance – natural and rural	Farm portion, not grassland, not urban
Stewardship maintenance – forestry	Farm portion, forestry land cover
Stewardship maintenance – private rangeland	Farm portion, not communal, grassland (rangelands) land cover
Stewardship maintenance – community rangeland	Communal land tenure, grassland (rangelands) land cover
Conservation agricultural extension – permanent and temporary crops (commercial)	Farm portion, crop agriculture land cover
Conservation agricultural extension – subsistence croplands	Communal, subsistence crop land cover

RESTORE

INTERVENTION	DEFINITION
Landscape-scale restoration	Area-wide planning and interventions focusing on integrated fire management, IAP clearing and conservation agriculture
Restoration – urban and peri-urban	Urban zone – more than 33% urban land cover
Restoration IAP control – forestry	Farm portion, forestry land cover, IAP category
IAP control – community	Communal tenure, forestry land cover, IAP category
IAP control – other (protected area and private)	Not in above, IAP category
Gully restoration	Farm portion, gully erosion mapped
Restoration erosion control – rangeland	Farm portion, grasslands (rangelands) land cover
Wetland and riparian restoration – forestry	Farm portion, forestry land cover, poor wetland and river condition
Wetland and riparian restoration – conservation agriculture	Farm portion, agriculture land cover, poor wetland and river condition

ONLINE DASHBOARD

The online SWSA Plan Dashboard is an interactive platform that brings this plan to life. Users can navigate an individual SWSA, identify priority interventions and opportunities, explore spatial information, and understand where action is most needed. The dashboard provides a practical tool for government, businesses, funders, landowners and implementing partners to identify opportunities for collaboration and support coordinated action to secure these nationally important water source areas. **Click here to access and explore the dashboard.**

TABLE MOUNTAIN

SWSA size	Area to be prioritised
47 241 ha	24 069 ha

Protected areas	Natural land cover	Degraded land
44,8%	47,5%	52,5%

TOP 50% PRIORITY QUINARIES: TABLE MOUNTAIN SWSA

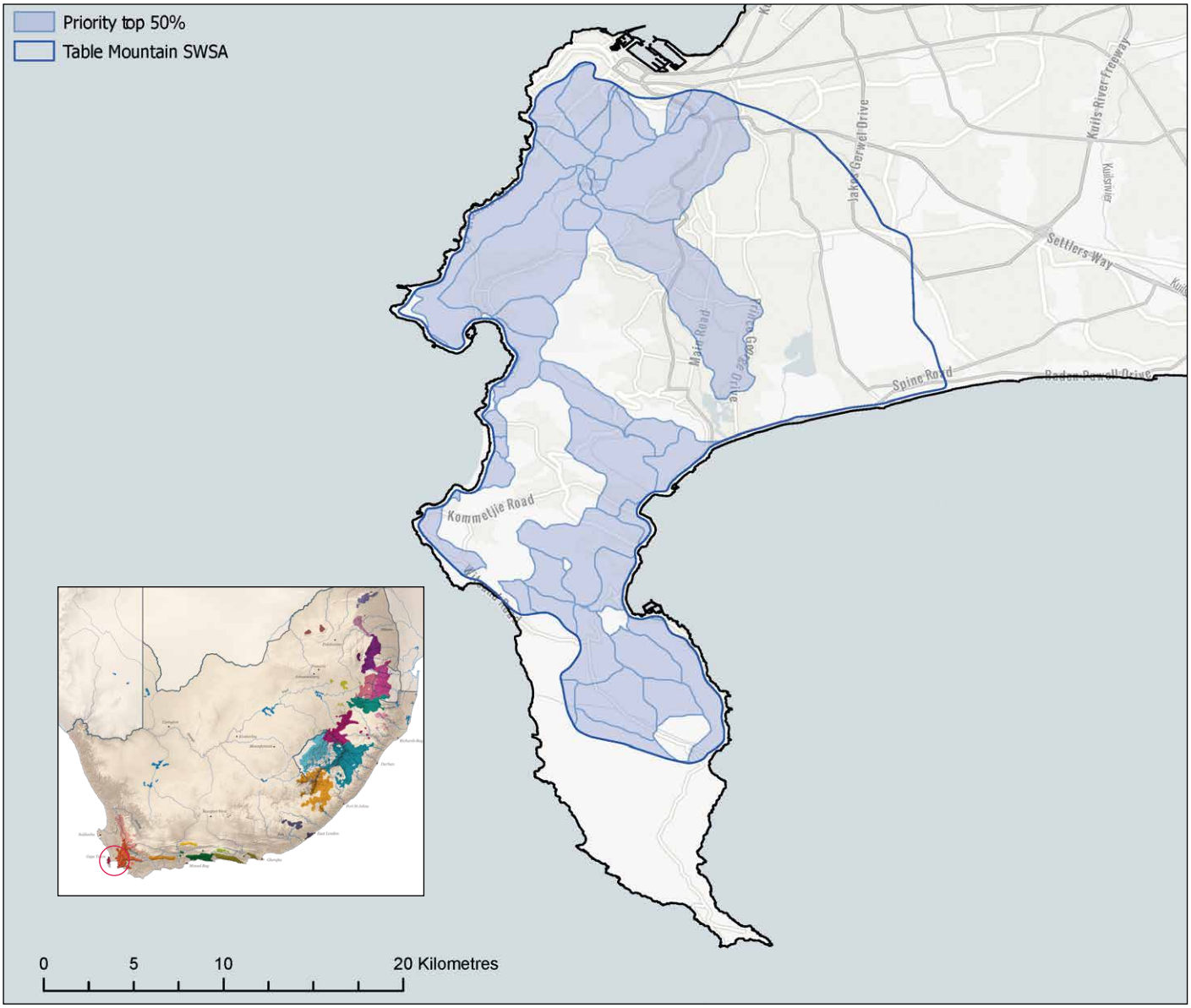


Figure 5: The top 50% prioritised quinaries (blue) in Table Mountain SWSA

DOMINANT LAND USE

The Table Mountain SWSA is located in the Western Cape, centred on the Table Mountain range and Cape Peninsula. It extends from Table Mountain in the north through the mountainous spine of the peninsula to Cape Point in the south, encompassing a network of mountain catchments that supply water to the greater Cape Town metropolitan area. The SWSA is characterised by mountain Fynbos, wetlands, indigenous forests and protected areas contained largely within Table Mountain National Park, forming part of the Cape Floristic Region. These mountain catchments play a critical role in supplying surface water to the Western Cape Water Supply System, supporting millions of residents, agriculture, tourism and industry. Figure 5 illustrates the spatial extent of the priority top 50% quinaries within the Table Mountain SWSA.

This SWSA is centred on the Table Mountain range, the Cape Peninsula and adjacent mountain systems. It is characterised by a central protected area (i.e. Table Mountain National Park), with high biodiversity value, water provisioning services to the city and high levels of recreational activity, surrounded by intense urban areas of the City of Cape Town.

KEY PARTNERSHIPS

Water management area	• Breede-Olifants
Key water associations	• N/A
Key landholdings	• City of Cape Town
Other key partnerships	• CapeNature • City of Cape Town • SANParks • Table Mountain Water Source Partnership • The Table Mountain Fund

KEY INTERVENTIONS: TABLE MOUNTAIN SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
RESTORE	PROTECT
LANDSCAPE-SCALE RESTORATION • Develop and implement integrated fire management and IAP clearing strategy for the SWSA – integrating SANParks, Working on Fire and the City of Cape Town • Establish dedicated IAP clearing teams, coordinated across the SWSA.	**NEW PRIVATE STEWARDSHIP** • Explore opportunities to expand Table Mountain National Park, in partnership with SANParks and the City of Cape Town, within the recognised and approved SANParks expansion zone.

RESTORE: TABLE MOUNTAIN SWSA

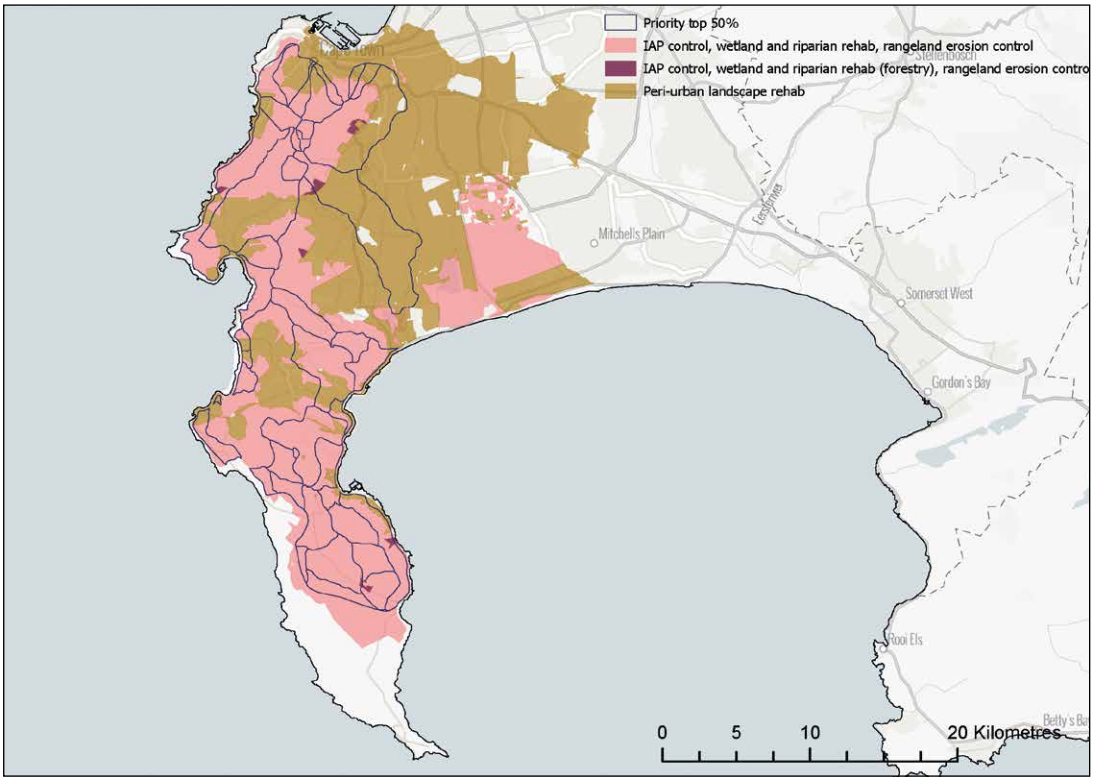


Figure 6: Spatial opportunities for RESTORE interventions in the Table Mountain SWSA

PROTECT: TABLE MOUNTAIN SWSA

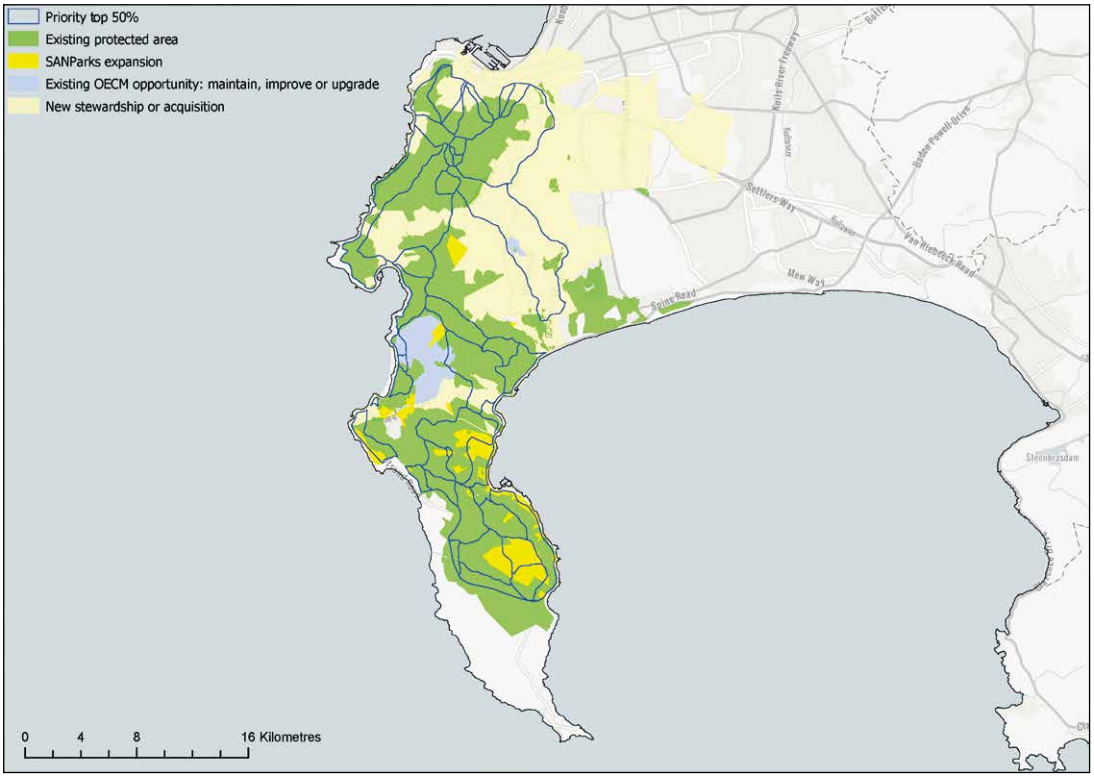


Figure 7: Spatial opportunities for PROTECT interventions in the Table Mountain SWSA

Ensuring SWSA protection and management are included in the Table Mountain National Park management plan presents a further opportunity to secure this SWSA.

BOLAND

SWSA size	Area to be prioritised
608 040 ha	306 656 ha

Protected areas	Natural land cover	Degraded land
44,7%	62,2%	37,8%

TOP 50% PRIORITY QUINARIES: BOLAND SWSA

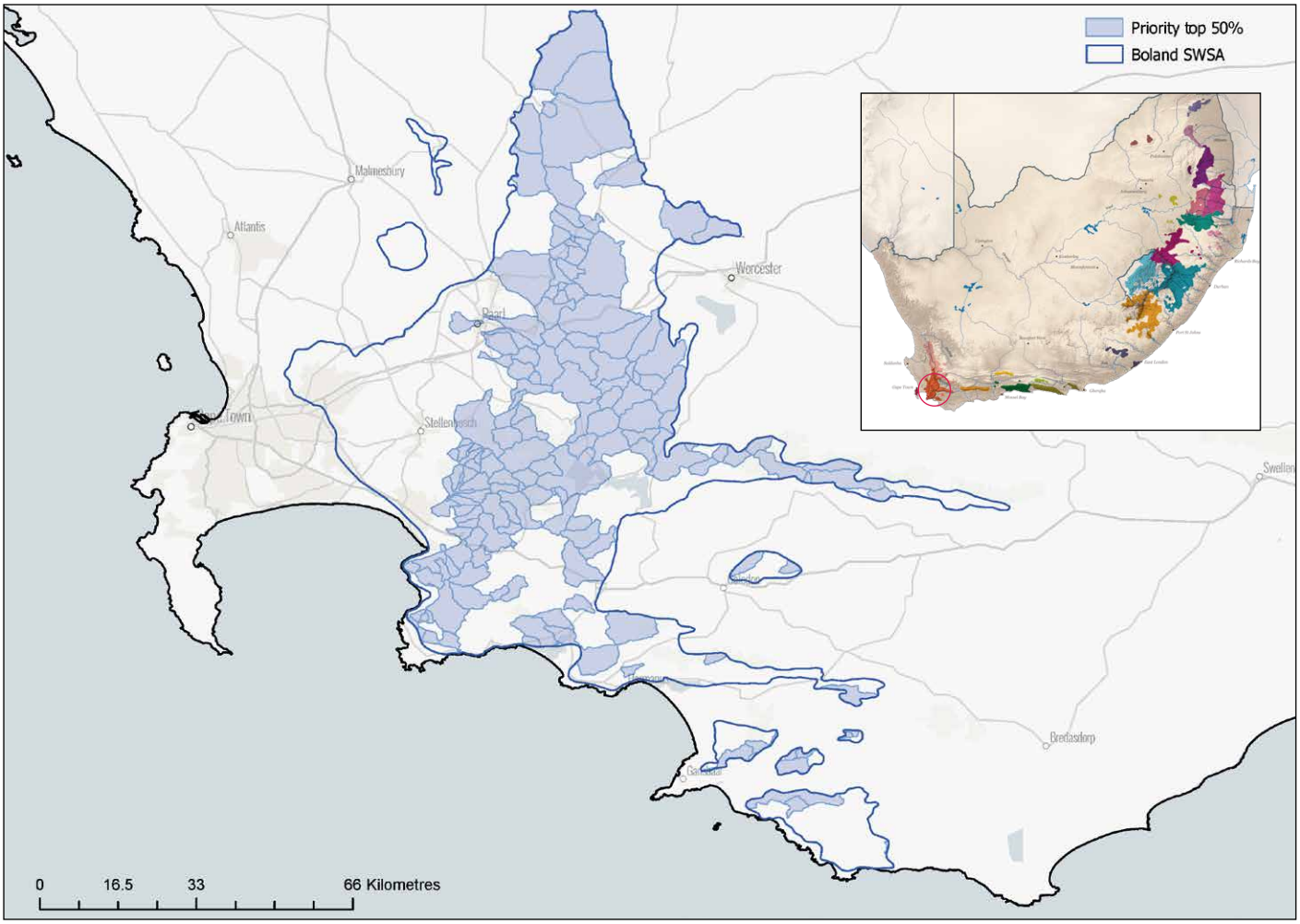


Figure 8: The top 50% prioritised quinaries (blue) in the Boland SWSA

DOMINANT LAND USE

The Boland SWSA is located in the Western Cape, situated in the mountainous heart of the province immediately northeast and east of Cape Town, encompassing the major mountain ranges and catchments of the Cape winelands region. The SWSA extends across the Boland Mountains, Hottentots-Holland, Jonkershoek, Limietberg, Wemmershoek and surrounding mountain catchments, forming the headwaters of several of the province's most important river systems, including the Berg, Breede and Eerste rivers. These catchments provide water to the City of Cape Town, surrounding municipalities, irrigated agriculture, industry and globally significant wine and fruit production areas. Characterised by mountain Fynbos, wetlands, indigenous forests, agricultural valleys and an extensive network of protected areas, the landscape forms part of the Cape Floristic Region, one of the world's biodiversity hotspots. The SWSA is also recognised as a priority landscape for collaborative catchment management through the Boland Groot Winterhoek SWSA Collective. Figure 8 illustrates the spatial extent of the priority top 50% quinaries within the Boland SWSA.

This SWSA encompasses the high-rainfall mountains surrounding the Boland region, critical to urban water supply for Cape Town and surrounding towns. The mountainous areas are intact and natural while the valleys are intensively cultivated (fruit and vineyards) with high water demands.

KEY PARTNERSHIPS

Water management area	• Breede-Olifants
Key water associations	• Berg River Water User Association (WUA) • Groenland WUA • Upper Breede River WUA • Wolseley WUA
Key landholdings	• CapeNature • City of Cape Town • Vinpro
Other key partnerships	• Boland Groot Winterhoek SWSA Collective • Breede-Olifants Catchment Management Agency • CapeNature • City of Cape Town • Conservation Champions • Greater Cape Water Fund • Kogelberg Biosphere Reserve • The Nature Conservancy • Water infrastructure authorities associated with the Western Cape Water Supply System • WWF-Haleon partnership • WWF-Lidl partnership • WWF-Waitrose Foundation partnership • WWF-Woolworths partnership • WWF-WRAP partnership

KEY INTERVENTIONS: BOLAND SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
RESTORE	PROTECT
LANDSCAPE-SCALE RESTORATION • Focus on the following activities in the SWSA: o Area-wide planning o Integrated fire management and IAP clearing o Rehabilitation o Conservation agriculture.	**NEW PRIVATE, CORPORATE AND COMMUNAL STEWARDSHIP** • Expand protected area within landscape using biodiversity stewardship: o Expand collaboration between CapeNature and partners o Complete the exit process on government forestry lands and implement a strategy for these areas to ensure adequate management (e.g. of IAPs).

RESTORE: BOLAND SWSA

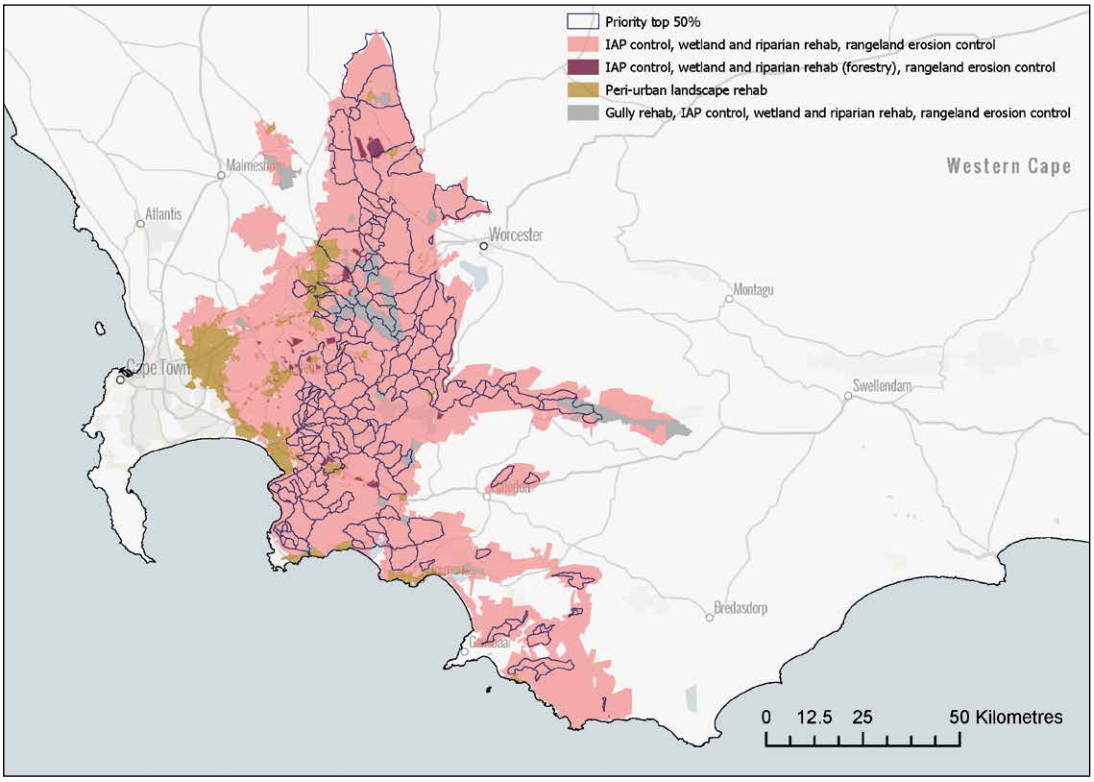


Figure 9: Spatial opportunities for RESTORE interventions in the Boland SWSA

PROTECT: BOLAND SWSA

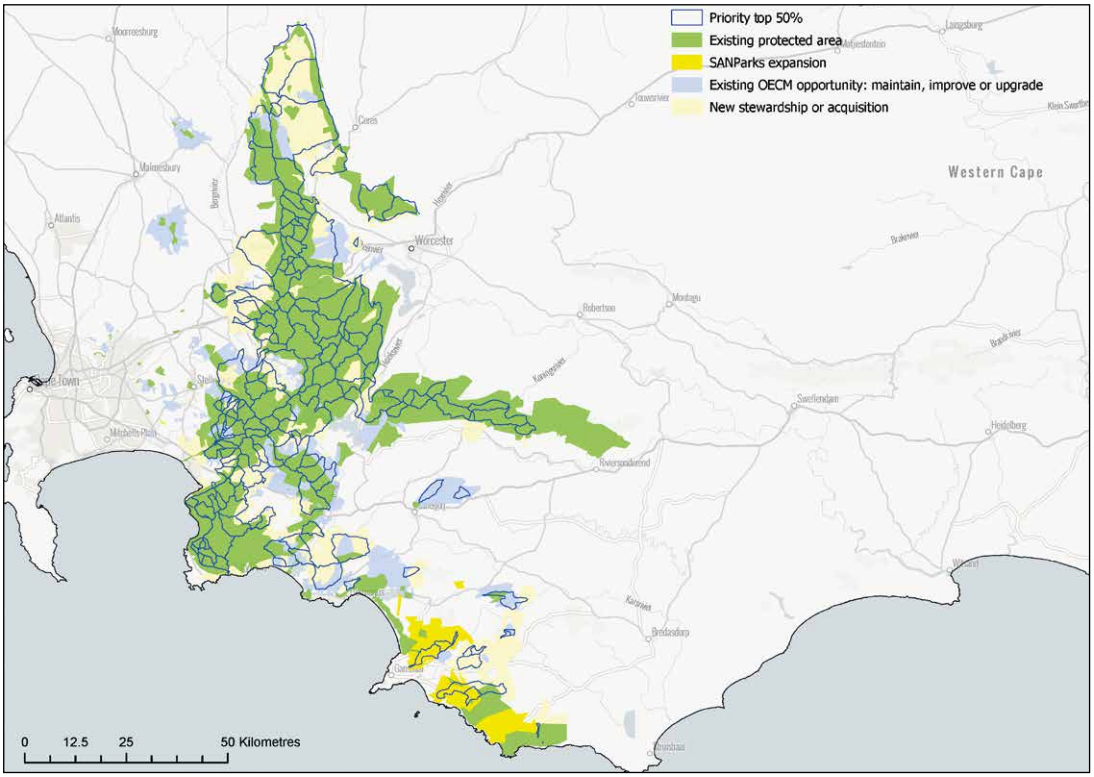


Figure 10: Spatial opportunities for PROTECT interventions in the Boland SWSA

The Boland SWSA is well suited to a restoration economy based on a biomass programme (using biomass for secondary products like biochar) and would benefit from enhanced support.

GROOT WINTERHOEK

SWSA size	Area to be prioritised
518 277 ha	261 517 ha

Protected areas	Natural land cover	Degraded land
62,9%	84%	16%

TOP 50% PRIORITY QUINARIES: GROOT WINTERHOEK SWSA

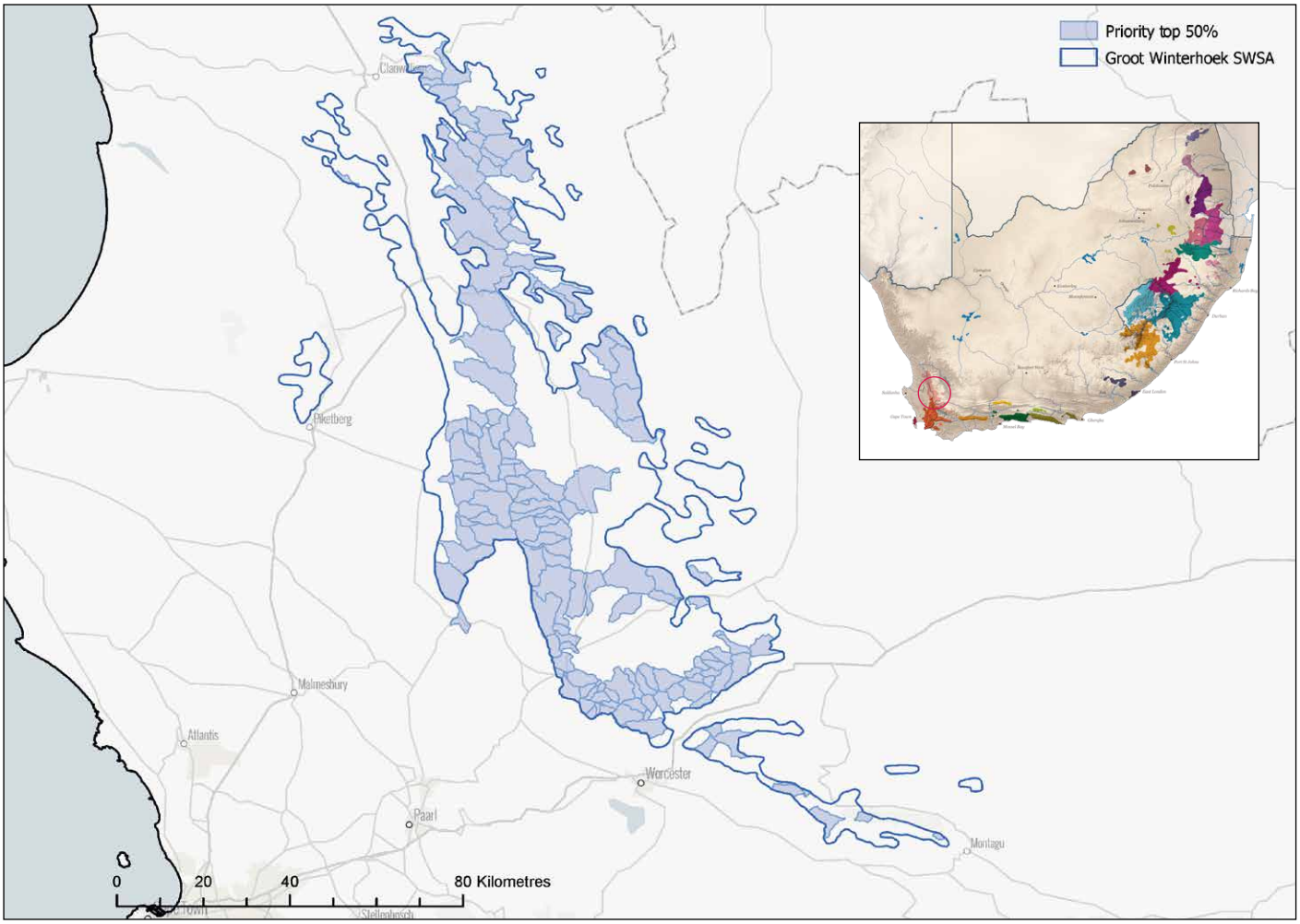


Figure 11: The top 50% prioritised quinaries (blue) in the Groot Winterhoek SWSA

DOMINANT LAND USE

The Groot Winterhoek SWSA is situated in the north-western Western Cape, extending across the Groot Winterhoek and Cederberg mountain systems north of Cape Town. The SWSA comprises high-rainfall mountain catchments that generate run-off for the Olifants, Doring and Berg river systems, making it one of the province's most important sources of water for agriculture, towns, industry and downstream ecosystems. Characterised by extensive mountain Fynbos, rugged wilderness areas, wetlands, indigenous forests and protected areas, the landscape forms part of the Cape Floristic Region, supporting exceptional biodiversity and high levels of endemism. Figure 11 illustrates the spatial extent of the priority top 50% quinaries within the Groot Winterhoek SWSA.

This SWSA is dominated by rugged, high-altitude mountainous areas of the Groot Winterhoek and Cederberg mountain system, consisting of large protected areas or mountain catchment areas. The SWSA generally has low levels of intensive transformation and is dominated by intact natural habitats, interspersed with areas of intensive agriculture (fruit and vineyards) in the low-lying areas along drainage lines.

KEY PARTNERSHIPS

Water management area	• Breede-Olifants
Key water associations	• Citrusdal Water Users Association
Key landholdings	• Kouebokkeveld landowners • Major fruit-growing irrigation groups in the Ceres, Tulbagh, Citrusdal and Olifants valley regions • Tributaries of the Olifants and Doring rivers – properties being purchased in headwaters
Other key partnerships	• Boland Groot Winterhoek SWSA Collective • Breede-Olifants Catchment Management Agency • CapeNature • City of Cape Town • The Nature Conservancy • WWF-Lidl partnership • WWF-Old Mutual Investments partnership • WWF-WRAP partnership • WWF-Woolworths partnership

KEY INTERVENTIONS: GROOT WINTERHOEK SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
RESTORE	MANAGE
LANDSCAPE-SCALE RESTORATION • Focus on the following activities in the SWSA: o Area-wide planning o Integrated fire management and IAP clearing o Rehabilitation o Conservation agriculture (best practice management).	**CONSERVATION AGRICULTURAL EXTENSION – COMMERCIAL** • Ensure compliance with terms of water use licensing: o Assess all water use licences o Support legitimate water usage o Encourage compliance for over-utilisation or -abstraction o Engage on section 24G interventions of the National Environmental Management Act 107 of 1998 for illegal ploughing. Follow a similar protocol as determined in the Global Environment Facility (GEF)-5 work.

RESTORE: GROOT WINTERHOEK SWSA

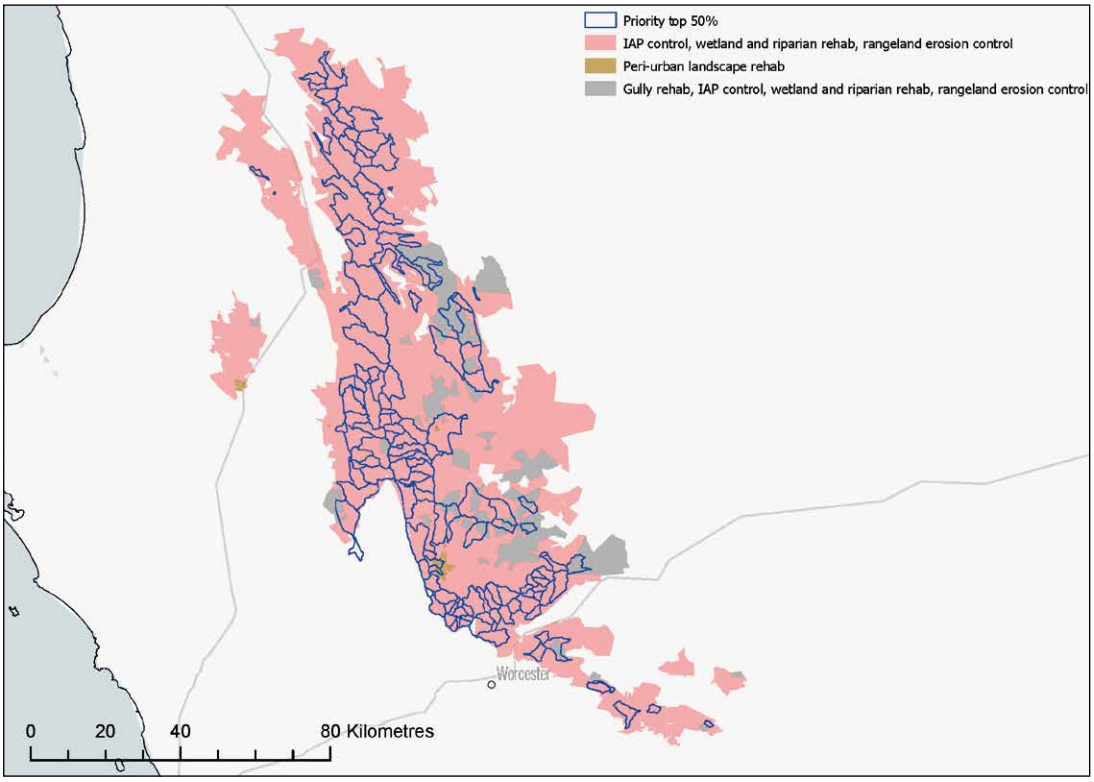


Figure 12: Spatial opportunities for RESTORE interventions in the Groot Winterhoek SWSA

MANAGE: GROOT WINTERHOEK SWSA

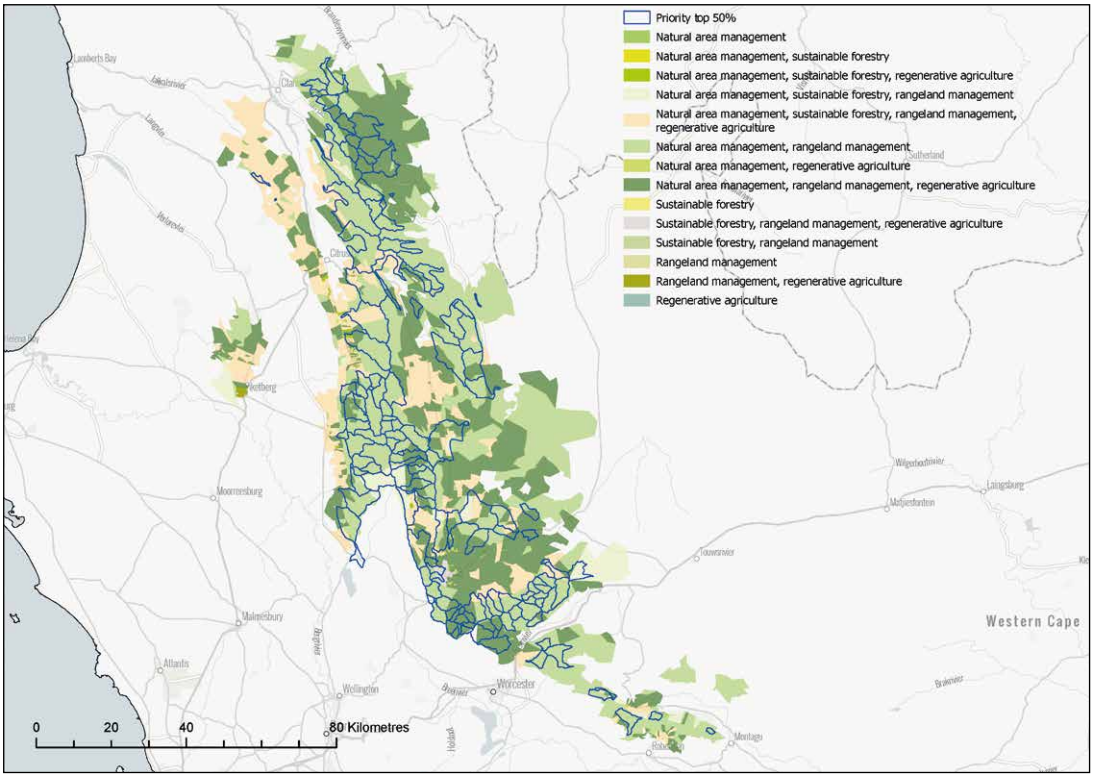


Figure 13: Spatial opportunities for MANAGE interventions in the Groot Winterhoek SWSA

Critical management within this SWSA is more about good catchment management (land use practices, adhering to water use licences and abstraction quotas) than about invasive alien plants.

LANGEBERG

SWSA size	Area to be prioritised
171 515 ha	88 771 ha

Protected areas	Natural land cover	Degraded land
49,1%	72,5%	17,5%

TOP 50% PRIORITY QUINARIES: LANGEBERG SWSA

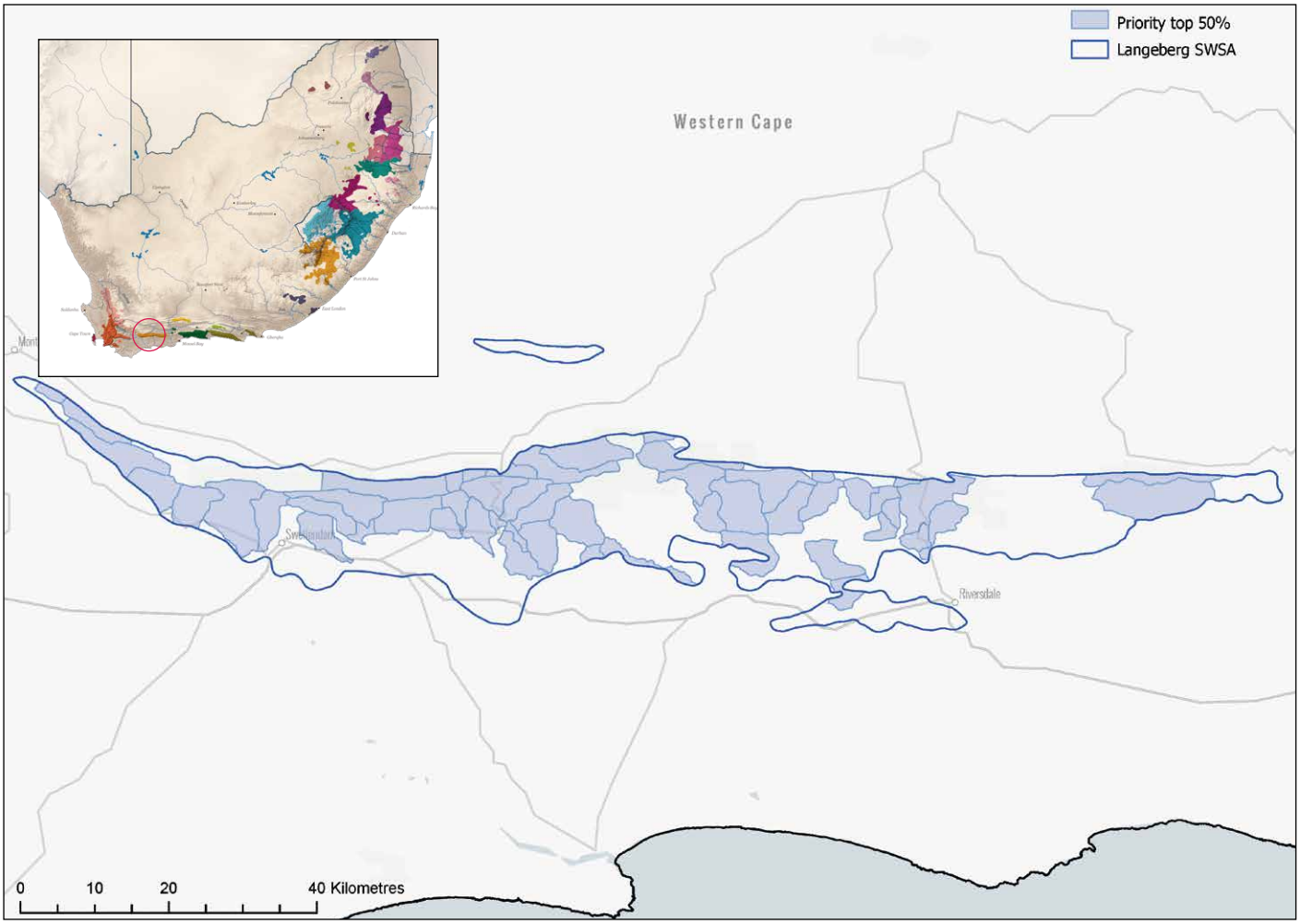


Figure 14: The top 50% prioritised quinaries (blue) in the Langeberg SWSA

DOMINANT LAND USE

The Langeberg SWSA is located along the Langeberg mountain range in the Western Cape, extending from Montagu in the west through Barrydale, Swellendam and Riversdale in the east. The SWSA forms the headwaters of several important river systems that supply water to downstream towns, irrigated agriculture and natural ecosystems across the Overberg and Little Karoo regions. The landscape is characterised by mountain Fynbos, wetlands, indigenous forests, agricultural valley, and protected areas, forming part of the globally significant Cape Floristic Region. Figure 14 illustrates the spatial extent of the priority top 50% quinaries within the Langeberg SWSA.

This SWSA extends along the Langeberg mountain range from the vicinity of Montagu through Robertson, Swellendam, Heidelberg and toward the Gouritz catchment. The Langeberg SWSA remains relatively intact in many upper mountain areas, with substantial protected areas, but faces growing pressures from IAPs (particularly pines, wattles and hakea) and agricultural expansion in the foothills.

KEY PARTNERSHIPS

Water management area	• Breede-Olifants
Key water associations	• N/A
Key landholdings	• MTO Forestry
Other key partnerships	• CapeNature • Gouritz Cluster Biosphere Reserve • Grootvadersbosch Conservancy • SANParks

KEY INTERVENTIONS: LANGEBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
RESTORE	**PROTECT**
LANDSCAPE-SCALE RESTORATION • Develop a dedicated and funded IAP clearing programme, with the necessary capacity and financial resources • Establish an area-wide planning of the SWSA, integrating the Department of Agriculture LandCare IAP programmes with co-funding from landowners and coordinating partners, including municipalities (funding for Expanded Public Works Programme teams).	**NEW PRIVATE AND COMMUNAL STEWARDSHIP** • Expand protected area within landscape using biodiversity stewardship: o Draw on collaboration between CapeNature and partners.

RESTORE: LANGEBERG SWSA

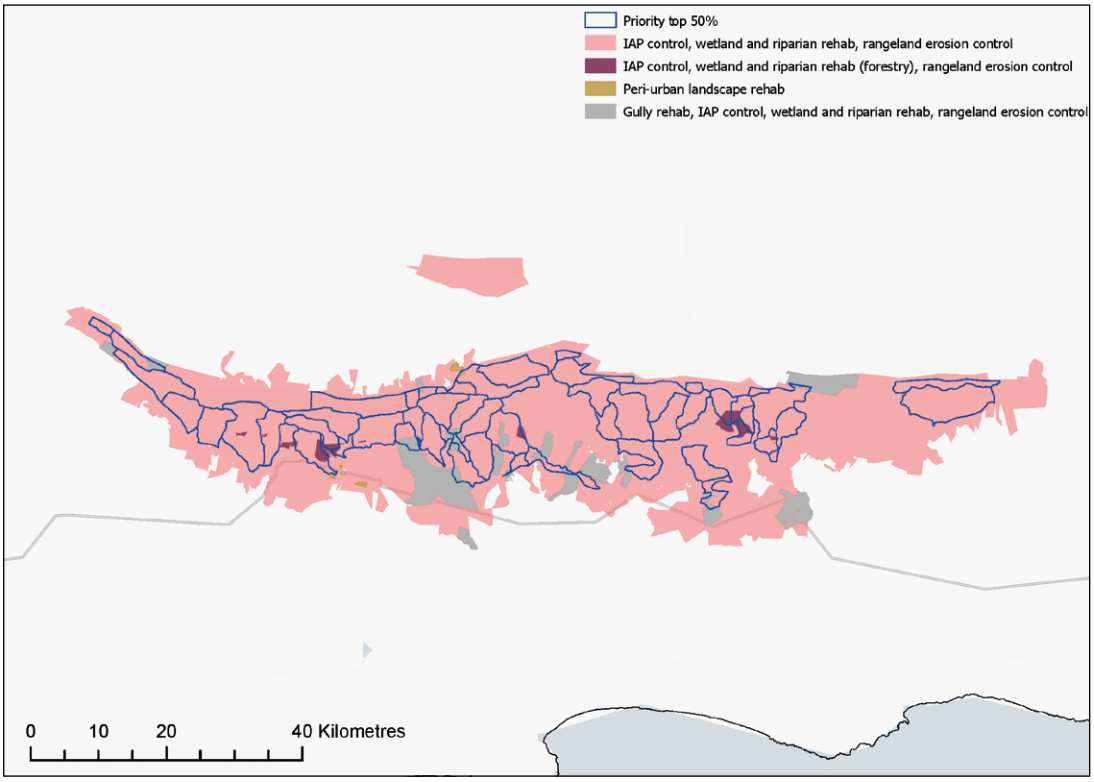


Figure 15: Spatial opportunities for RESTORE interventions in the Langeberg SWSA

PROTECT: LANGEBERG SWSA

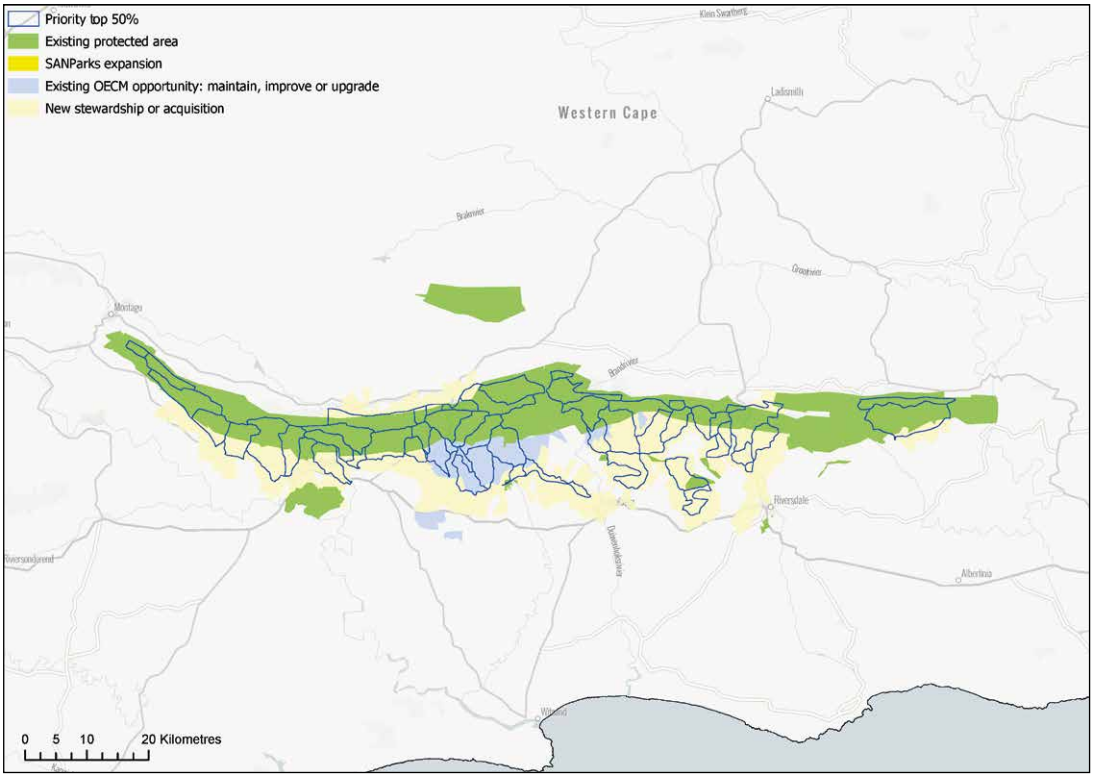


Figure 16: Spatial opportunities for PROTECT interventions in the Langeberg SWSA

The Langeberg SWSA is suited to a restoration economy and the development of a biomass programme (using biomass for into secondary products like biochar) should be explored.

SWARTBERG

SWSA size	Area to be prioritised
77 984 ha	39 325 ha

Protected areas	Natural land cover	Degraded land
76,6%	97,2%	2,8%

TOP 50% PRIORITY QUINARIES: SWARTBERG SWSA

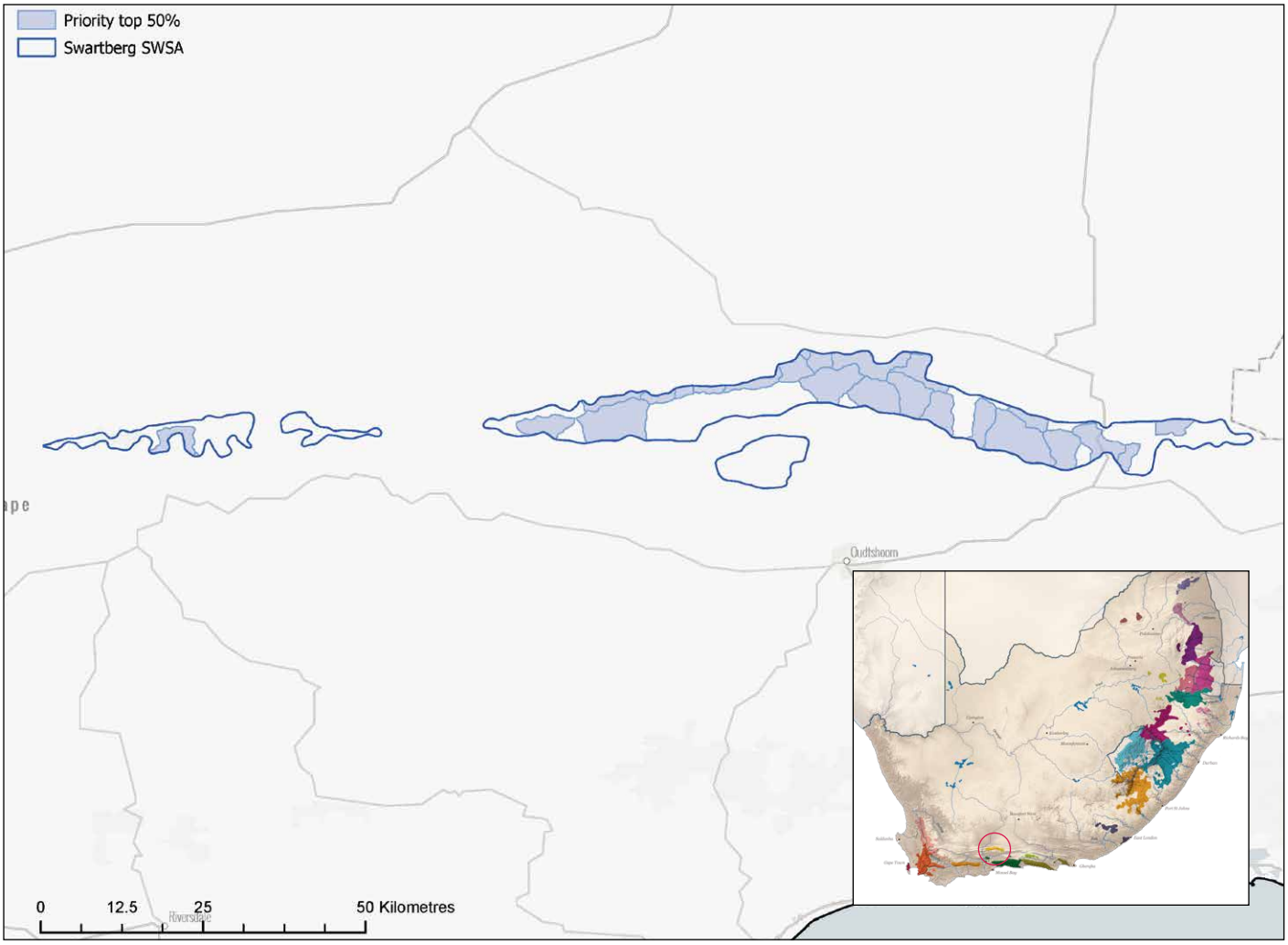


Figure 17: The top 50% prioritised quinaries (blue) in the Swartberg SWSA

DOMINANT LAND USE

The Swartberg SWSA is located along the Groot Swartberg mountain range in the Western Cape province, north of Oudtshoorn, extending across the Little Karoo. The SWSA forms the headwaters of several important river systems, supplying water to downstream communities, irrigated agriculture and towns across the semi-arid Little Karoo. The landscape is characterised by rugged mountain catchments, Fynbos, Succulent Karoo vegetation, indigenous forests in sheltered ravines and protected areas that form part of the Cape Floral Region Protected Areas World Heritage Site (WHS). These intact mountain ecosystems are critical for capturing and regulating water in an otherwise water-scarce region, while supporting exceptional levels of biodiversity and endemism. Figure 17 illustrates the spatial extent of the priority top 50% quinaries within the Swartberg SWSA.

This SWSA is located along the Swartberg Mountains that feed important river systems such as the Gouritz, Gamka, Olifants and Groot rivers. These rivers provide essential water for downstream agriculture, rural communities and regional economies. The SWSA is dominated by natural intact Fynbos and Succulent Karoo habitats, mostly within a mountain catchment area or within the Cape Floral Areas Protected Area WHS, hence its dominant land use being conservation and water protection.

KEY PARTNERSHIPS

Water management area	• Breede-Olifants
Key water associations	• Kweekvallei Water User Association
Key landholdings	• CapeNature
Other key partnerships	• Gouritz Cluster Biosphere Reserve

KEY INTERVENTIONS: SWARTBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**RESTORE**
NEW PRIVATE AND COMMUNAL STEWARDSHIP • Expand protected area within landscape using biodiversity stewardship, based on collaboration between CapeNature and partners.	**LANDSCAPE-SCALE RESTORATION** • Develop a dedicated, funded IAP clearing programme with adequate capacity and financial resources. **IAP CONTROL – PRIVATE** • Clear water infrastructure offtake weirs of Spanish reed (*Arundo donax*), which is currently choking the weirs. **MANAGEMENT OF EXISTING PROTECTED AREAS** • Rationalise the protected areas between SANParks and CapeNature • Improve protection of the Ladismith Mountain Catchment Area, including by establishing a partnership between CapeNature and private landowners.

PROTECT: SWARTBERG SWSA

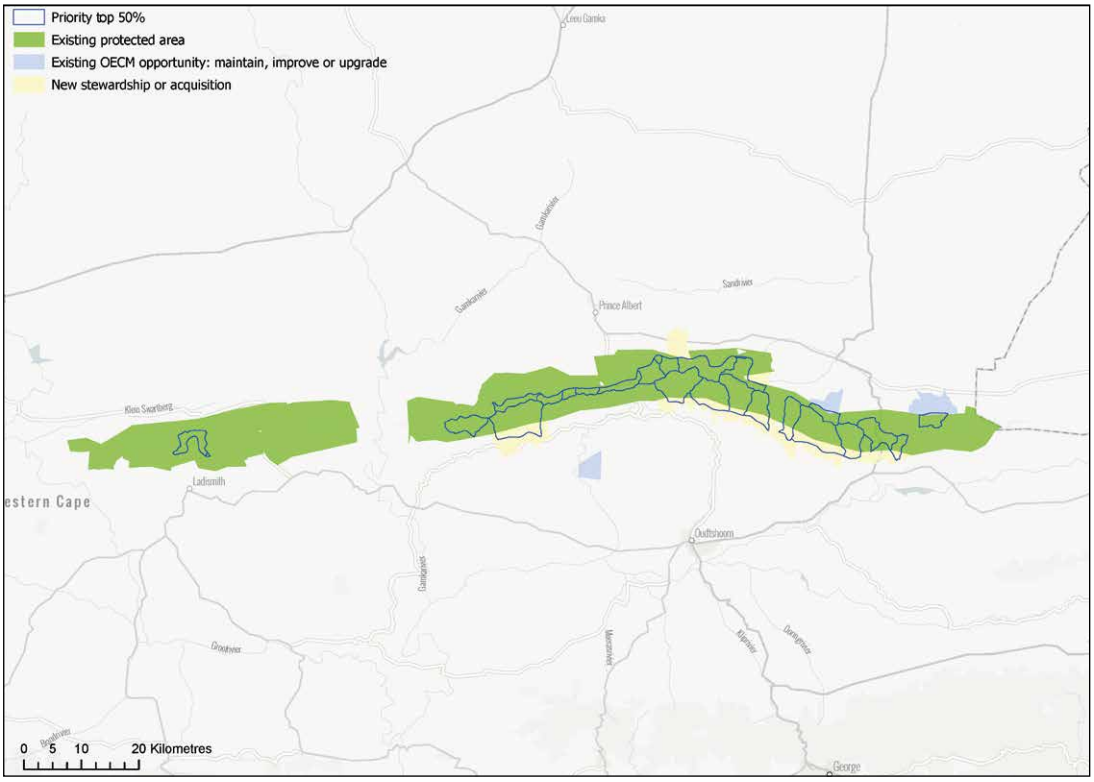


Figure 18: Spatial opportunities for PROTECT interventions in the Swartberg SWSA

RESTORE: SWARTBERG SWSA

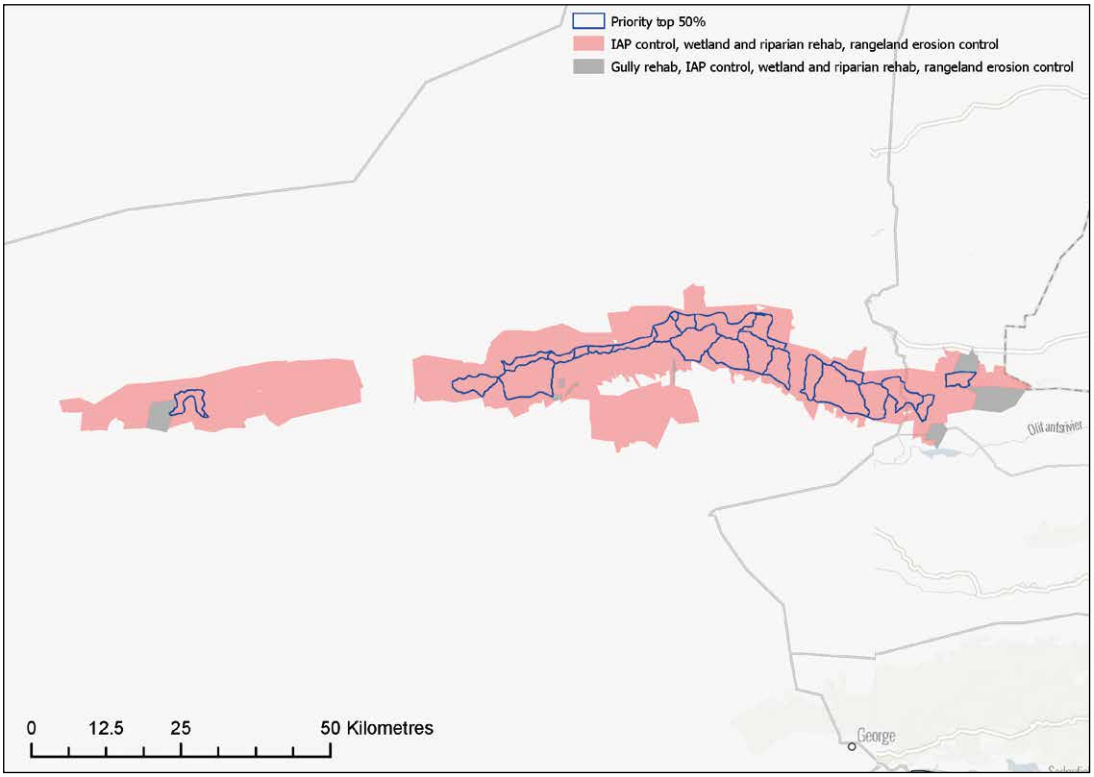


Figure 19: Spatial opportunities for RESTORE interventions in the Swartberg SWSA

OUTENIQUA

SWSA size	Area to be prioritised
304 233 ha	153 415 ha

Protected areas	Natural land cover	Degraded land
47,4%	64,4%	35,6%

TOP 50% PRIORITY QUINARIES: OUTENIQUA SWSA

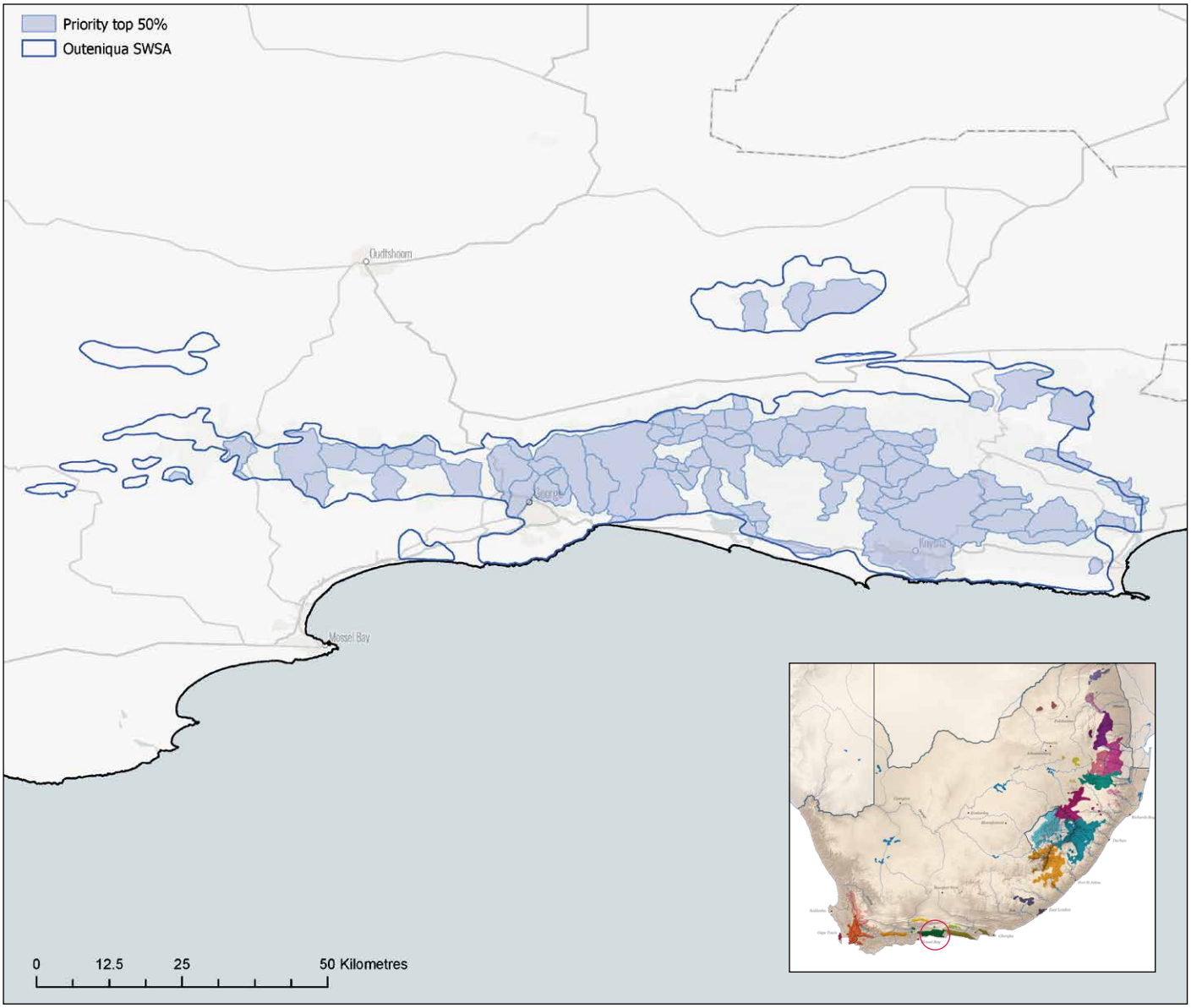


Figure 20: The top 50% prioritised quinaries (blue) in the Outeniqua SWSA

DOMINANT LAND USE

The Outeniqua SWSA is located in the Western Cape province, extending from Plettenberg Bay in the east to George in the west. It is bounded by the Outeniqua Mountains to the north and extends westwards into the Attakwas Mountains, forming a series of rugged mountain catchments that supply water to numerous coastal river systems. The SWSA provides water to the rapidly growing Garden Route region, supporting municipalities, agriculture, forestry, tourism and industry. Characterised by mountain Fynbos, indigenous Afrotemperate forests, wetlands, commercial forestry and protected areas, the landscape is internationally recognised for its exceptional biodiversity and ecological importance as part of the Cape Floristic Region. Figure 20 illustrates the spatial extent of the priority top 50% quinaries within the Outeniqua SWSA.

This SWSA is located along the Outeniqua mountain range, with significant areas of natural intact ecosystems, secure as part of the Garden Route Biosphere Reserve. It further extends from this mountain range to the coast (between Plettenberg Bay in the east and George in the west) and consists of a mixed land use that includes rural residential areas.

KEY PARTNERSHIPS

Water management area	• Breede-Olifants
Key water associations	• Stompdrift-Kammanassie Water User Association (WUA) • Vanwyksdorp WUA
Key landholdings	• Lancewood Dairy Farms (near Sedgefield) • South African Breweries • PG Bison • Cape Pine
Other key partnerships	• Bitou Municipality • CapeNature • Garden Route Biosphere Reserve • Gouritz Cluster Biosphere Reserve • SANParks • Southern Cape Fire Protection Association • WWF-AB-InBev partnership

KEY INTERVENTIONS: OUTENIQUA SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**RESTORE**
NEW PRIVATE AND COMMUNAL STEWARDSHIP	**LANDSCAPE-SCALE RESTORATION**
• Expand protected area within landscape using biodiversity stewardship: o Draw on collaboration between SANParks, CapeNature and WWF o Support Eden to Addo Corridor Initiative (which includes the Bitou Wetland Corridor and Robberg Coastal Corridor) and Gouritz Cluster Biosphere Reserve Corridor project. There is also an opportunity to establish a corridor between the Bitou corridors and the Gouritz corridors.	• Develop an integrated IAP clearing and fire management plan for the SWSA • Develop a high-altitude IAP clearing programme, with adequate capacity and financial resources • Establish a dedicated hakea clearing programme for Kammanassie Nature Reserve • Roll out municipal IAP clearing plans and establish an investment framework with municipality. Bring people together under a collective model that includes NGO support and municipal partners coordinating implementation.

PROTECT: OUTENIQUA SWSA

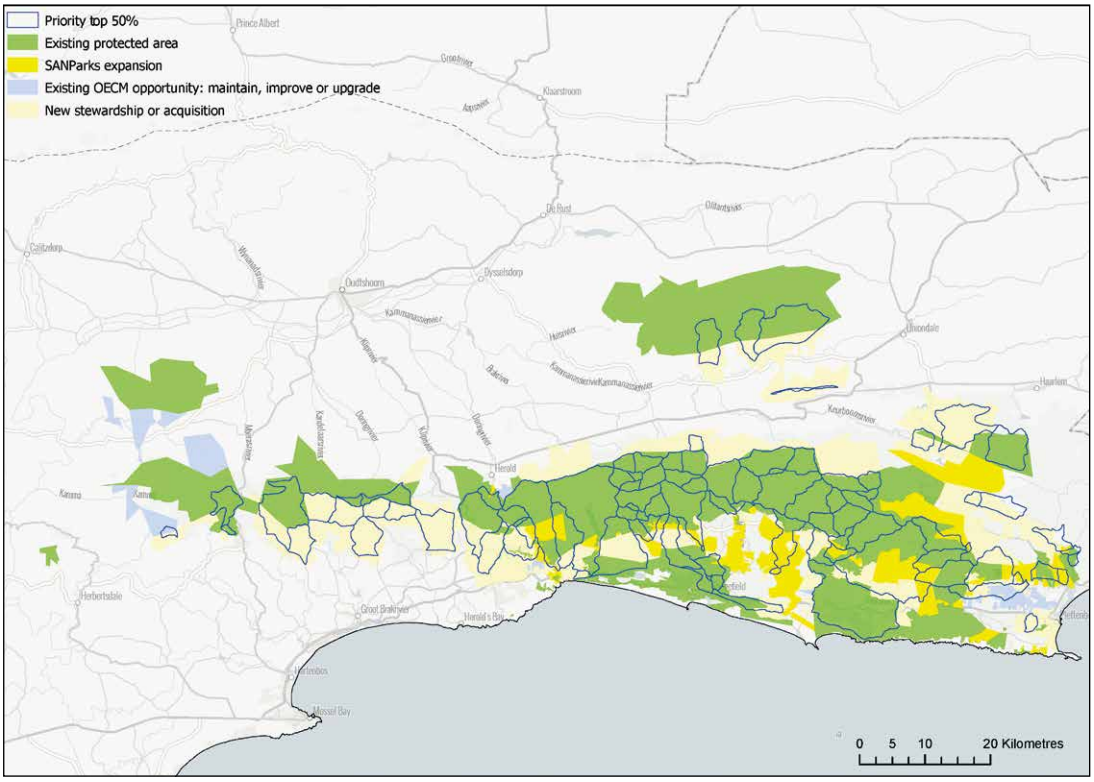


Figure 21: Spatial opportunities for PROTECT interventions in the Outeniqua SWSA

RESTORE: OUTENIQUA SWSA

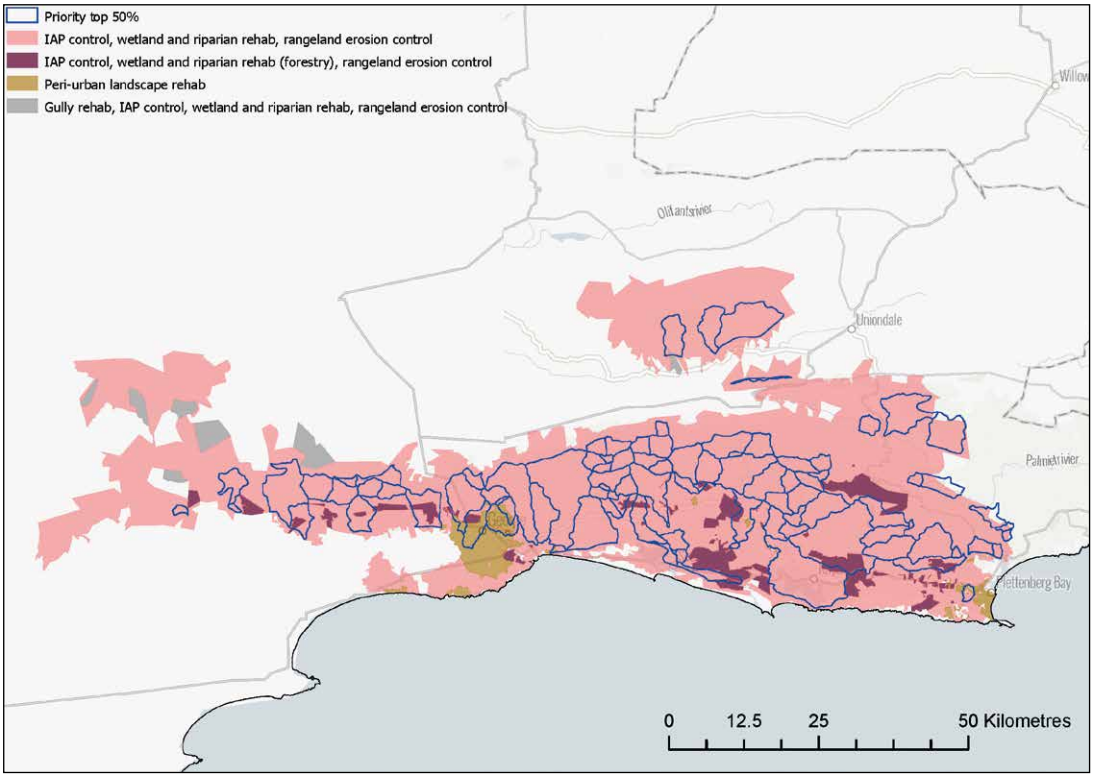


Figure 22: Spatial opportunities for RESTORE interventions in the Outeniqua SWSA

KOUGA

SWSA size	Area to be prioritised
63 099 ha	31 903 ha

Protected areas	Natural land cover	Degraded land
72,3%	99,8%	0,2%

TOP 50% PRIORITY QUINARIES: KOUGA SWSA

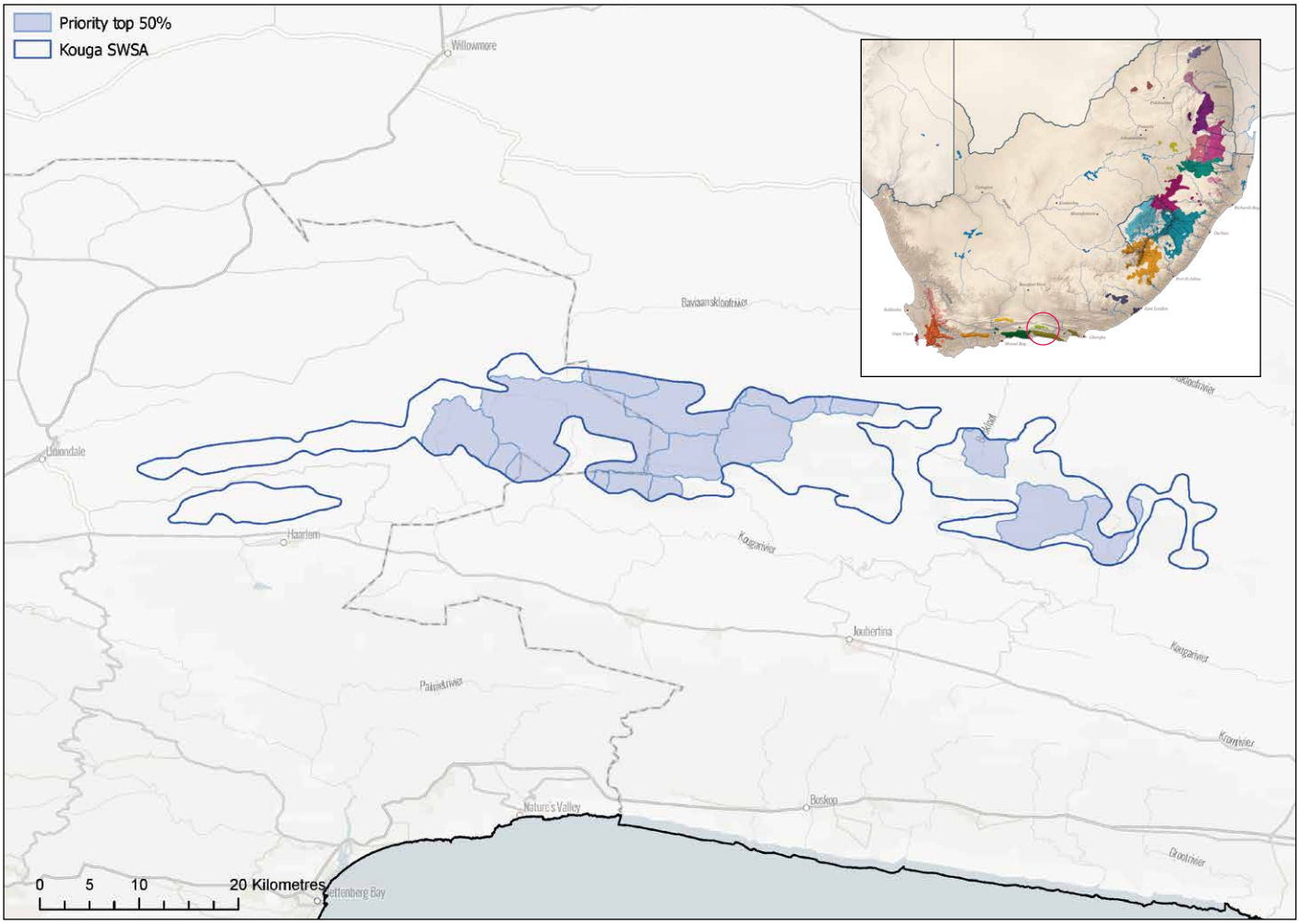


Figure 23: The top 50% prioritised quinaries (blue) in the Kouga SWSA

DOMINANT LAND USE

The Kouga SWSA is located inland of the Tsitsikamma Mountains in the Eastern Cape, extending into the Western Cape and centred on the Kouga Mountains within the Baviaanskloof Wilderness Area. This SWSA forms the headwaters of the Kouga and Kromme river systems, which provide water to downstream municipalities, agriculture and industry, including the Nelson Mandela Bay metropolitan area through the Kouga Dam. The landscape is characterised by rugged mountain catchments, Fynbos, indigenous forests, wetlands and protected areas of exceptional biodiversity, much of which falls within the Baviaanskloof United Nations Educational, Scientific and Cultural Organization (UNESCO) WHS. Figure 23 illustrates the spatial extent of the priority top 50% quinaries within the Kouga SWSA.

The entire SWSA is located within the Kouga Mountains, consisting extensively of a range of different protected areas, although the majority being the Cape Floral Region Protected Areas WHS under the management of the Eastern Cape Parks and Tourism Agency (ECPTA).

KEY PARTNERSHIPS

Water management area	• Mzimvubu-Tsitsikamma
Key water associations	• Gamtoos Water
Key landholdings	• Eastern Cape Parks and Tourism Agency (ECPTA)
Other key partnerships	• Garden Route Biosphere Reserve • Living Lands • WWF-PepsiCo partnership

KEY INTERVENTIONS: KOUGA SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**RESTORE**
MANAGEMENT OF EXISTING PROTECTED AREAS	**LANDSCAPE-SCALE RESTORATION**
• Support the ECPTA improve management of the Baviaanskloof section of the WHS.	• Develop an integrated IAP clearing and fire management plan for the SWSA • Develop a high-altitude IAP clearing programme with adequate capacity and financial resources.

PROTECT: KOUGA SWSA

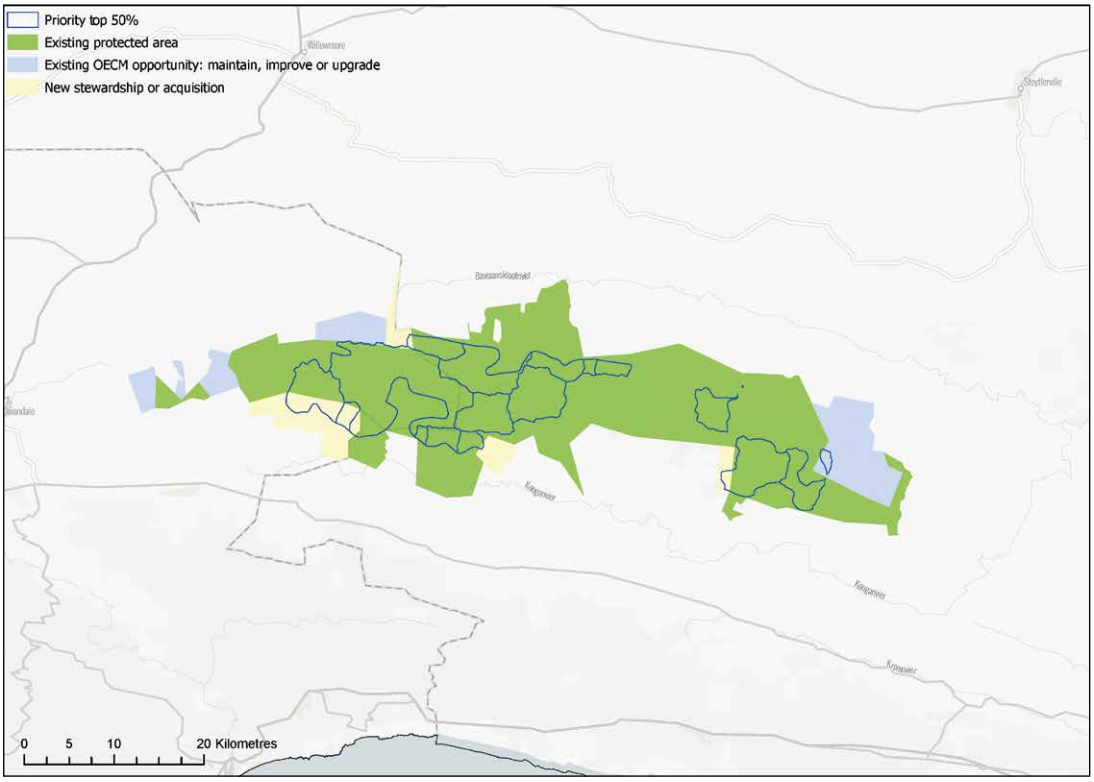


Figure 24: Spatial opportunities for PROTECT interventions in the Kouga SWSA

RESTORE: KOUGA SWSA

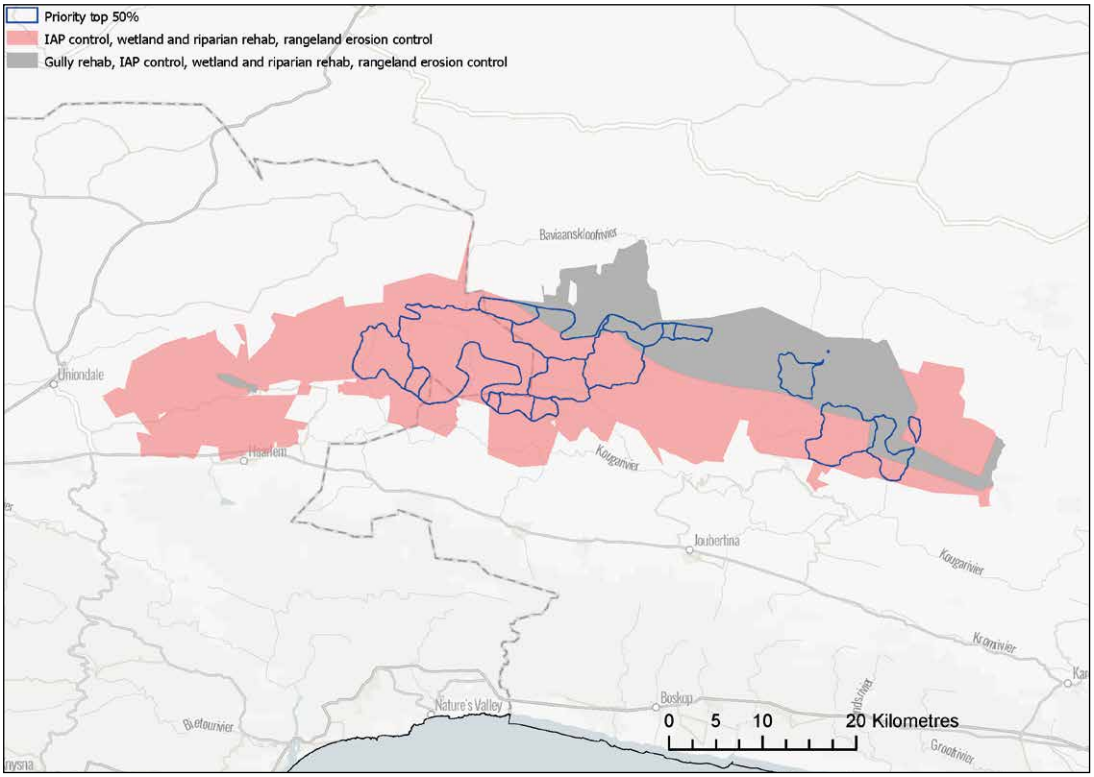


Figure 25: Spatial opportunities for RESTORE interventions in the Kouga SWSA

TSITSIKAMMA

SWSA size	Area to be prioritised
322 201 ha	162 314 ha

Protected areas	Natural land cover	Degraded land
35%	69,2%	30,8%

TOP 50% PRIORITY QUINARIES: TSITSIKAMMA SWSA

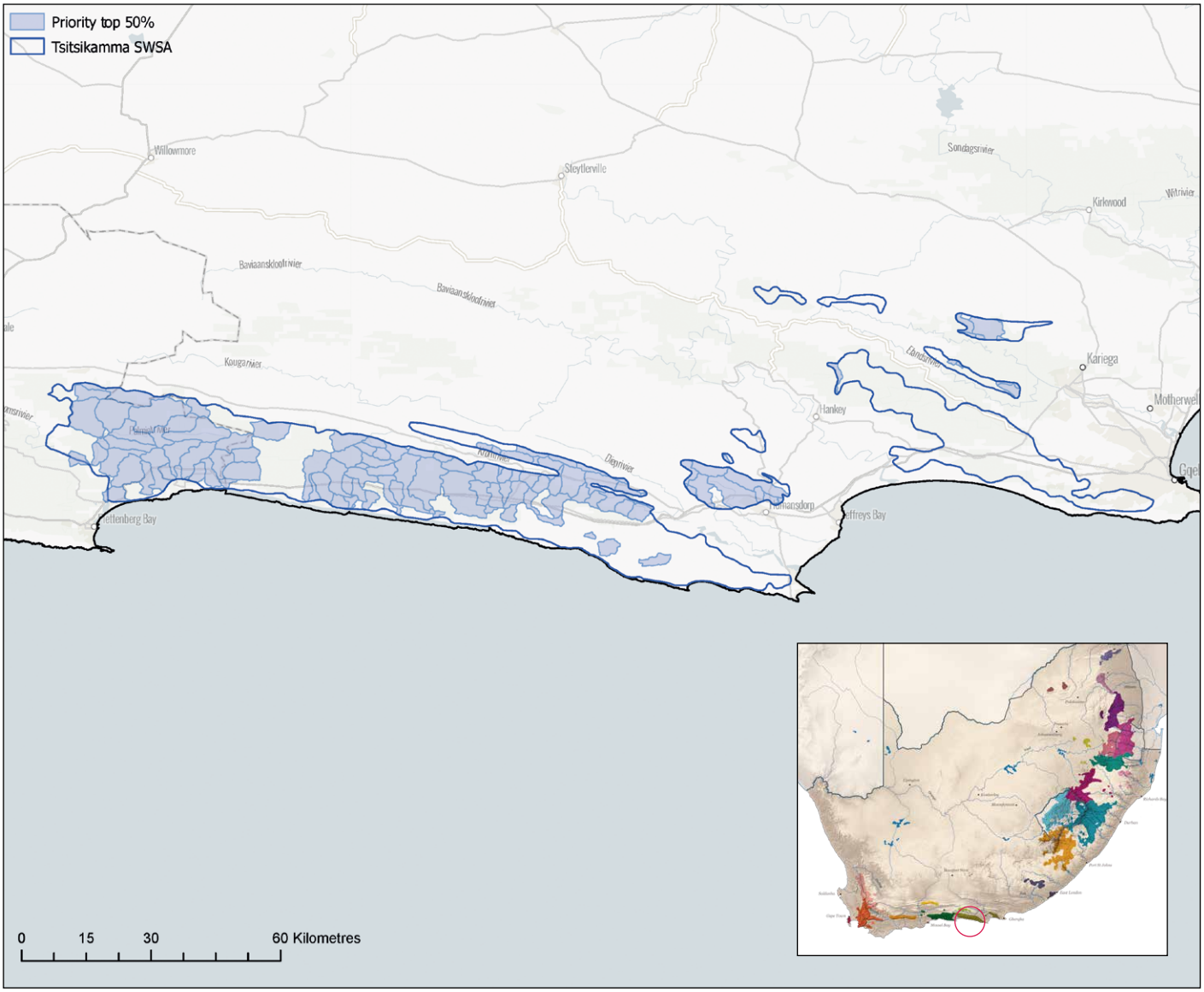


Figure 26: The top 50% prioritised quinaries (blue) in the Tsitsikamma SWSA

DOMINANT LAND USE

The Tsitsikamma SWSA is located along South Africa's southern coastline, extending between Gqeberha (Port Elizabeth) and Plettenberg Bay across the Eastern and Western Cape provinces. The SWSA comprises a mosaic of indigenous Afrotemperate forests, Fynbos, mountain catchments, wetlands, commercial forestry, agricultural landscapes and protected areas, forming the headwaters of several coastal river systems that supply water to downstream communities, agriculture, industry and estuarine ecosystems. The landscape is internationally recognised for its exceptional biodiversity and ecological integrity, with large portions falling within the Garden Route Biosphere Reserve and surrounding conservation areas. Figure 26 illustrates the spatial extent of the priority top 50% quinaries within the Tsitsikamma SWSA.

This SWSA essentially consists of three separate sections, with different characteristics:

- Tsitsikamma coastal section, from the Tsitsikamma Mountains to the coast, characterised by high rainfall that flows towards the coast.
- Langkloof section – a drier region – with flows into the Kouga and Kromme rivers, upstream of the Impofu and Churchill dams.
- The Gqeberha section, which is fragmented in nature and inland from Gqeberha towards the Groendal Wilderness Area.

Tsitsikamma is a highly fragmented SWSA. The eastern areas close to Gqeberha are dominated by transformed agriculture (pastures and crops) together with urban expansion, while the western regions are dominated by intensive dairy farms and state forestry. Moving up into the Tsitsikamma Mountains, the landscape is more natural and intact but highly infested with IAP trees.

KEY PARTNERSHIPS

Water management area	• Mzimvubu-Tsitsikamma
Key water associations	• Gamtoos Water User Association
Key landholdings	• Dairy farmers, forestry companies (MTO Forestry, Cold Stream Timber Company) and macadamia and avocado farmers
Other key partnerships	• Greater Addo Mega Living Landscape • Garden Route Biosphere Reserve • Greater Kromme Stewardship Initiative • Living Lands

KEY INTERVENTIONS: TSITSIKAMMA SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**RESTORE**
NEW PRIVATE AND COMMUNAL STEWARDSHIP	**LANDSCAPE-SCALE RESTORATION**
• Expand protected area within landscape using biodiversity stewardship: o Draw on the ECPTA's protected area expansion strategy o Support the expansion of the Greater Kromme Stewardship Initiative to help secure key priority areas in the SWSA as formal protected areas o Support the expansion of the work of Eden to Addo to help secure key priority areas in the SWSA as formal protected areas o Explore the expansion of conservancies as a means of creating collaborative mechanisms for improved water management.	• Develop an integrated IAP clearing and fire management plan for the SWSA • Engage the DFFE's Natural Resource Management programme to clear IAPs (mainly wattle).

PROTECT: TSITSIKAMMA SWSA

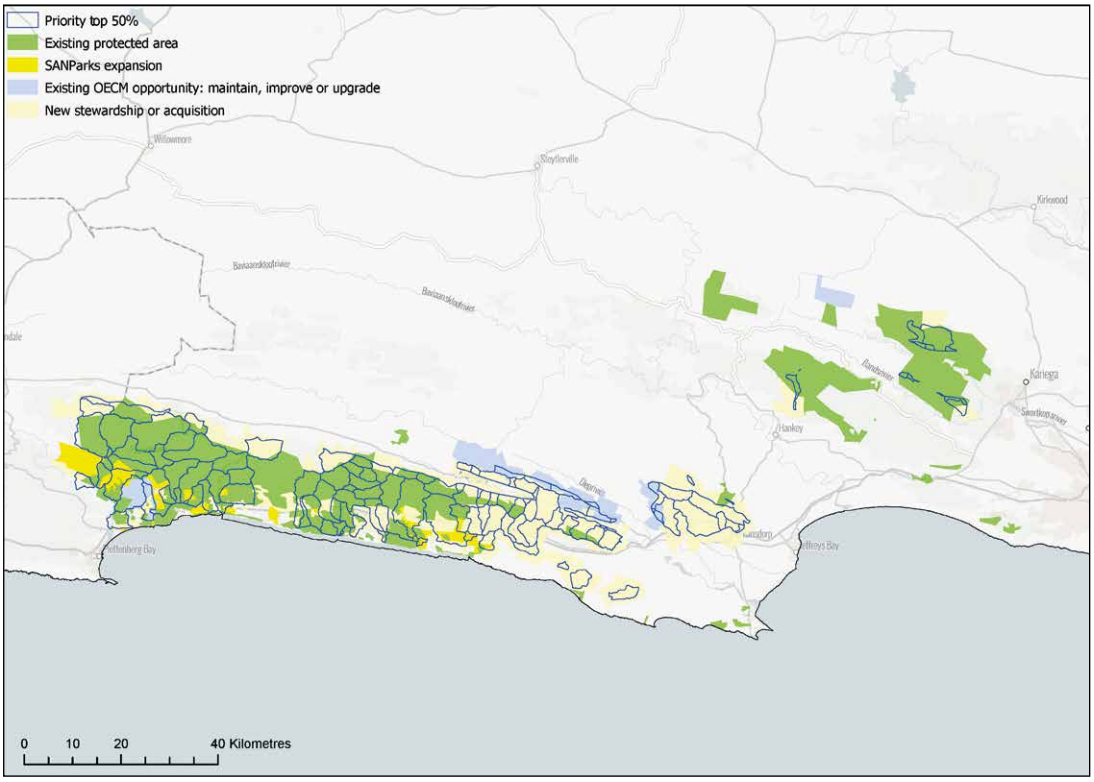


Figure 27: Spatial opportunities for PROTECT interventions in the Tsitsikamma SWSA

RESTORE: TSITSIKAMMA SWSA

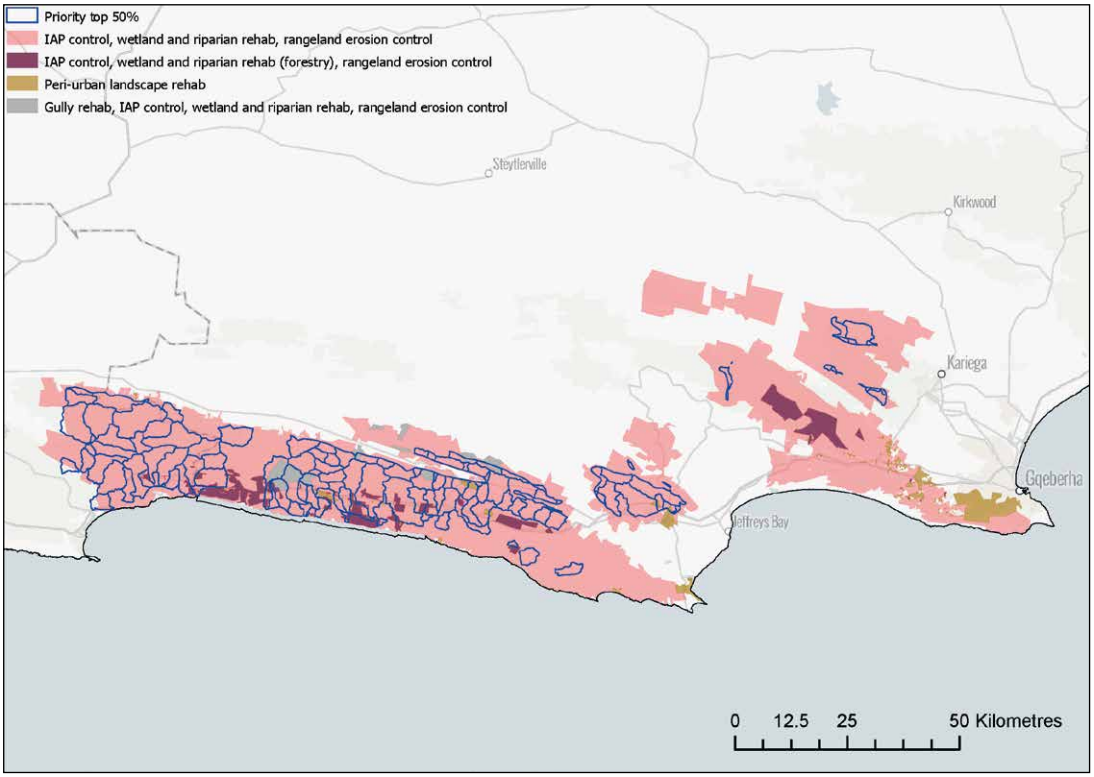


Figure 28: Spatial opportunities for RESTORE interventions in the Tsitsikamma SWSA

Establishing a water fund is a potential opportunity once the groundwork is in place, for example when an integrated alien fire management plan is developed.

AMATHOLE

SWSA size	Area to be prioritised
200 162 ha	103 735 ha

Protected areas	Natural land cover	Degraded land
3%	65%	35%

TOP 50% PRIORITY QUINARIES: AMATHOLE SWSA

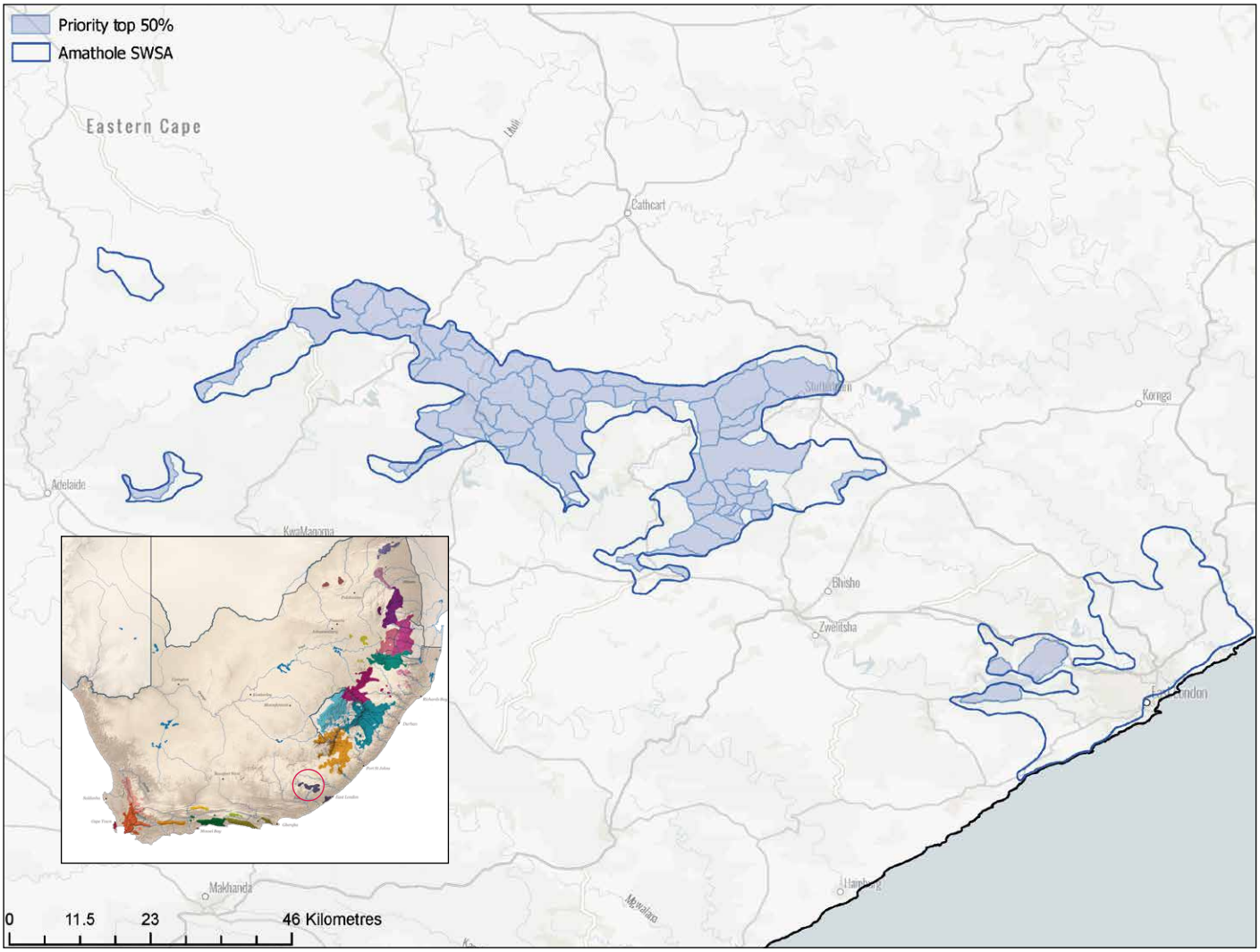


Figure 29: The top 50% prioritised quinaries (blue) in the Amathole SWSA

DOMINANT LAND USE

The Amathole SWSA is located in the Eastern Cape province, extending across the Amathole mountain range from the high-altitude escarpment west of Qonce (King William's Town) towards Hogsback, Stutterheim and the coastal catchments draining into the Indian Ocean. The SWSA forms the headwaters of several important river systems, including the Great Kei, Buffalo, Nahoon and Gonubie rivers, supplying water to major urban centres such as East London, as well as rural communities, agriculture and industry. The landscape is characterised by indigenous Afromontane forests, montane grasslands, wetlands, commercial forestry, communal rangelands and protected areas, making it one of the Eastern Cape's most important water-producing and biodiversity-rich landscapes. Figure 29 illustrates the spatial extent of the priority top 50% quinaries within the Amathole SWSA.

The SWSA has two separate areas, with the upper catchment consisting of a combination of natural grasslands and indigenous Afromontane forests and extensive commercial forestry plantations, while the lower portion of the SWSA is dominated by the urban area and expanse of East London.

KEY PARTNERSHIPS

Water management area	• Mzimvubu-Tsitsikamma
Key water associations	• Buffalo River Water User Association: primarily an agricultural irrigation institution rather than a strategic catchment-wide conservation body. Its main stakeholders are commercial farmers and other authorised water users within the irrigation scheme area.
Key landholdings	• State forestry land – DFFE
Other key partnerships	• Amathole Mountain Catchment Partnership • Eastern Cape Conservancies Association • Eastern Cape Parks and Tourism Agency • Endangered Wildlife Trust • Rharhabe Royal House • SANParks • The Nature Conservancy

KEY INTERVENTIONS: AMATHOLE SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**RESTORE**
NEW PRIVATE AND COMMUNAL STEWARDSHIP • Expand protected area within landscape using biodiversity stewardship: o Prioritise conservation area by SANParks as one of South Africa's Mega Living Landscapes (MLLs) under its Vision 2040 approach o Employ landscape-level biodiversity stewardship approach based on the ECPTA's protected area expansion strategy o Secure all state forestry land and engage with the management authority o Explore the expansion of conservancies as a means of creating collaborative mechanisms for improved water management.	**LANDSCAPE-SCALE RESTORATION** • Develop strategic rehabilitation and management plans for the quinary catchments directly upstream of major water supply dams, including Sindile Dam, Mnyameni Dam and Cata Dam • Engage the DFFE Natural Resource Management programme to clear the significant infestation of IAPs (mainly wattle).

PROTECT: AMATHOLE SWSA

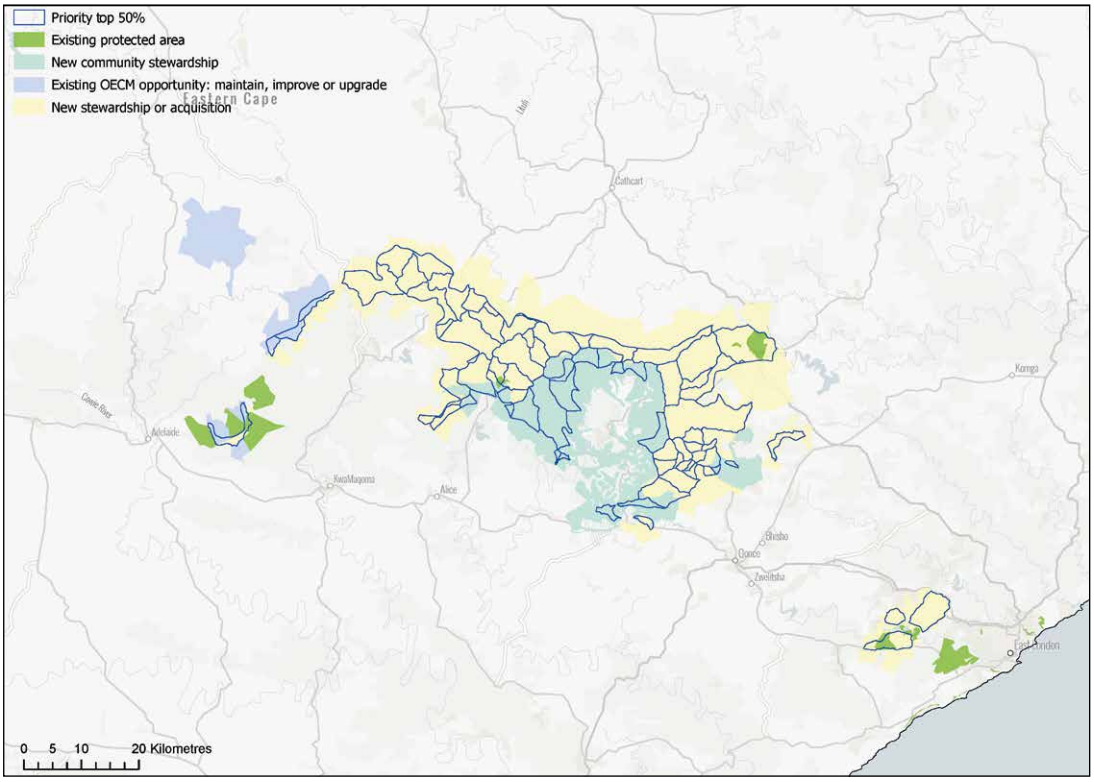


Figure 30: Spatial opportunities for PROTECT interventions in the Amathole SWSA

RESTORE: AMATHOLE SWSA

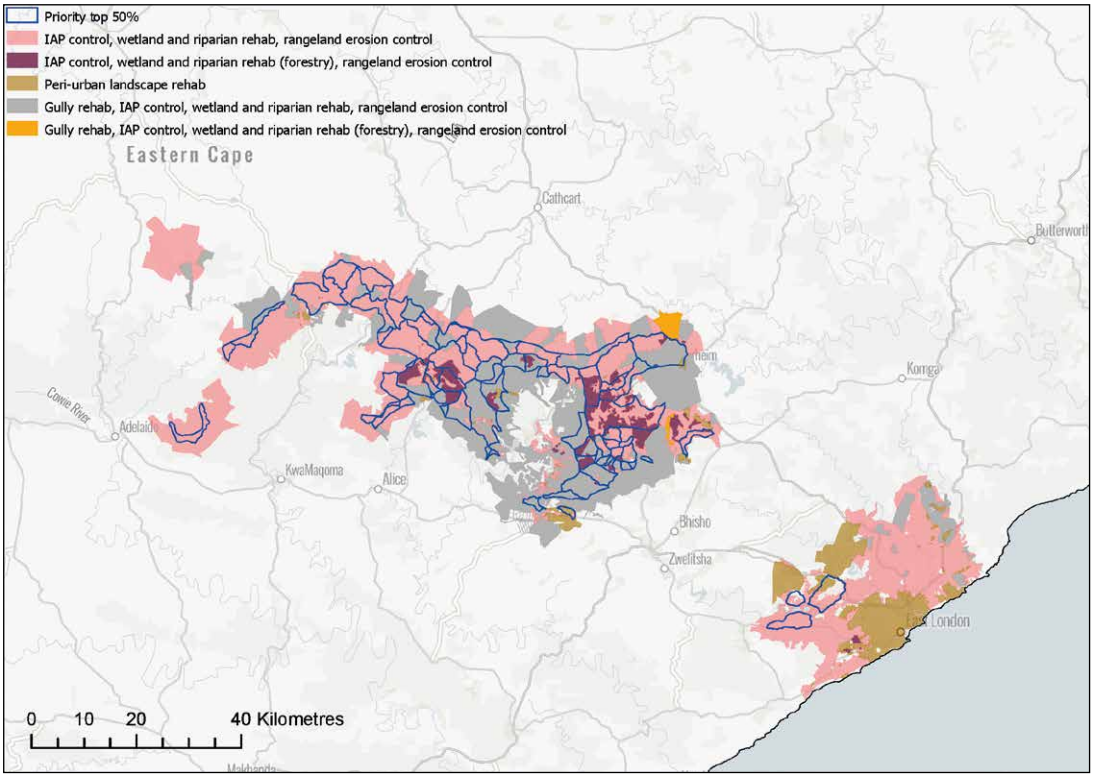


Figure 31: Spatial opportunities for RESTORE interventions in the Amathole SWSA

EASTERN CAPE DRAKENSBERG

SWSA size	Area to be prioritised
1 452 839 ha	728 158 ha

Protected areas	Natural land cover	Degraded land
2,1%	72,9%	27,1%

TOP 50% PRIORITY QUINARIES: EASTERN CAPE DRAKENSBERG SWSA

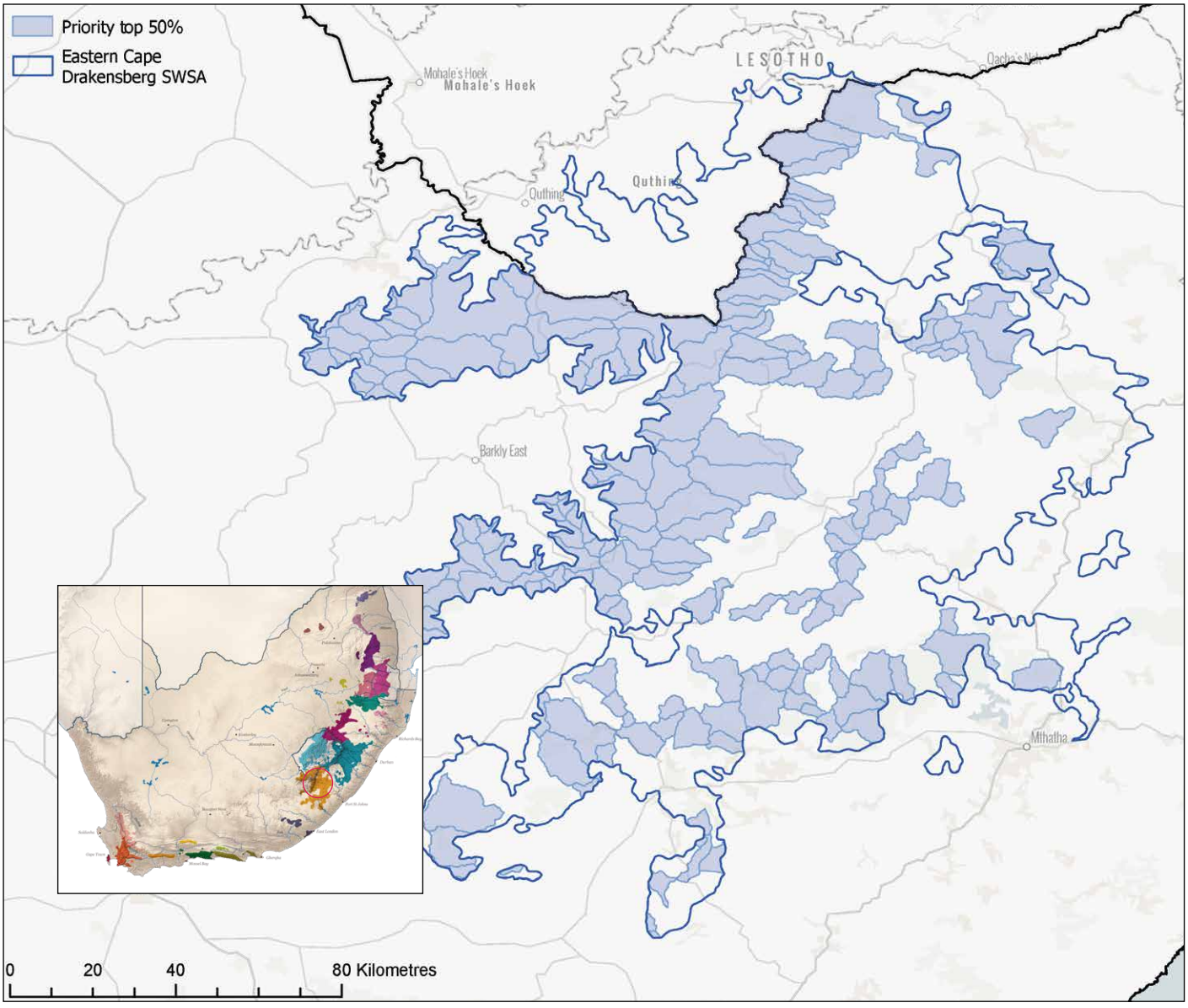


Figure 32: The top 50% prioritised quinaries (blue) in the Eastern Cape Drakensberg SWSA

DOMINANT LAND USE

The Eastern Cape Drakensberg SWSA is located in the Eastern Cape province, extending from the high-altitude southern Drakensberg Mountains along the border with Lesotho southwards towards the coastal escarpment. Centred around the towns of Maclear and Ugie, the SWSA forms the headwaters of several important river systems, including the Mzimvubu, Mthatha, Tsitsa and Great Kei rivers, which provide water to downstream communities, agriculture, industry and estuarine ecosystems. The landscape is characterised by extensive montane grasslands, wetlands, indigenous forests, communal rangelands, commercial forestry and protected areas. Figure 32 illustrates the spatial extent of the priority top 50% quinaries within the Eastern Cape Drakensberg SWSA.

The SWSA is dominated by high-altitude mountain grasslands along the southern Drakensberg Escarpment, with livestock grazing as the primary human land use overlay. Moving into the foothills, the landscape becomes dominated by commercial forestry plantations and commercial crop agriculture.

KEY PARTNERSHIPS

Water management area	• Mzimvubu-Tsitsikamma
Key water associations	• N/A
Key landholdings	• Traditional authorities • PG Bison
Other key partnerships	• Conservation South Africa • Eastern Cape Parks and Tourism Agency • Environmental & Rural Solutions • Lima Rural Development Foundation • Meat Naturally • SANParks • Umzimvubu Catchment Partnership • WWF-H&M partnership

KEY INTERVENTIONS: EASTERN CAPE DRAKENSBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**MANAGE**
NEW PRIVATE AND COMMUNAL STEWARDSHIP • Expand protected area within landscape using biodiversity stewardship: o Secure communal and private land within the new Grasslands National Park in line with SANParks' Mega Living Landscapes programme funded by the GEF-8 Reimagining National Parks for People and Nature Mega Living Landscapes Project o Complete the process to secure the Maloti Thaba Tsa Metsi Protected Environment o Establish a corridor/linkages between the Grasslands National Park and the Maloti Thaba Tsa Metsi Protected Environment o Secure Herding 4 Health grazing agreements as potential other effective area-based conservation measures (OECMs). **NEW CORPORATE STEWARDSHIP** • Secure forestry conservation areas as protected environments.	**STEWARDSHIP MAINTENANCE – COMMUNAL RANGELANDS** • Scale up improved rangeland management, especially by small-scale or traditional farmers, through grazing agreements and incentives. **CONSERVATION AGRICULTURAL EXTENSION – COMMERCIAL** • Engage Department of Agriculture's LandCare programme within the SWSA to help landowners with conservation agriculture and water-related rehabilitation activities.

PROTECT: EASTERN CAPE DRAKENSBERG SWSA

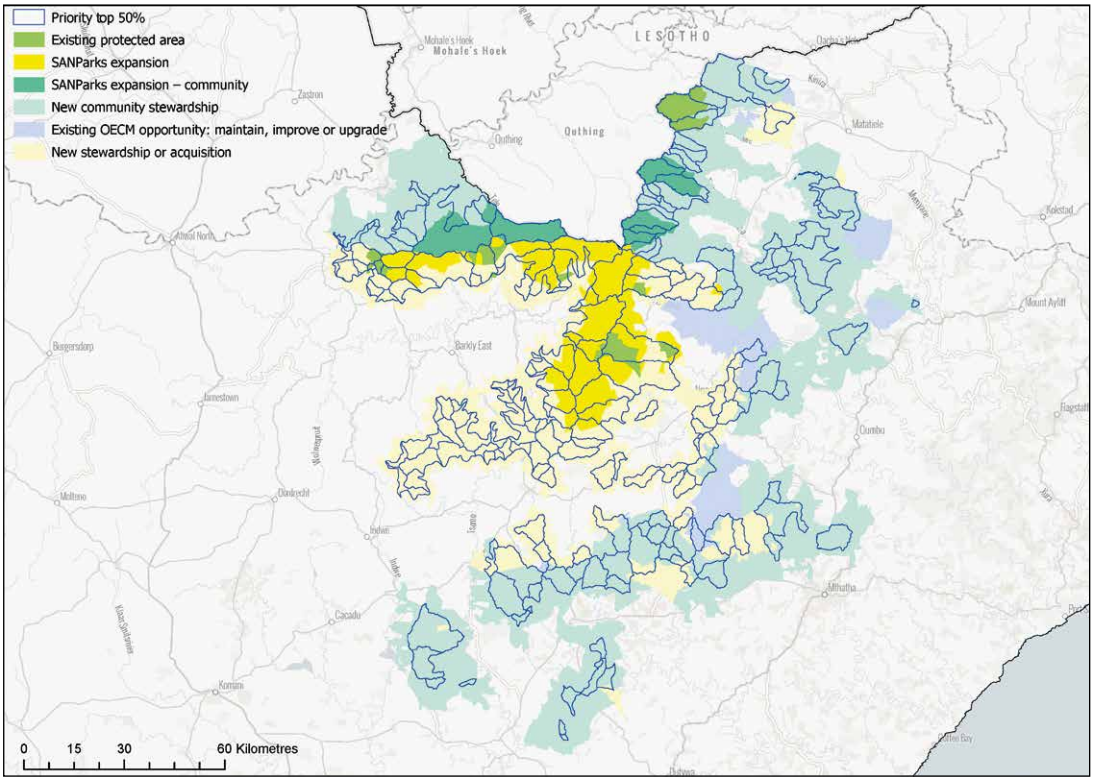


Figure 33: Spatial opportunities for PROTECT interventions in the Eastern Cape Drakensberg SWSA

MANAGE: EASTERN CAPE DRAKENSBERG SWSA

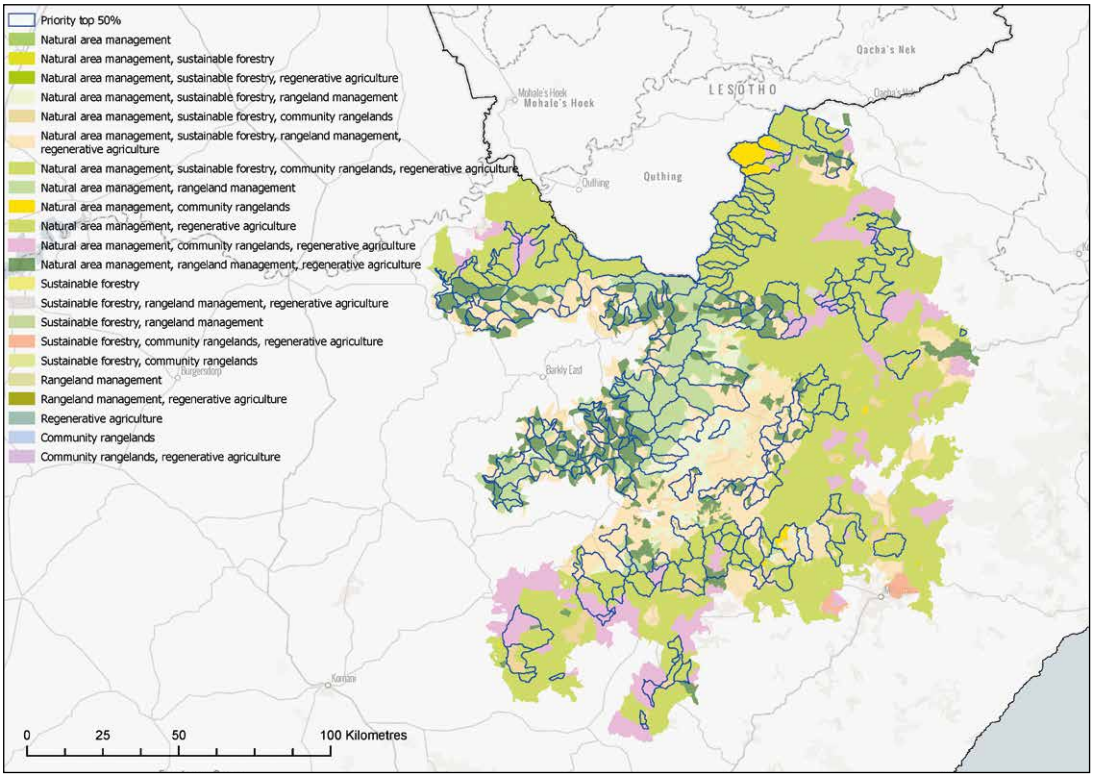


Figure 34: Spatial opportunities for MANAGE interventions in the Eastern Cape Drakensberg SWSA

Opportunities linked to the forestry masterplan for the region and the restoration economy focused on IAP control and utilisation of biomass, as well as potential for the development of carbon markets, including the feasibility undertaken by SANParks.

MALOTI-DRAKENSBERG

SWSA size	Area to be prioritised
154 703 ha	79 416 ha

Protected areas	Natural land cover	Degraded land
15,8%	66,4%	33,6%

TOP 50% PRIORITY QUINARIES: MALOTI-DRAKENSBERG SWSA

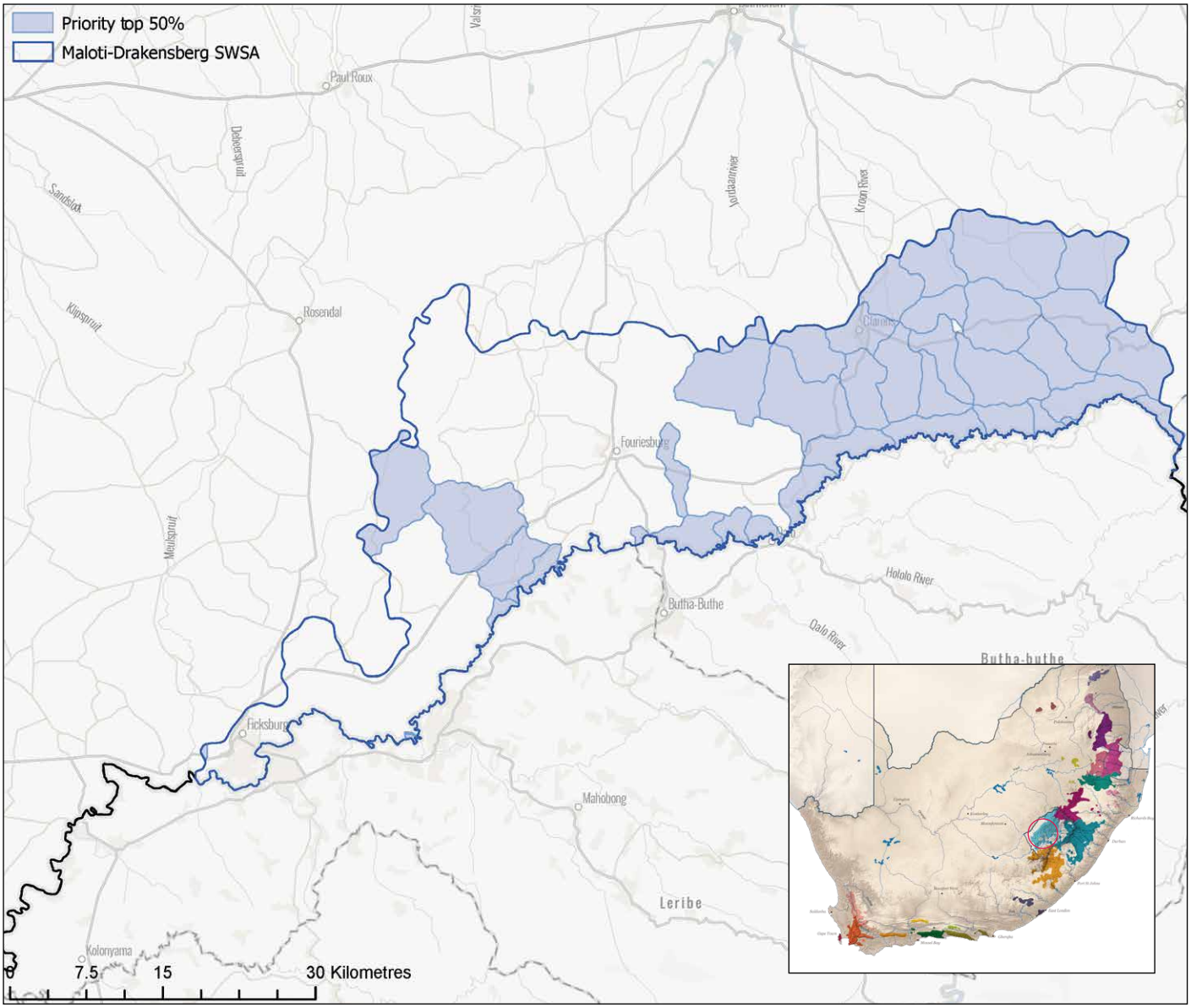


Figure 35: The top 50% prioritised quinaries (blue) in the Maloti-Drakensberg SWSA

DOMINANT LAND USE

The Maloti-Drakensberg SWSA is located along the border between KwaZulu-Natal, the Eastern Cape and Lesotho, encompassing the Maloti-Drakensberg mountain range. As South Africa's most important SWSA, it forms the headwaters of several major river systems, including the uThukela, Orange-Senqu and Umzimvubu rivers, supplying water to millions of people, major urban centres, agriculture, industry and hydropower schemes.

The landscape is characterised by extensive high-altitude grasslands, wetlands, indigenous forests and protected areas of exceptional biodiversity, while also supporting communal rangelands and livestock production. Given its transboundary nature and strategic importance for national water security, coordinated conservation and sustainable land management are essential. Figure 35 illustrates the spatial extent of the priority top 50% quinaries within the Maloti-Drakensberg SWSA within South Africa.

Located within the Maloti Mountains in the Free State province, the SWSA is dominated by montane grassland and wetland habitats, with relatively low levels of intensive agriculture (mainly maize) in the flatter valleys adjacent to water resources.

KEY PARTNERSHIPS

Water management area	• Vaal-Orange
Key water associations	• N/A
Key landholdings	• SANParks
Other key partnerships	• Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) • Maloti-Drakensberg Transfrontier Programme • Orange-Senqu River Commission • ReNOKA • University of Free State – linked to research on sustainable agriculture

KEY INTERVENTIONS: MALOTI-DRAKENSBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
MANAGE	PROTECT
CONSERVATION AGRICULTURAL EXTENSION – COMMERCIAL • Engage Department of Agriculture's LandCare programme within the SWSA to assist landowners with conservation agricultural and water-related rehabilitation activities • Encourage no-till conservation agriculture within intensive cropping areas.	**NEW PRIVATE AND COMMUNAL STEWARDSHIP** • Expand protected area within landscape using biodiversity stewardship: o Expand Golden Gate National Park, focusing on the SANParks' identified expansion areas.

MANAGE: MALOTI-DRAKENSBERG SWSA

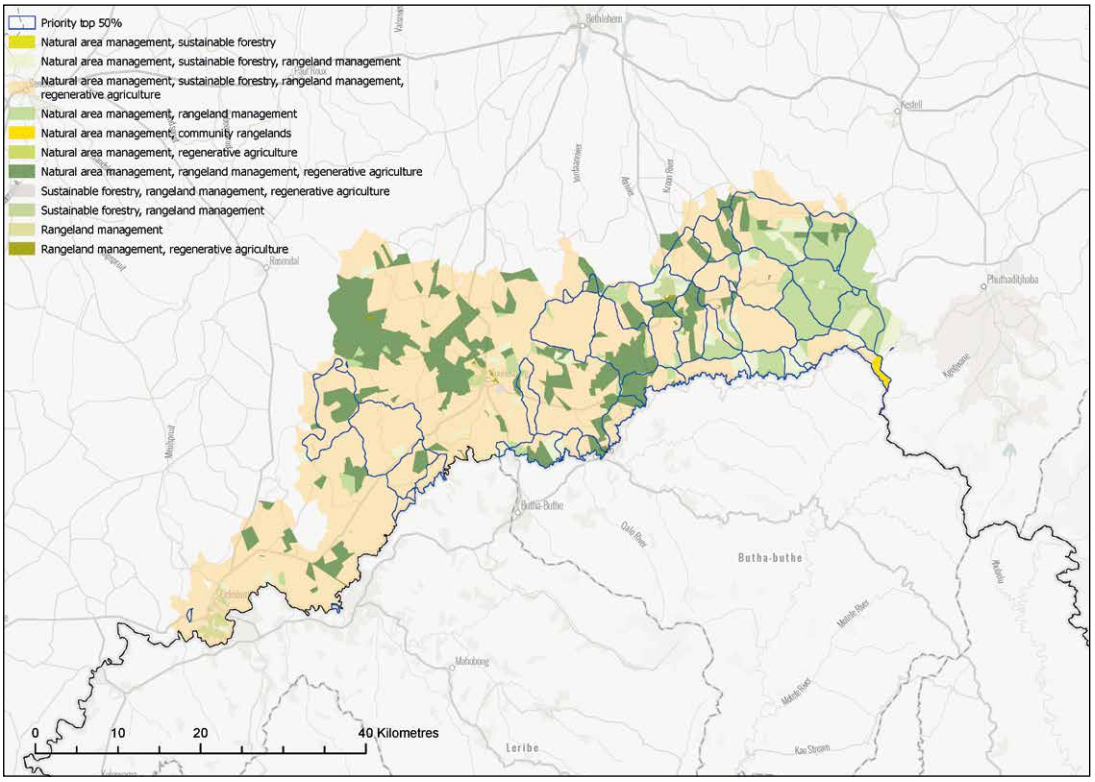


Figure 36: Spatial opportunities for MANAGE interventions in the Maloti-Drakensberg SWSA

PROTECT: MALOTI-DRAKENSBERG SWSA

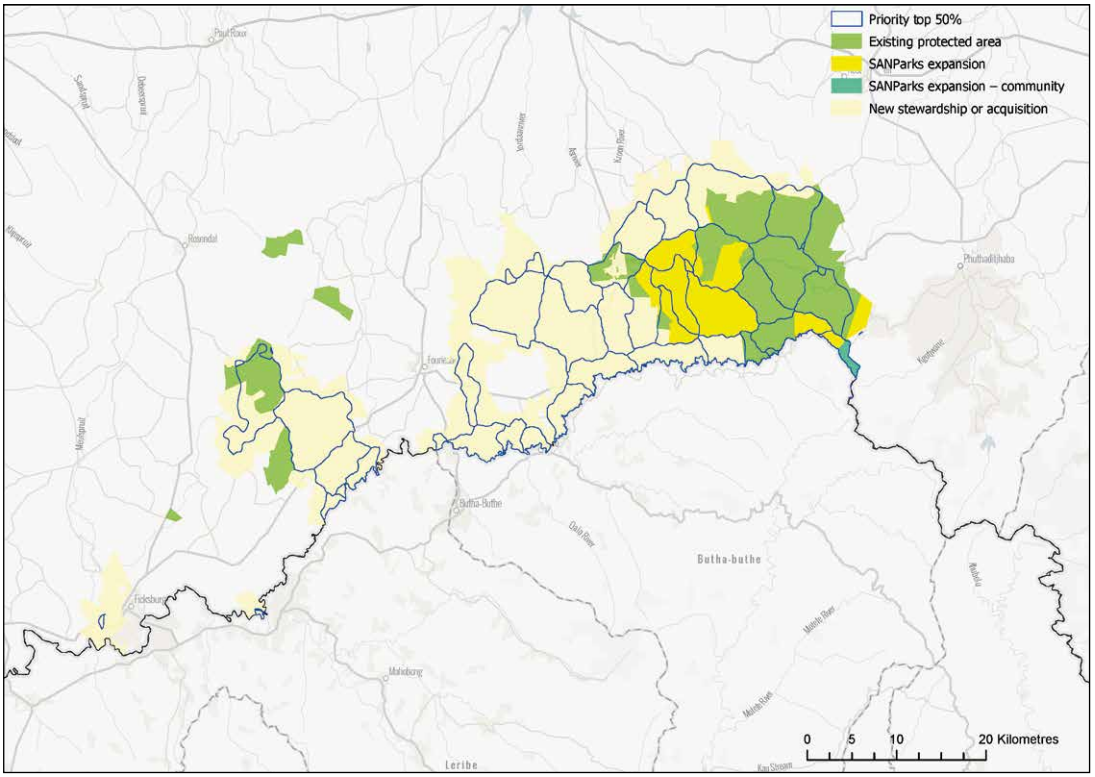


Figure 37: Spatial opportunities for PROTECT interventions in the Maloti-Drakensberg SWSA

A significant portion of this SWSA has been identified as protected agricultural areas, indicating that dedicated engagement with the Department of Agriculture is required.

SOUTHERN DRAKENSBERG

SWSA size	Area to be prioritised
1 842 147 ha	927 659 ha

Protected areas	Natural land cover	Degraded land
14%	52,6%	47,3%

TOP 50% PRIORITY QUINARIES: SOUTHERN DRAKENSBERG SWSA

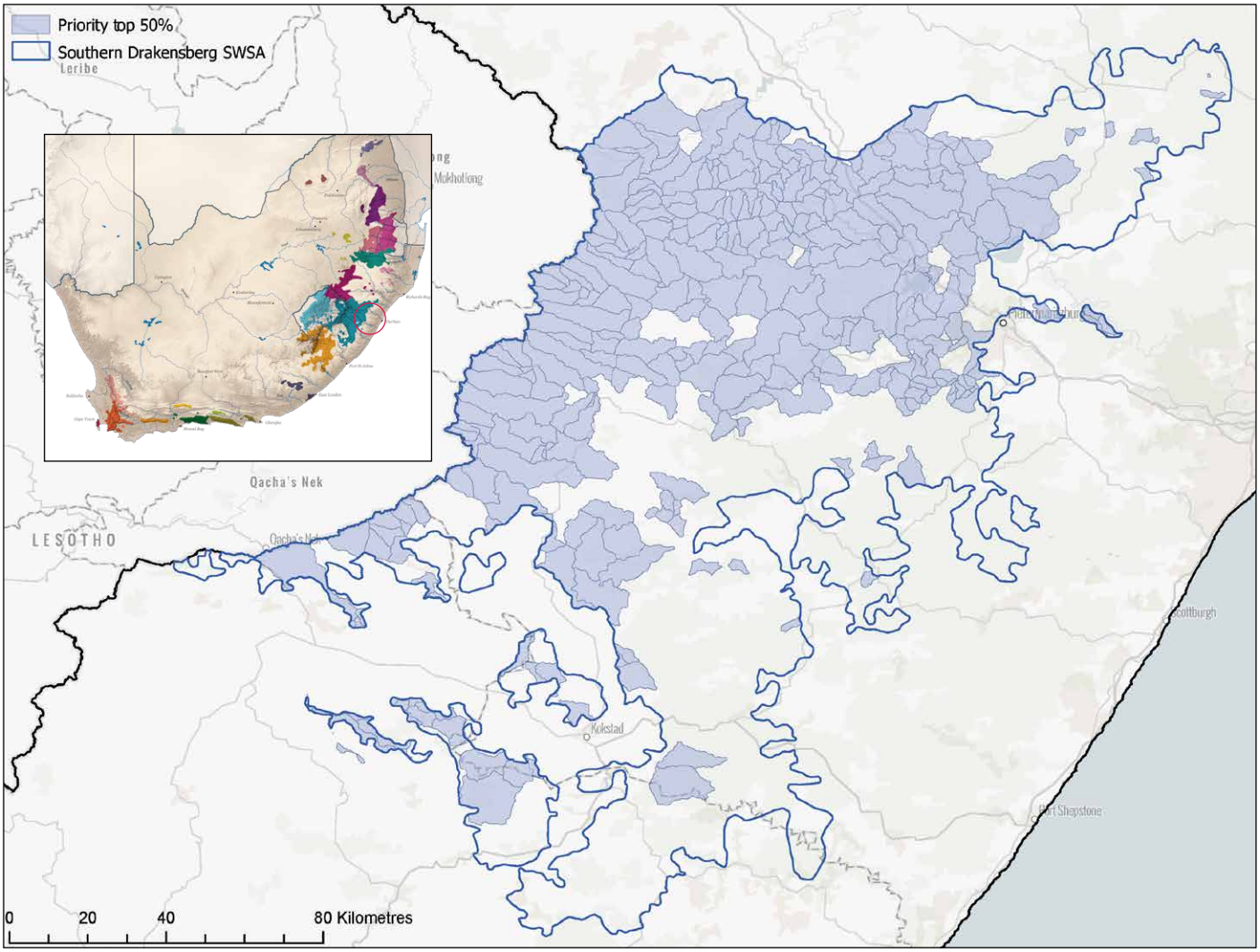


Figure 38: The top 50% prioritised quinaries (blue) in the Southern Drakensberg SWSA

DOMINANT LAND USE

The Southern Drakensberg SWSA is located predominantly in KwaZulu-Natal, encompassing the central and southern sections of the Maloti-Drakensberg Park and extending eastwards into the KwaZulu-Natal Midlands towards Pietermaritzburg. This strategically important water-producing landscape forms the headwaters of the uMngeni, uMkhomazi and uMzimkhulu river systems, providing water to major urban centres, agriculture, industry and rural communities across the province. The SWSA is characterised by extensive high-altitude grasslands, wetlands, indigenous forests, communal rangelands and protected areas. Figure 38 illustrates the spatial extent of the priority top 50% quinaries within the Southern Drakensberg SWSA.

This SWSA contains natural, intact montane grasslands in the Drakensberg Escarpment in the west, which becomes a mix of intensive agricultural (such as dairy, sugarcane and maize) and livestock farming, with a band of commercial forestry plantations, towards the east.

KEY PARTNERSHIPS

Water management area	• Pongola-Mtamvuna and Umzimvubu-Tsitsikamma
Key water associations	• uMngeni-uThukela Water
Key landholdings	• Dairy cooperatives • Merensky Timber • Mondi South Africa • NCT Forestry • Sappi Southern Africa • Ingonyama Trust Board
Other key partnerships	• Amanzi Ethu Nobuntu • Duzi-uMngeni Conservation Trust • Pongola-uMzimkhulu Catchment Management Agency • Umkhomazi Catchment Working Group • uMngeni Ecological Infrastructure Partnership • Umzimvubu Catchment Partnership • WWF-CHEP partnership • WWF-Mondi South Africa partnership • WWF-PepsiCo partnership • WWF-Sappi Southern Africa partnership

KEY INTERVENTIONS: SOUTHERN DRAKENSBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**MANAGE**

NEW PRIVATE AND COMMUNAL STEWARDSHIP

- Expand protected area within landscape using biodiversity stewardship:
    - Complete the process to secure the Maloti Thaba Tsa Metsi Protected Environment
    - Obtain formal protection for the landholdings surrounding and directly downstream of uMngeni Vlei (upper uMngeni catchment area)
    - Explore innovative water stewardship opportunities such as creating protected areas along rivers with targeted water management interventions and outcomes, especially along the uMngeni River.

NEW ACQUISITION

- Acquire land in the Maloti-Drakensberg Transfrontier Programme buffer area for incorporation into the Maloti-Drakensberg Park.

MANAGEMENT OF EXISTING PROTECTED AREAS

- Address capacity and resourcing in the management of the Maloti-Drakensberg Park.

STEWARDSHIP MAINTENANCE – COMMUNAL RANGELAND

- Support community initiatives around Ntsikeni Nature Reserve, including protected area expansion
- Support and expand the Herding 4 Health programme, which is implemented by the Institute of Natural Resources, Conservation South Africa and Environmental & Rural Solutions in the region.

STEWARDSHIP MAINTENANCE – FORESTRY

- Support to the forestry sector (Mondi South Africa, Sappi Southern Africa, CHEP and NCT Forestry):
    - Encourage the use of biodiversity reporting tools (such as the WWF Biodiversity Risk Filter) for more accurate and meaningful reporting on biodiversity impacts
    - Use the WWF Biodiversity Risk Filter to prioritise wetland delineation based on water returns
    - Meet auditing requirements in Forestry Stewardship Council (FSC) audits for water management within the SWSA.

CONSERVATION AGRICULTURAL EXTENSION

- Improve water management within agricultural sectors, especially dairy and sugarcane
- Improve compliance with the conditions of water use licences that pertain to water abstraction and irrigation.



© Hougaard Malan / WWF South Africa

PROTECT: SOUTHERN DRAKENSBERG SWSA

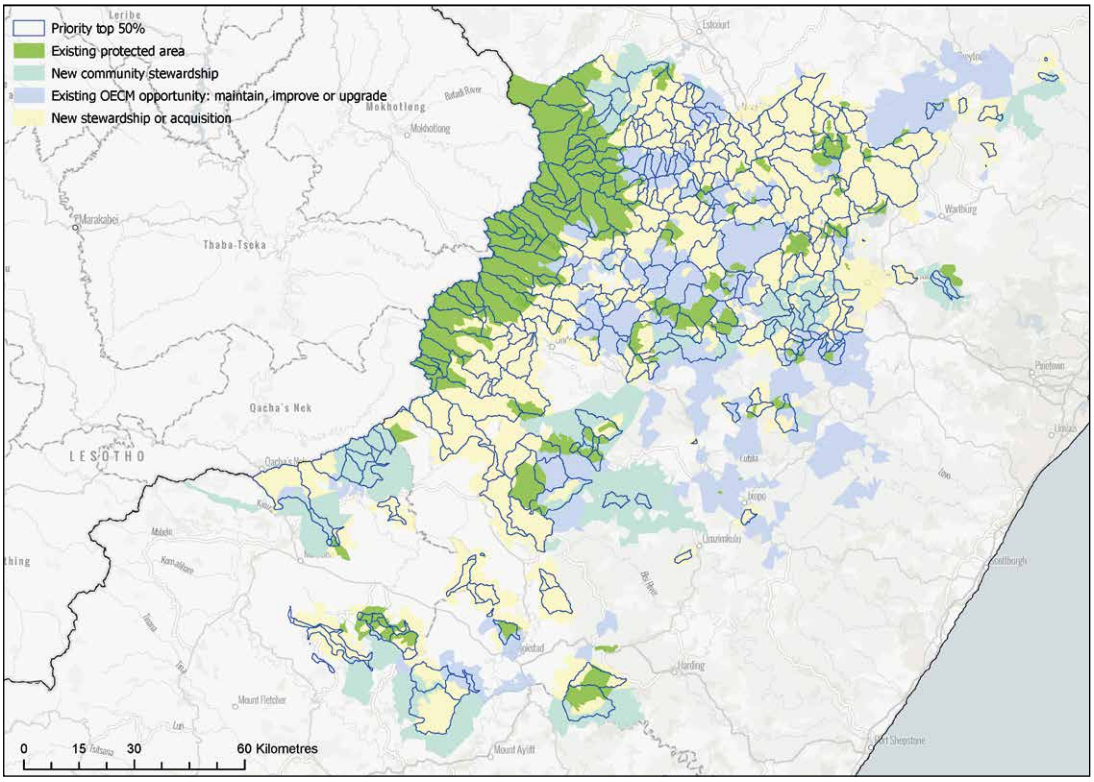


Figure 39: Spatial opportunities for PROTECT interventions in the Southern Drakensberg SWSA

MANAGE: SOUTHERN DRAKENSBERG SWSA

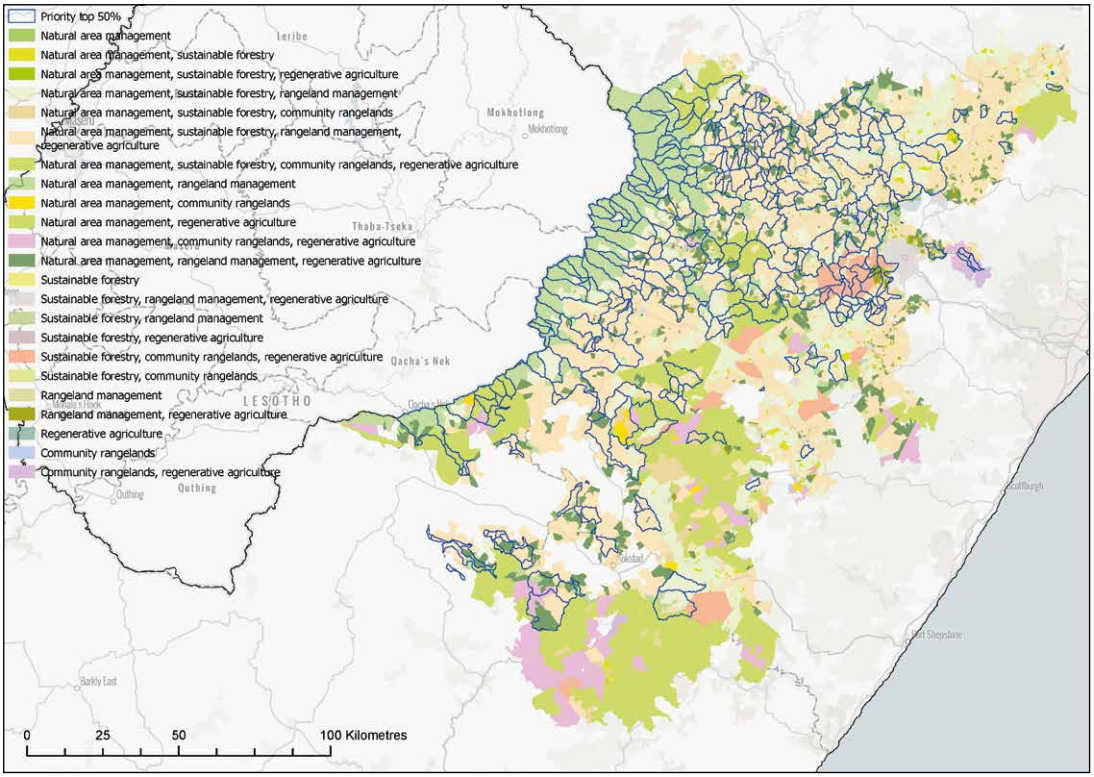


Figure 40: Spatial opportunities for MANAGE interventions in the Southern Drakensberg SWSA

Need to develop appropriate governance structures across the SWSA and in the uMngeni, Umkhomazi and uMzimkhulu catchments.

NORTHERN DRAKENSBERG

SWSA size	Area to be prioritised
868 804 ha	435 006 ha

Protected areas	Natural land cover	Degraded land
13%	74%	26%

TOP 50% PRIORITY QUINARIES: NORTHERN DRAKENSBERG SWSA

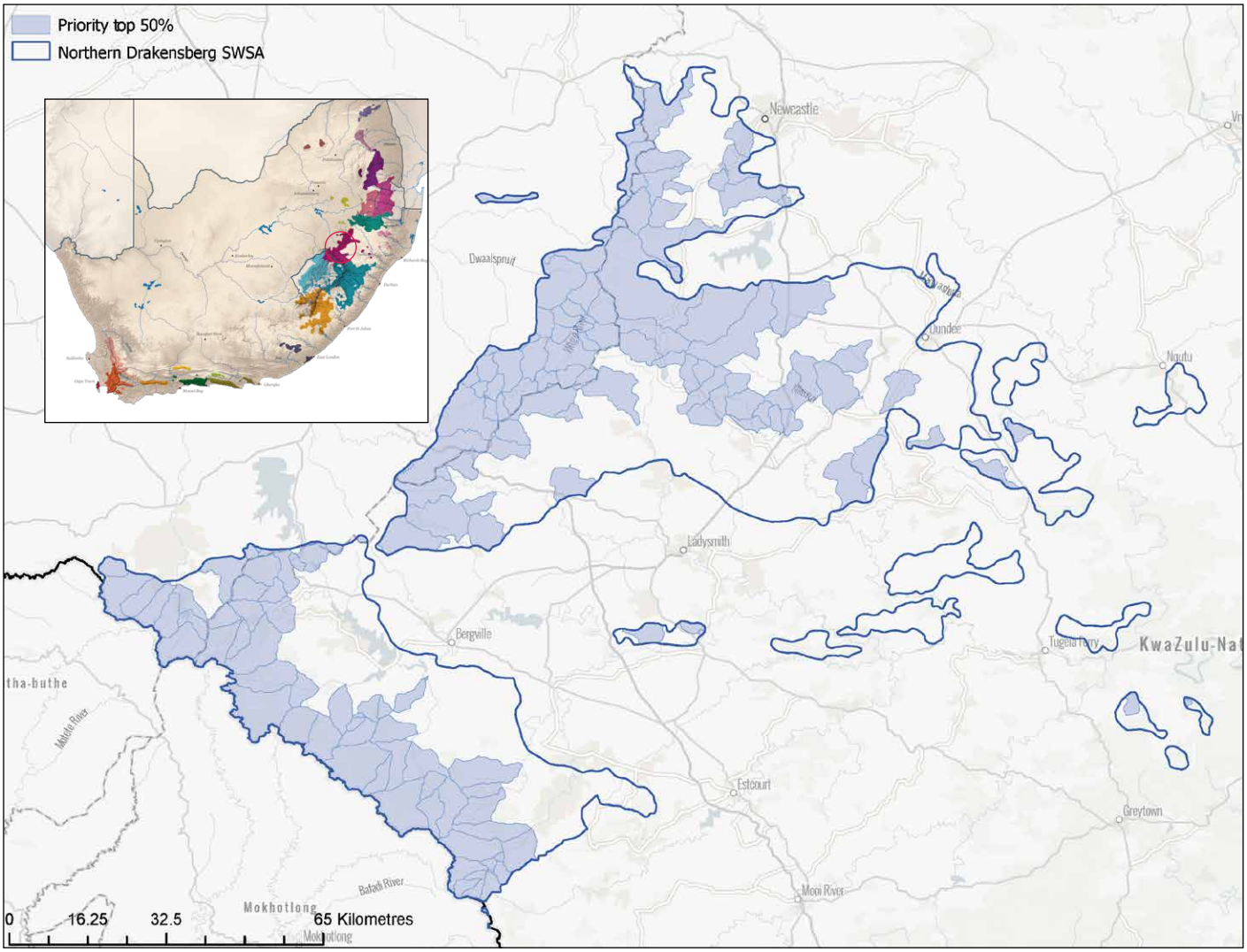


Figure 41: The top 50% prioritised quinaries (blue) in the Northern Drakensberg SWSA

DOMINANT LAND USE

The Northern Drakensberg SWSA is located predominantly in KwaZulu-Natal, extending into the eastern Free State. The SWSA follows the Drakensberg mountain range from Cathedral Peak northwards towards Newcastle. This nationally significant water-producing landscape forms the headwaters of the uThukela River and several other key river systems, supplying water to downstream communities, agriculture, industry and major urban centres. It also contributes to the water security of Gauteng through the uThukela-Vaal Inter-Basin Transfer Scheme, which transfers water from the upper uThukela catchment into the Vaal River system. Characterised by extensive high-altitude grasslands, wetlands, indigenous forests, communal rangelands and protected areas, the SWSA supports exceptional biodiversity while delivering water downstream. Figure 41 illustrates the spatial extent of the priority top 50% quinaries within the Northern Drakensberg SWSA.

The SWSA is dominated by the Drakensberg Escarpment, consisting of the northern sections of the Maloti-Drakensberg Park and extending northwards along the escarpment between KwaZulu-Natal and the Free State. Being in a relatively natural state, it is dominated by high-altitude grassland and wetland habitats, shifting towards more mixed agriculture on the flatter foothills extending eastwards to Dundee.

KEY PARTNERSHIPS

Water management area	• Pongola-Mtamvuna
Key water associations	• Central Okhahlamba Winterton Water User Association (WUA) • Drakensberg Water Transfer Scheme, more commonly known as the Tugela-Vaal Water Transfer Scheme • Tugela WUA • Upper Tugela / Little Tugela irrigation user groups
Key landholdings	• Thirsti Water
Other key partnerships	• Ingonyama Trust Board • Meat Naturally • Northern Drakensberg Collaborative • The Nature Conservancy • uMngeni-uThukela Water • Wild Trust • WWF-Heineken partnership • WWF-PepsiCo partnership • WWF-Reckitt partnership • WWF-Unilever partnership

KEY INTERVENTIONS: NORTHERN DRAKENSBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**RESTORE**
NEW PRIVATE AND COMMUNAL STEWARDSHIP • Expand protected area within landscape using biodiversity stewardship: o Secure the communal landholdings of the AmaZizi and AmaNgwane communities between Royal Natal National Park and Cathedral Peak as formal protected areas (Upper uThukela initiative) o Explore opportunities with private landowners in the Free State to expand the existing protected environments o Explore opportunities to expand the Northern Drakensberg Nature Reserve in KwaZulu-Natal. **MANAGEMENT OF EXISTING PROTECTED AREAS** • Ensure sufficient staff capacity and resourcing in the Maloti-Drakensberg Park to ensure adequate fire management and IAP clearing.	**IAP CONTROL – EXISTING PROTECTED AREAS AND COMMUNAL** • Engage the DFFE Natural Resource Management programme to clear IAPs (mainly wattle) along the Drakensberg Escarpment, linked to upscaling a silver wattle (*Acacia dealbata*) biocontrol programme • Support Maloti-Drakensberg Park to increase IAP clearing activities that are sustainably funded and have sufficient human resources. Current estimates show a 6,5% growth of wattle annually in the park.



PROTECT: NORTHERN DRAKENSBERG SWSA

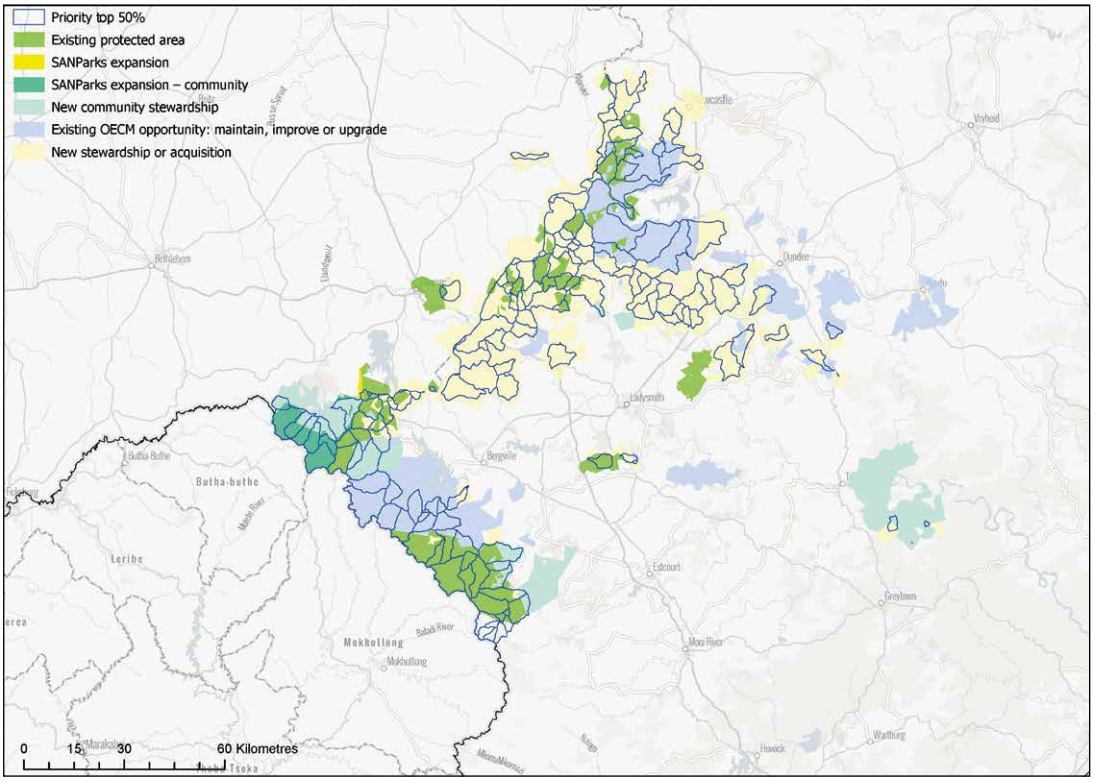


Figure 42: Spatial opportunities for PROTECT interventions in the Northern Drakensberg SWSA

RESTORE: NORTHERN DRAKENSBERG SWSA

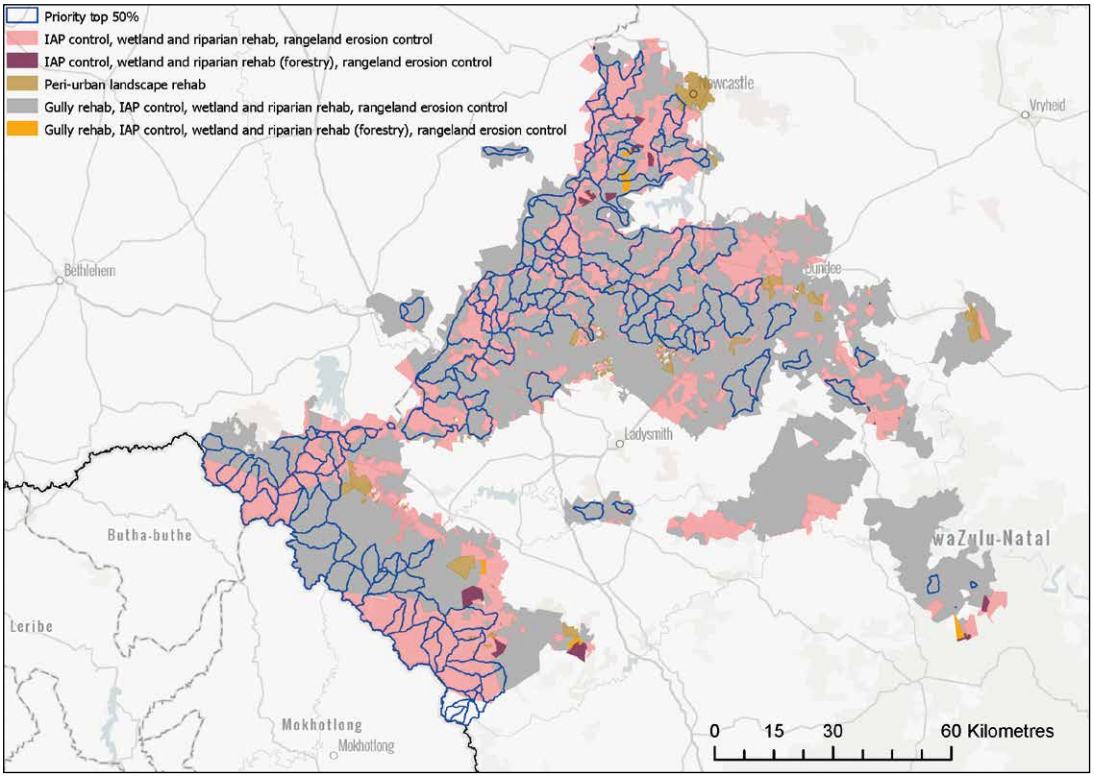


Figure 43: Spatial opportunities for RESTORE interventions in the Northern Drakensberg SWSA

Explore an alien tree biomass project towards a restoration economy and explore the development of a water fund, together with The Nature Conservancy, for the upper uThukela catchment.

MFOLOZI HEADWATERS

SWSA size	Area to be prioritised
192 069 ha	99 422 ha

Protected areas	Natural land cover	Degraded land
8,3%	56,1%	43,9%

TOP 50% PRIORITY QUINARIES: MFOLOZI HEADWATERS SWSA

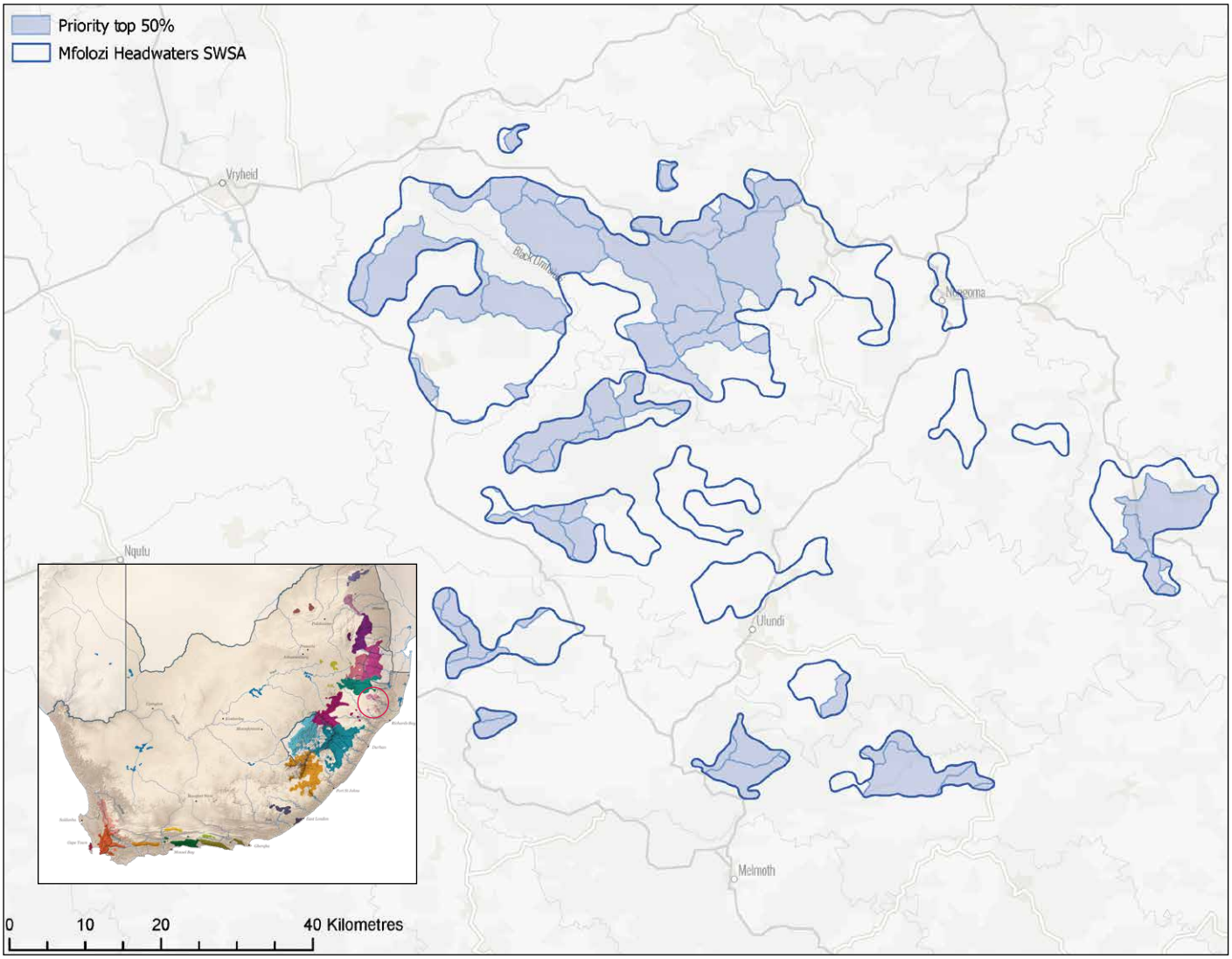


Figure 44: The top 50% prioritised quinaries (blue) in the Mfolozi Headwaters SWSA

DOMINANT LAND USE

The Mfolozi Headwaters SWSA is located in northern KwaZulu-Natal, north of the town of Ulundi, and encompasses the headwaters of the Black and White Mfolozi Rivers. The landscape is characterised by extensive high-altitude grasslands, wetlands, commercial forestry, communal rangelands and protected areas that collectively play a critical role in regulating water flows and supporting downstream water supply for communities, agriculture and the ecologically important iSimangaliso and Mfolozi catchments. The SWSA also provides an important habitat for biodiversity and supports a range of ecosystem services. Figure 44 illustrates the spatial extent of the priority top 50% quinaries within the Mfolozi Headwaters SWSA.

The SWSA is highly fragmented in the landscape, dominated by commercial forestry plantations and surrounded by communal land with extensive human settlement and associated infrastructure.

KEY PARTNERSHIPS

Water management area	• Pongola-Mtamvuna
Key water associations	• Mhlathuze Water Board (Richards Bay) • Mhlathuze Water User Association (WUA) • Pongola WUA
Key landholdings	• Ezemvelo KwaZulu-Natal Wildlife • NCT Forestry • uMhlathuze Water Stewardship Partnership • uMngeni-uThukela Water • WWF-Mondi South Africa partnership
Other key partnerships	• uMfolozi Biodiversity Economy Node

KEY INTERVENTIONS: MFOLOZI HEADWATERS SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	MANAGE
NEW PRIVATE AND CORPORATE STEWARDSHIP • Expand protected area within landscape using biodiversity stewardship: o Explore biodiversity stewardship options for Mondi's conservation areas o Suppport NCT Forestry to formally declare landholdings adjacent to Ophathe Game Reserve. **NEW COMMUNAL STEWARDSHIP** • Explore opportunities to incorporate communal land into Hluhluwe-iMfolozi Park through co-management agreements.	**STEWARDSHIP MAINTENANCE – FORESTRY** • Support to the forestry sector (Mondi and NCT Forestry): o Encourage the use of the WWF Biodiversity Risk Filter for more accurate and meaningful reporting on biodiversity impacts o Use the WWF Biodiversity Risk Filter to prioritise wetland delineation based on water returns o Meet auditing requirements of FSC audits for water management within the SWSA.

PROTECT: MFOLOZI HEADWATERS SWSA

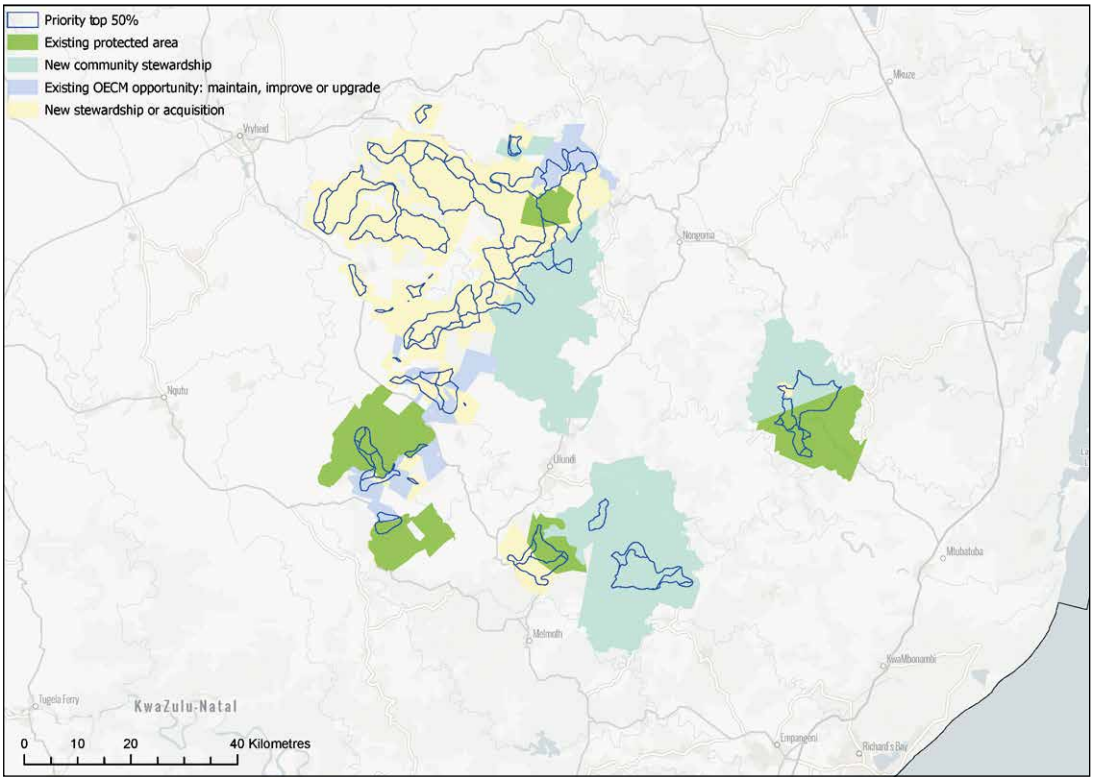


Figure 45: Spatial opportunities for PROTECT interventions in the Mfolozi Headwaters SWSA

MANAGE: MFOLOZI HEADWATERS SWSA

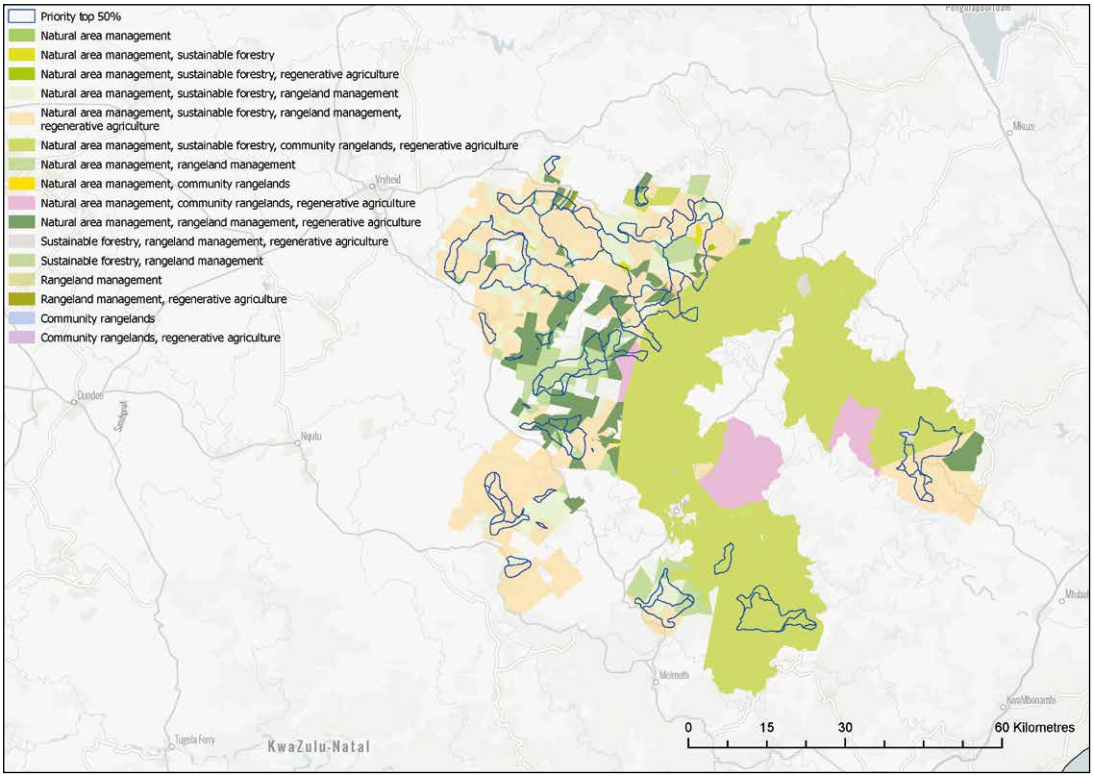


Figure 46: Spatial opportunities for MANAGE interventions in the Mfolozi Headwaters SWSA

The Mfolozi SWSA is extremely fragmented and any intervention needs to take into account the land use and quinary catchments surrounding those prioritised, with an understanding that additional quinary catchments may need to be included to achieve a viable intervention.

ENKANGALA GRASSLANDS

SWSA size	Area to be prioritised
788 131 ha	394 843 ha

Protected areas	Natural land cover	Degraded land
12,7%	64,5%	35,5%

TOP 50% PRIORITY QUINARIES: ENKANGALA GRASSLANDS SWSA

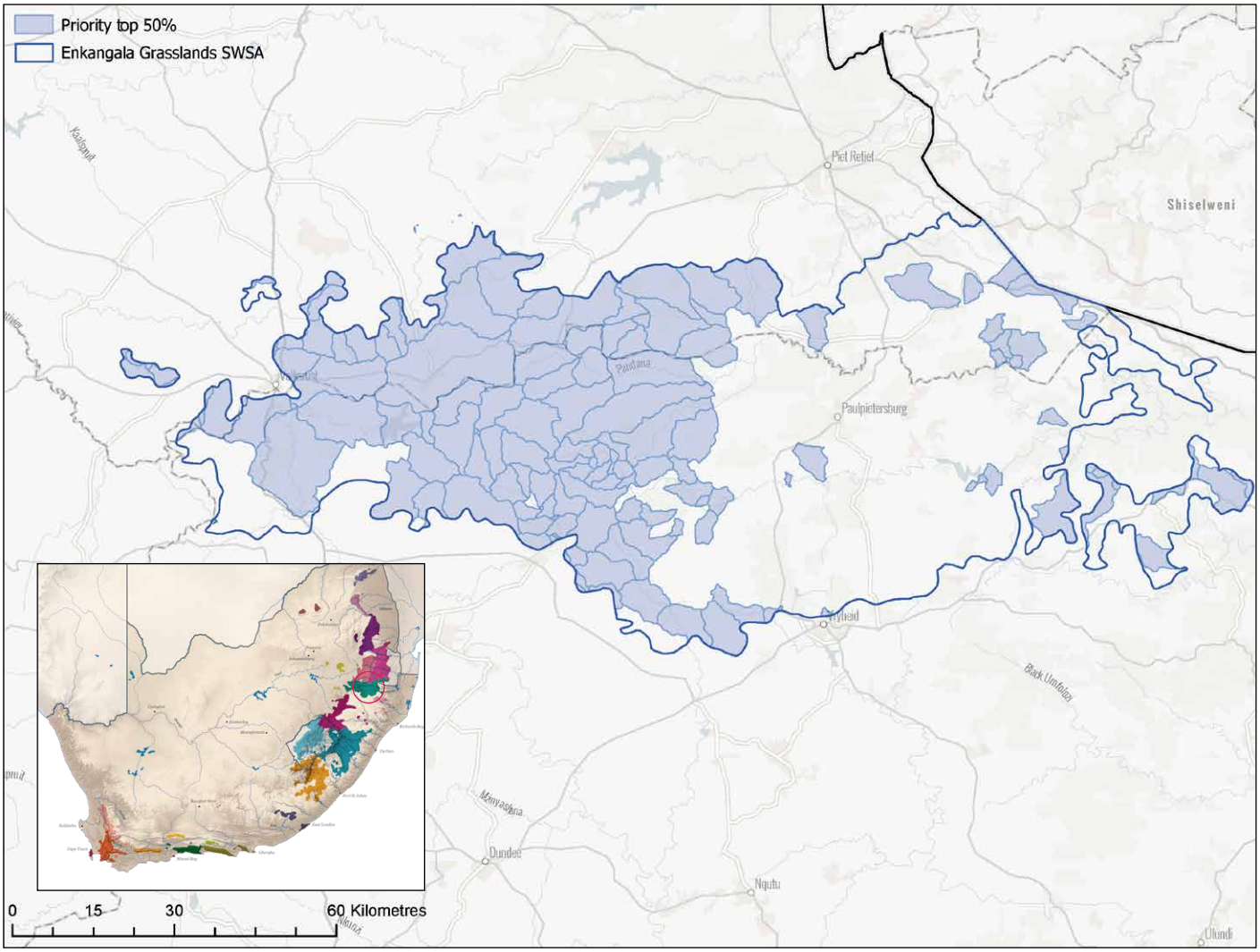


Figure 47: The top 50% prioritised quinaries (blue) in the Enkangala Grasslands SWSA

DOMINANT LAND USE

The Enkangala Grasslands SWSA spans the southern regions of Mpumalanga and the northern regions of KwaZulu-Natal, encompassing the towns of Volksrust, Wakkerstroom and Paulpietersburg. The landscape is characterised by extensive high-altitude grasslands, wetlands and escarpment ecosystems that form the headwaters of several important river systems and provide water to downstream communities, agriculture, industry and ecosystems. The Enkangala Grasslands are internationally recognised for their exceptional biodiversity, supporting numerous endemic and threatened species while also delivering critical ecosystem services. However, the SWSA faces increasing pressures from commercial forestry, agriculture, mining and infrastructure development. Figure 47 illustrates the spatial extent of the priority top 50% quinaries within the Enkangala Grasslands SWSA.

The dominant land use is large contiguous rangelands, farmed with small or large stock. A band of commercial forestry exists towards the eastern region of the SWSA.

KEY PARTNERSHIPS

Water management area	• Pongola-Mtamvuna
Key water associations	• Impala Water User Association
Key landholdings	• Farmers within the SWSA • Land reform sites
Other key partnerships	• Donkerhoek Development Committee • Inkomati-Usuthu Catchment Management Agency • Land reform and biodiversity stewardship programme

KEY INTERVENTIONS: ENKANGALA GRASSLANDS SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**MANAGE**
NEW PRIVATE AND COMMUNAL STEWARDSHIP • Expand protected area within landscape using biodiversity stewardship: o Focus on securing areas within the Bivane Dam catchment o Explore opportunities to expand the existing protected environments, specifically the KwaMandlangampisi and Elandsberg protected environments o Develop a proactive biodiversity offset bank for the SWSA linked to mining and renewable sector developments to secure critical habitat and water infrastructure.	**STEWARDSHIP MAINTENANCE – PRIVATE RANGELAND** • Provide stewardship extension support to the KwaMandlangampisi and Elandsberg protected environments. **STEWARDSHIP MAINTENANCE – COMMUNAL RANGELAND** • Support sustainable rangeland initiatives, including activating the Herding 4 Health programme on community land reform sites. **CONSERVATION AGRICULTURAL EXTENSION – COMMERCIAL** • Strengthen regulatory compliance within the agricultural sector by monitoring for illegal ploughing and possibly implementing a moratorium on new ploughing in the SWSA. **MINING ENGAGEMENTS** • Ensure the mining industry's compliance with water regulations and adhering to restrictions on water use licences in the SWSA.

PROTECT: ENKANGALA GRASSLANDS SWSA

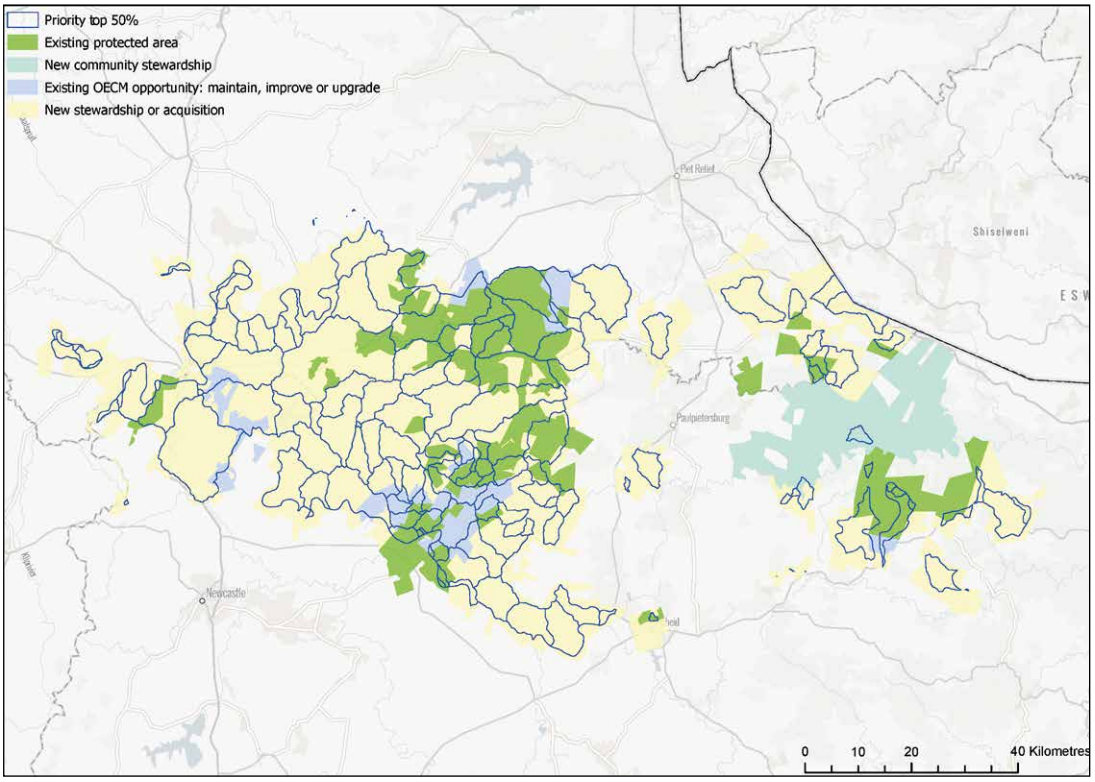


Figure 48: Spatial opportunities for PROTECT interventions in the Enkangala Grasslands SWSA

MANAGE: ENKANGALA GRASSLANDS SWSA

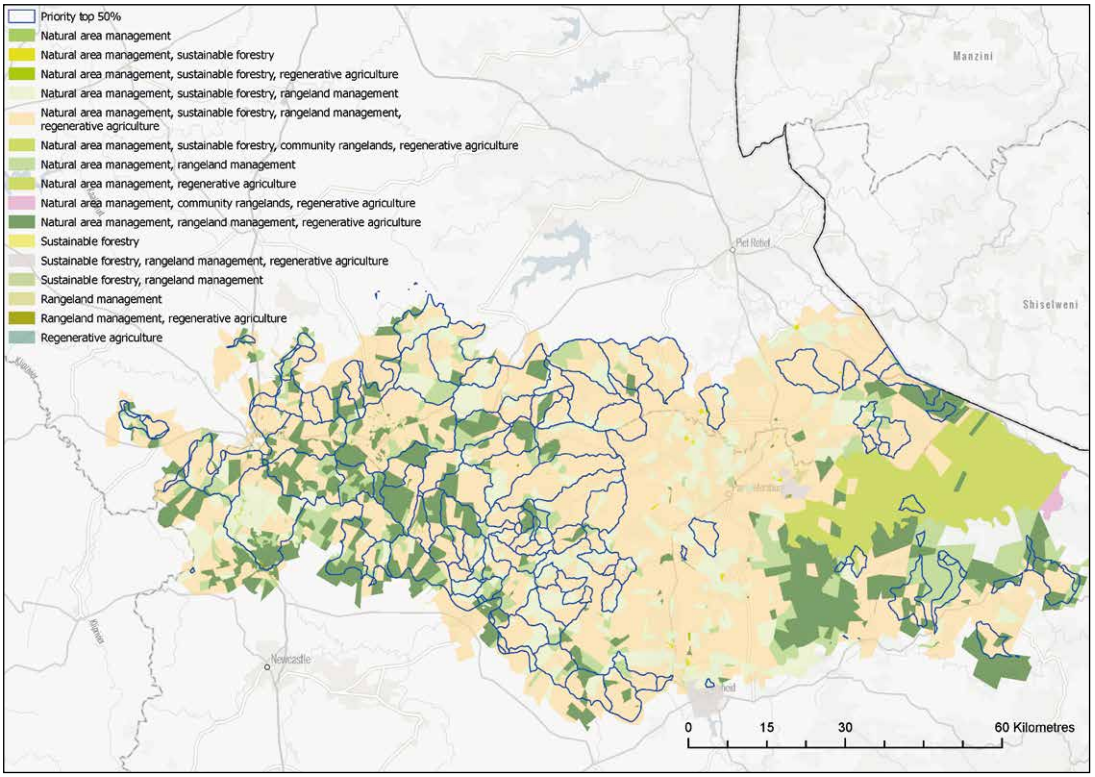


Figure 49: Spatial opportunities for MANAGE interventions in the Enkangala Grasslands SWSA

UPPER VAAL

SWSA size	Area to be prioritised
139 401 ha	71 889 ha

Protected areas	Natural land cover	Degraded land
7,8%	52,1%	47,9%

TOP 50% PRIORITY QUINARIES: UPPER VAAL SWSA

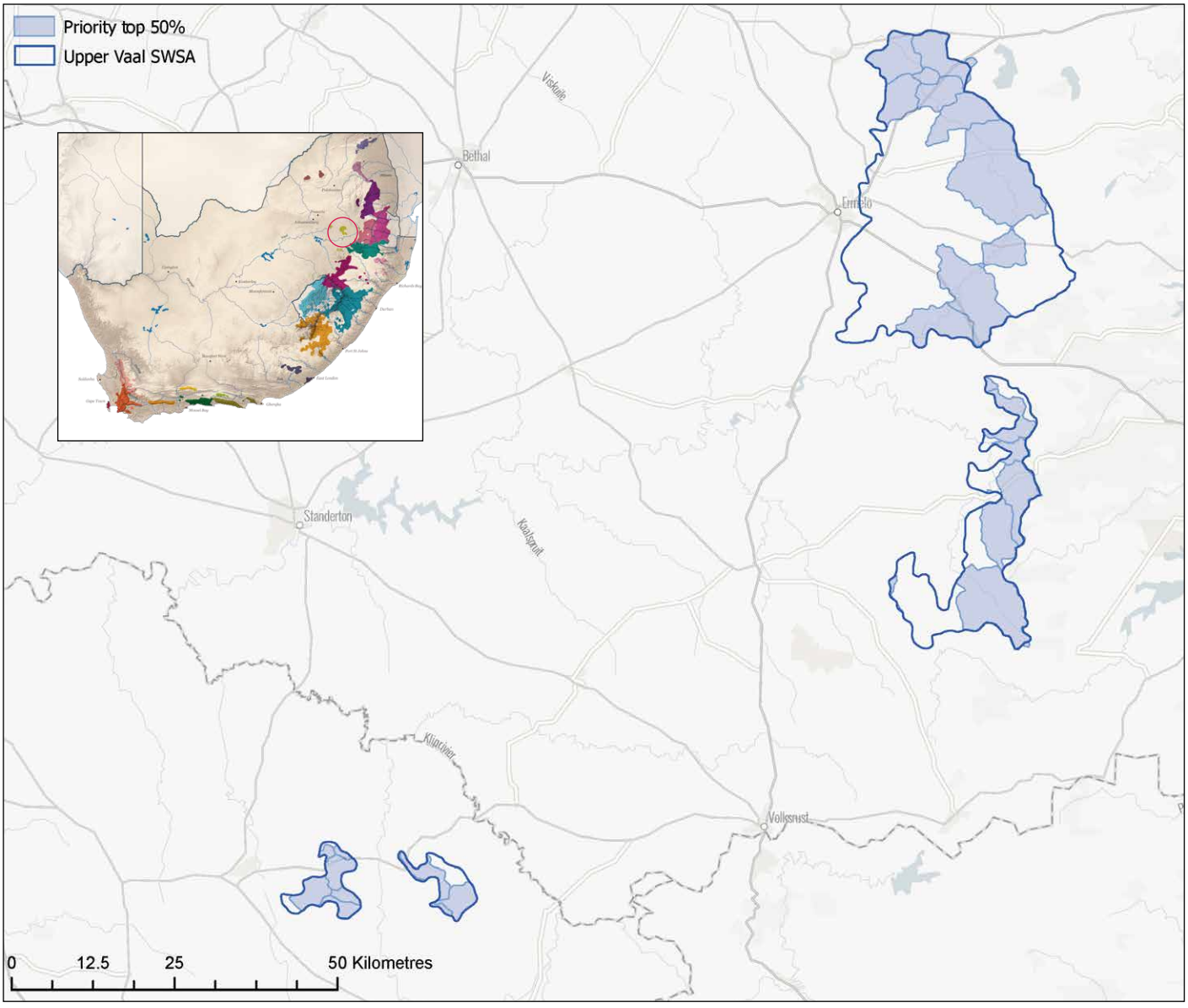


Figure 50: The top 50% prioritised quinaries (blue) in the Upper Vaal SWSA

DOMINANT LAND USE

The Upper Vaal SWSA is located in southern Mpumalanga, southeast of the town of Ermelo, and forms the headwaters of the Vaal River, South Africa's most economically important river system. Dominated by high-altitude grasslands and extensive wetland systems, the SWSA supplies water to the Vaal River, supporting major urban centres, mining, industry, power generation and agriculture, including the Gauteng metropolitan region. The landscape also supports commercial forestry, crop and livestock farming, and it contains ecologically significant grassland and wetland habitats that are essential for maintaining water quality and regulating streamflow. Figure 50 illustrates the spatial extent of the priority top 50% quinaries within the Upper Vaal SWSA.

This SWSA is dominated by commercial agriculture that mainly consists of intensive crop farming, including irrigated lands (almost completely identified as protected agricultural areas). The remaining area consists of high-altitude grasslands and wetlands that are highly fragmented and degraded through agricultural practices.

KEY PARTNERSHIPS

Water management area	• Vaal-Orange
Key water associations	• Upper Vaal Water User Association
Key landholdings	• Farmers co-operatives
Other key partnerships	• Agricultural co-operatives – AFGRI, OVK, VKB Agriculture, NWK Limited • Eskom • Mpumalanga Tourism and Parks Agency

KEY INTERVENTIONS: UPPER VAAL SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
MANAGE	PROTECT
STEWARDSHIP MAINTENANCE – PRIVATE • Support the Chrissiesmeer Protected Environment to improve management outcomes related to water resources. **CONSERVATION AGRICULTURAL EXTENSION – COMMERCIAL** • Encourage the implementation of conservation farming practices across the landscape • Support government officials enforce agricultural laws and ensure compliance relating to ploughing, soil conservation and water use licences.	**NEW PRIVATE AND COMMUNAL STEWARDSHIP** • Expand protected area within landscape using biodiversity stewardship: o Engage private landowners on opportunities to expand the Chrissiesmeer Protected Environment. • Develop a proactive biodiversity offset bank for the SWSA linked to renewable energy and mining developments to secure critical habitat and water infrastructure.

MANAGE: UPPER VAAL SWSA

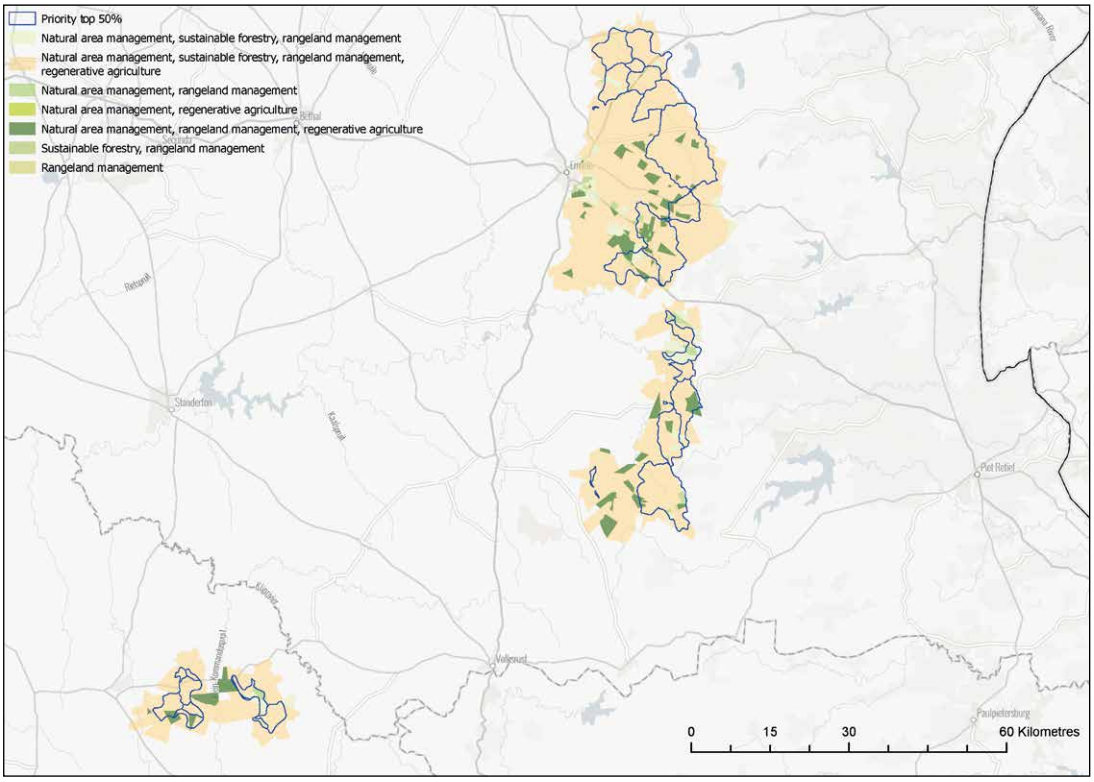


Figure 51: Spatial opportunities for MANAGE interventions in the Upper Vaal SWSA

PROTECT: UPPER VAAL SWSA

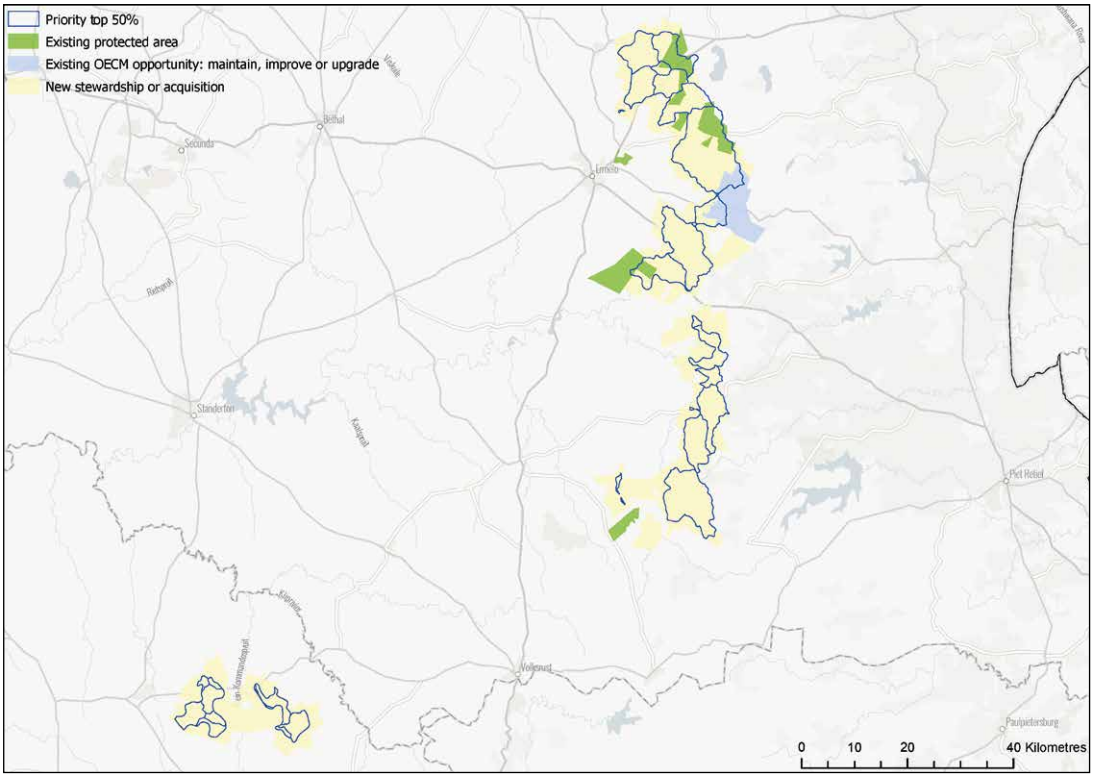


Figure 52: Spatial opportunities for PROTECT interventions in the Upper Vaal SWSA

UPPER USUTHU

SWSA size	Area to be prioritised
539 331 ha	274 336 ha

Protected areas	Natural land cover	Degraded land
7,8%	34,6%	65,4%

TOP 50% PRIORITY QUINARIES: UPPER USUTHU SWSA

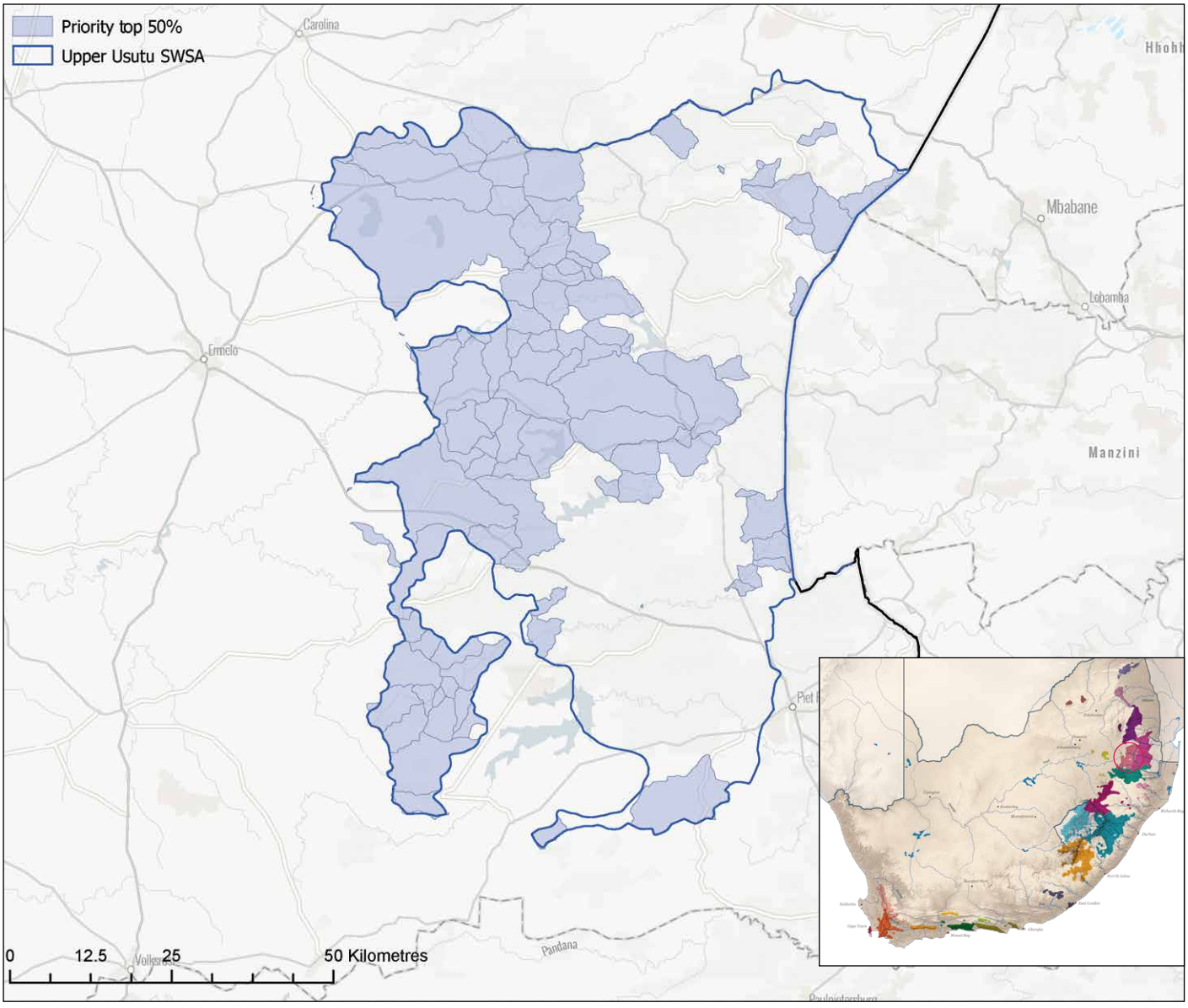


Figure 53: The top 50% prioritised quinaries (blue) in the Upper Usuthu SWSA

DOMINANT LAND USE

The Upper Usuthu SWSA is located in the Mpumalanga province, east of the town of Ermelo. The landscape has high-altitude grasslands, wetlands and dryland crop agriculture, which together play a vital role in regulating water flows and sustaining the headwaters of the Usuthu River system. These intact grassland ecosystems provide important ecosystem services, including water provision, carbon storage and habitat for a range of threatened species. However, the SWSA is also subject to pressures from extensive forestry, agricultural expansion and invasive species. Figure 53 illustrates the spatial extent of the priority top 50% quinaries within the Upper Usuthu SWSA.

This SWSA's land use is dominated by commercial forestry plantations, together with intensive crop agriculture, particularly in the northwestern region of the SWSA. The remaining areas consist of high-altitude grasslands and wetlands in the headwaters of the Usuthu River.

KEY PARTNERSHIPS

Water management area	• Inkomati-Usuthu
Key water associations	• Usuthu Water User Association
Key landholdings	• Mondi South Africa • Sappi Southern Africa • York Timbers Holdings Limited
Other key partnerships	• Mpumalanga Tourism and Parks Agency

KEY INTERVENTIONS: UPPER USUTHU SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
MANAGE	PROTECT
STEWARDSHIP MAINTENANCE – FORESTRY • Use the WWF Biodiversity Risk Filter to prioritise wetland delineation based on water returns • Delineate and better manage water resources and wetlands in forestry areas • Meet auditing requirements in FSC audits for water management within the SWSA. **CONSERVATION AGRICULTURAL EXTENSION – COMMERCIAL** • Encourage conservation farming practices across the landscape to secure water resources • Support government officials to enforce agricultural laws and ensure compliance relating to ploughing, soil conservation and water use licences.	**NEW PRIVATE AND COMMUNAL STEWARDSHIP** • Expand protected area within landscape using biodiversity stewardship: o Engage private landowners on opportunities to expand the Chrissiesmeer Protected Environment. o Develop a proactive biodiversity offset bank for the SWSA linked to mining and renewable sector developments to secure critical habitat and water infrastructure.

MANAGE: UPPER USUTHU SWSA

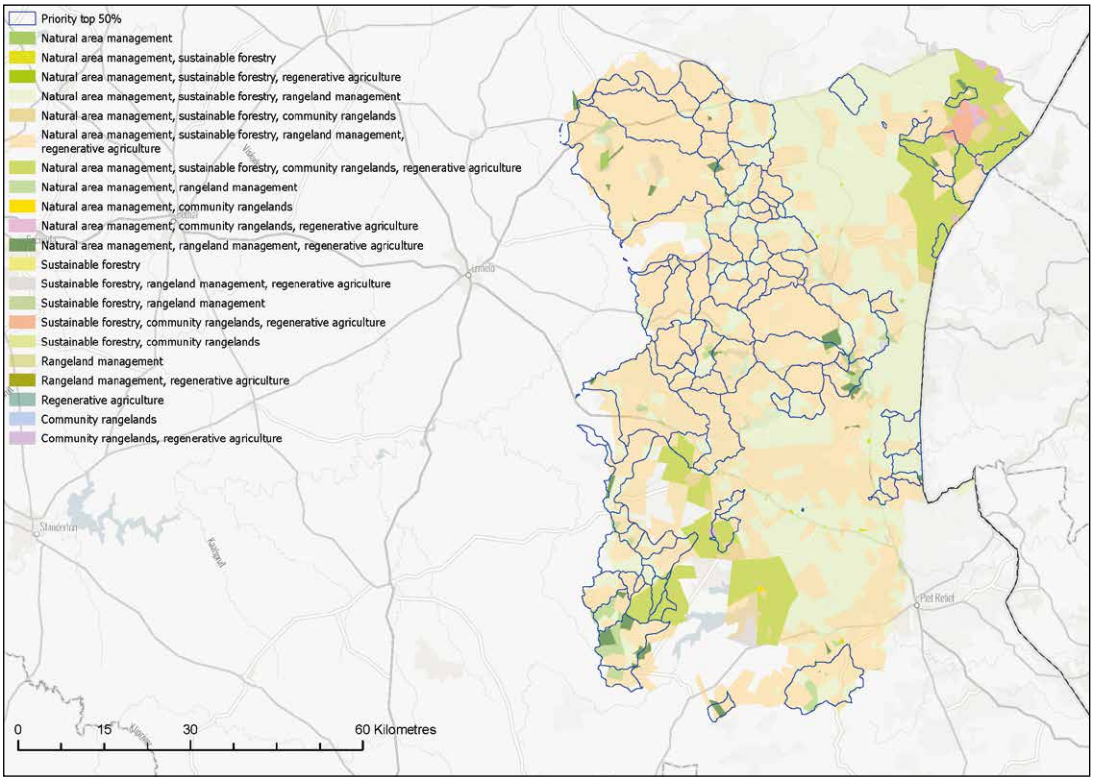


Figure 54: Spatial opportunities for MANAGE interventions in the Upper Usuthu SWSA

PROTECT: UPPER USUTHU SWSA

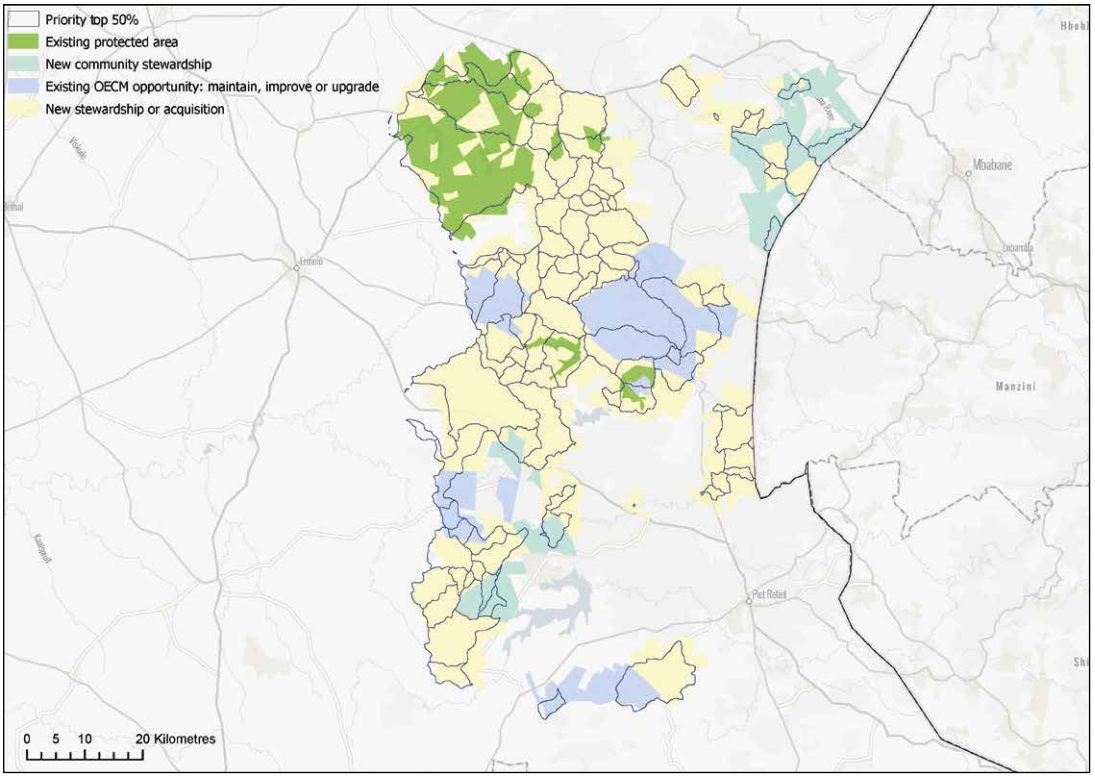


Figure 55: Spatial opportunities for PROTECT interventions in the Upper Usuthu SWSA

There is a need to engage the Department of Mineral and Petroleum Resources on the impacts of mining in the Upper Usuthu SWSA, particularly in sensitive and protected areas. The SWSA would benefit from a transboundary monitoring and diagnostics initiative to improve monitoring stations along the border, undertake diagnostics analyses and encourage data-sharing between South Africa and Eswatini.

MBABANE HILLS

SWSA size	Area to be prioritised
295 783 ha	148 121 ha

Protected areas	Natural land cover	Degraded land
35,3%	57,9%	42,1%

TOP 50% PRIORITY QUINARIES: MBABANE HILLS SWSA

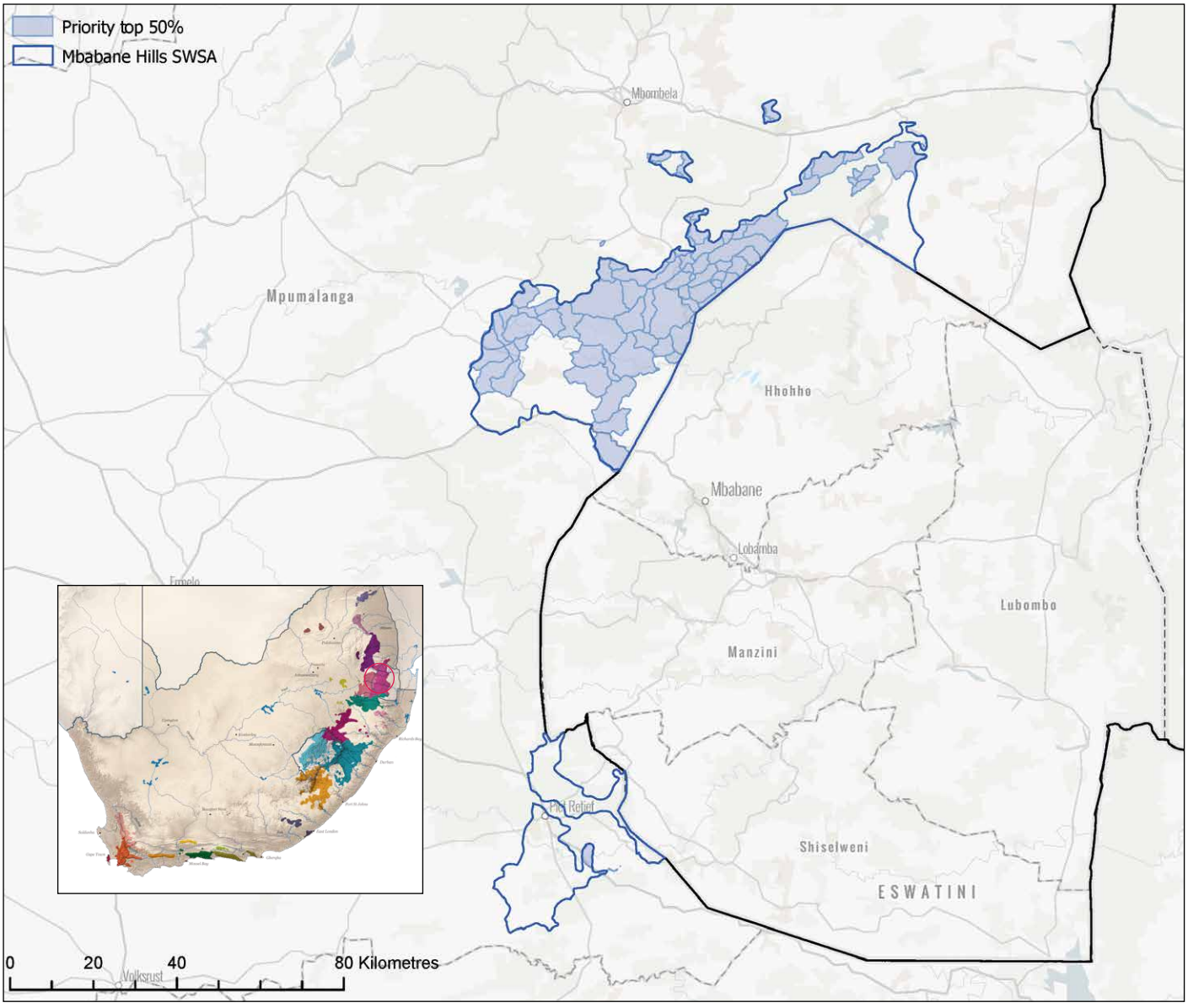


Figure 56: The top 50% prioritised quinaries (blue) in the Mbabane Hills SWSA

DOMINANT LAND USE

The Mbabane Hills SWSA is located in southern Mpumalanga, extending across the international border into Eswatini, where a significant proportion of the SWSA is situated. As a transboundary water source area, the landscape plays a critical role in supplying water to the Komati and Usuthu River systems and supporting downstream communities, agriculture and ecosystems in both countries. Characterised by montane grasslands, indigenous forests, commercial forestry and communal landscapes, the SWSA requires strong cross-border collaboration to ensure the effective protection and sustainable management of its shared water resources. Figure 56 illustrates the spatial extent of the priority top 50% quinaries within the Mbabane Hills SWSA.

This SWSA extends across both South Africa and Eswatini but becomes fragmented into two distinct areas if restricted to just the South African component. The northern section consists of a combination of natural intact mountain grasslands of the Barberton range and commercial forestry, while the southern section is heavily dominated by commercial forestry plantations.

KEY PARTNERSHIPS

Water management area	• Inkomati-Usuthu
Key water associations	• Inkomati Basin Committee • Inkomati Basin Permanent Technical Committee • Inkomati-Usuthu Catchment Management Agency (IUCMA)
Key landholdings	• Mondi South Africa
Other key partnerships	• Care for Wild • Mpumalanga Tourism and Parks Agency

KEY INTERVENTIONS: MBABANE HILLS SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
MANAGE	**PROTECT**
STEWARDSHIP MAINTENANCE – FORESTRY • Support the compulsory licencing compliance programme that the IUCMA is implementing in the Kaap catchment • Strengthen compliance with commercial plantation forestry water-use licence conditions, including the removal of plantations from areas where licences have been reduced, withdrawn or are no longer applicable.	**NEW PRIVATE AND COMMUNAL STEWARDSHIP** • Expand protected area within landscape using biodiversity stewardship: o Explore the development of corridors/linkages between Kruger National Park and Barberton Nature Reserve through the GEF-8 programme. **MANAGEMENT OF EXISTING PROTECTED AREAS** • Improve management of Songimvelo Nature Reserve. **STEWARDSHIP MAINTENANCE – COMMUNAL RANGELANDS** • Support sustainable rangeland management initiatives by partnering with Conservation South Africa and Meat Naturally to expand their community engagements towards securing further rangeland grazing agreements.

MANAGE: MBABANE HILLS SWSA

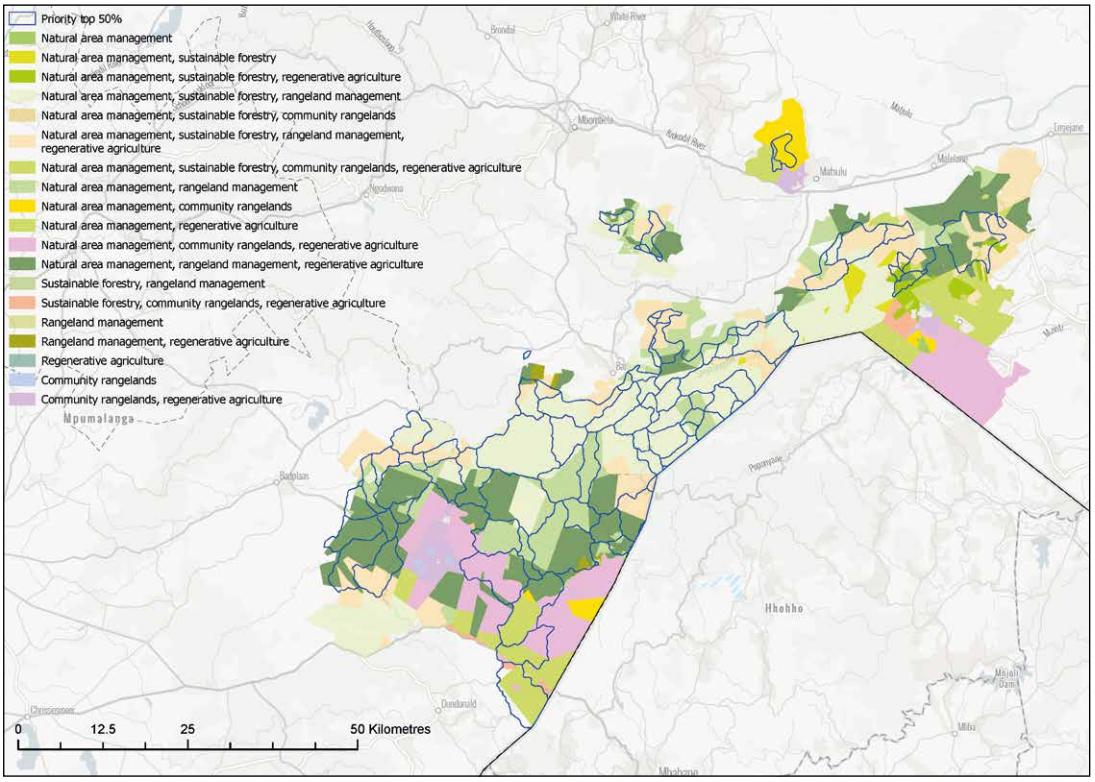


Figure 57: Spatial opportunities for MANAGE interventions in the Mbabane Hills SWSA

PROTECT: MBABANE HILLS SWSA

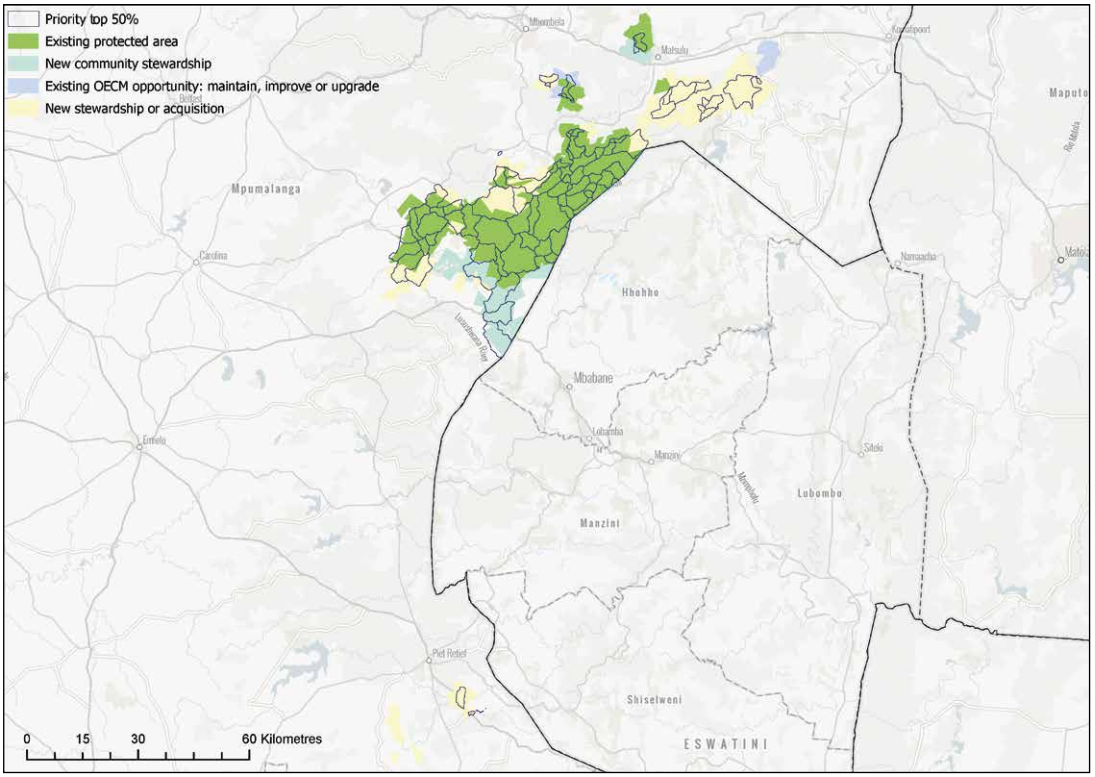


Figure 58: Spatial opportunities for PROTECT interventions in the Mbabane Hills SWSA

Development of a transboundary monitoring and diagnostics programme to improve monitoring stations along the border, improve diagnostics analysis and implement data sharing between South Africa and Eswatini.

MPUMALANGA DRAKENSBERG

SWSA size	Area to be prioritised
837 274 ha	419 486 ha

Protected areas	Natural land cover	Degraded land
14,3%	39,9%	60,1%

TOP 50% PRIORITY QUINARIES: MPUMALANGA DRAKENSBERG SWSA

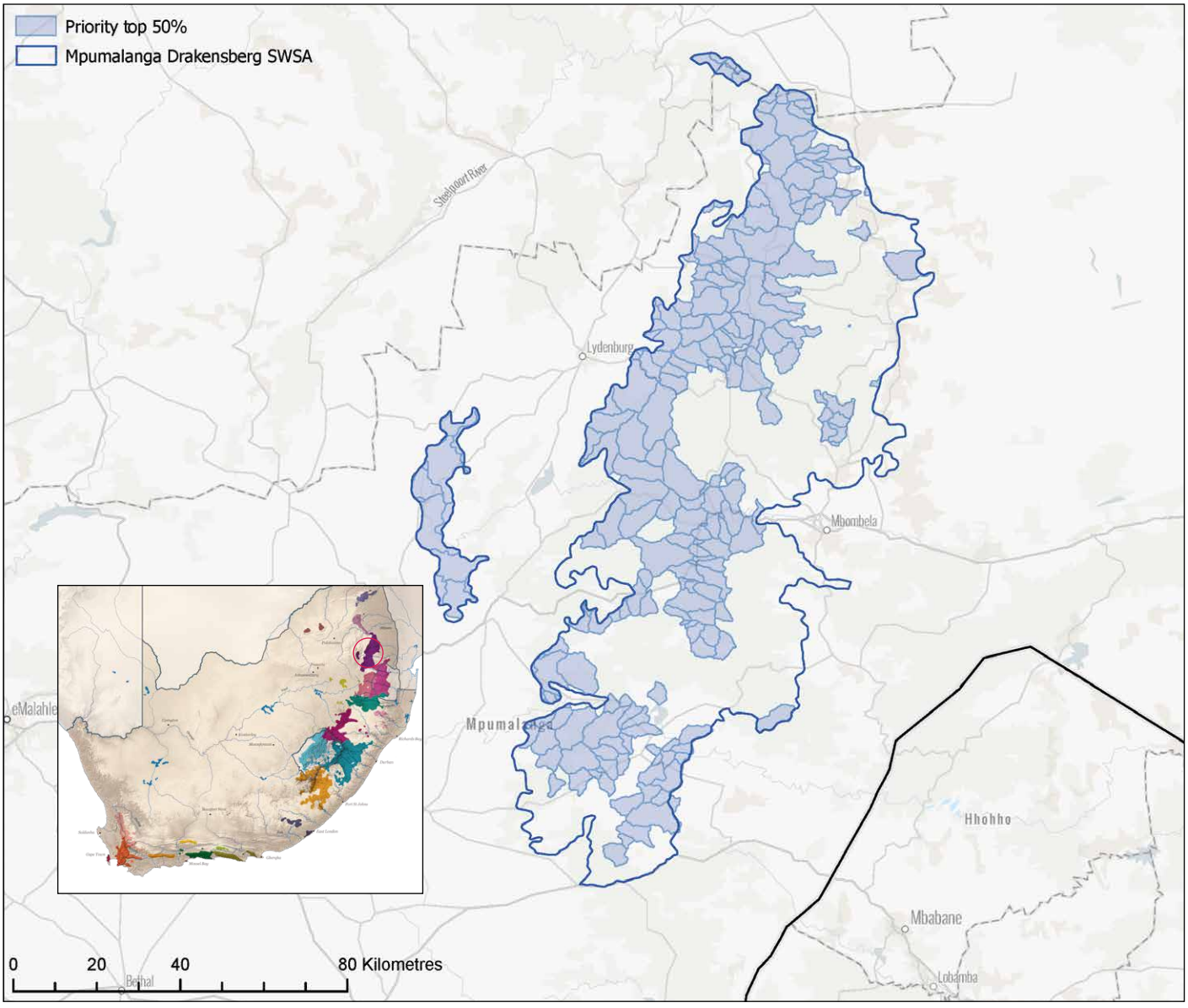


Figure 59: The top 50% prioritised quinaries (blue) in the Mpumalanga Drakensberg SWSA

DOMINANT LAND USE

The Mpumalanga Drakensberg SWSA is located in the Mpumalanga province, extending along the Drakensberg Escarpment in a north-south direction. This SWSA is one of South Africa's most important water-producing landscapes, supplying water to the Olifants, Komati, Crocodile and Inkomati river systems that support downstream municipalities, agriculture, industry, mining and energy production. Characterised by high-altitude grasslands, indigenous forests, wetlands, commercial forestry plantations and protected areas, the landscape also contains exceptional biodiversity and ecological infrastructure that are critical for regulating water flows and maintaining water quality. Figure 59 illustrates the spatial extent of the priority top 50% quinaries within the Mpumalanga Drakensberg SWSA.

This SWSA is dominated by commercial forestry plantations, with smaller contiguous areas of natural intact grassland ecosystems towards the southern regions. The grassland ecosystems are used for livestock grazing and are under pressure from expanding mining applications and renewable energy developments.

KEY PARTNERSHIPS

Water management area	• Inkomati-Usuthu
Key water associations	• Komati Water User Association • Crocodile River irrigation associations
Key landholdings	• Komatiland Forests • MTO Forestry • Sappi Southern Africa • South African Forestry Company Limited • York Timbers Holdings Limited
Other key partnerships	• AWARD • Great Limpopo Transfrontier Conservation Area • Kruger to Canyons Biosphere Region • Mpumalanga Tourism and Parks Agency • The Nature Conservancy

KEY INTERVENTIONS: MPUMALANGA DRAKENSBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**MANAGE**

NEW PRIVATE AND COMMUNAL STEWARDSHIP

- Expand landscape protected area using biodiversity stewardship:
  - Explore opportunities through the SANParks MLL programme funded by the GEF-8 project
  - Engage private landowners on opportunities to expand the Greater Lakenvlei Protected Environment, in partnership with BirdLife South Africa
  - Support private nature reserves to undergo verification and validation to ensure their compliance with NEMPAA
  - Engage forestry companies on opportunities to secure conservation areas within their plantations as a biodiversity stewardship option.
- Develop a proactive biodiversity offset bank for the Steenkampsberg region.

STEWARDSHIP MAINTENANCE – FORESTRY

- Encourage enhanced restrictions on water use licences and requirements through the FSC certification process
- Perform a comprehensive delineation of water resources and wetlands across forestry landholdings.

CONSERVATION AGRICULTURAL EXTENSION – COMMERCIAL

- Support provincial government officials to ensure compliance with water use and management regulations in the sugarcane and macadamia nut sectors.

MONITORING

- Pursue strong opportunities to measure and develop data linked to downstream flows:
  - Determine what is currently being measured (water quality analysis by the Department of Water and Sanitation and IUCMA)
  - Engage South African Environmental Observation Network on multiple data sources from the Sabie-Sand catchment (from source to coast)
  - Conduct more bathymetric surveys within the Blyde River catchment (the last was done in 1999).



PROTECT: MPUMALANGA DRAKENSBERG SWSA

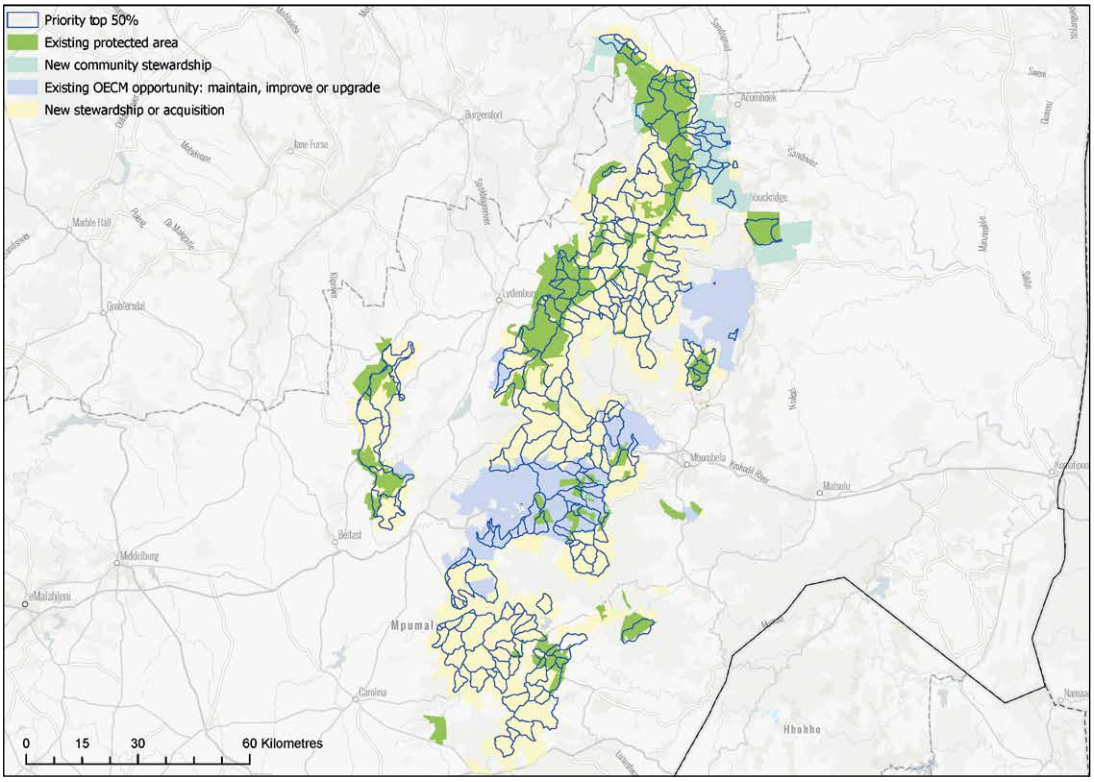


Figure 60: Spatial opportunities for PROTECT interventions in the Mpumalanga Drakensberg SWSA

MANAGE: MPUMALANGA DRAKENSBERG SWSA

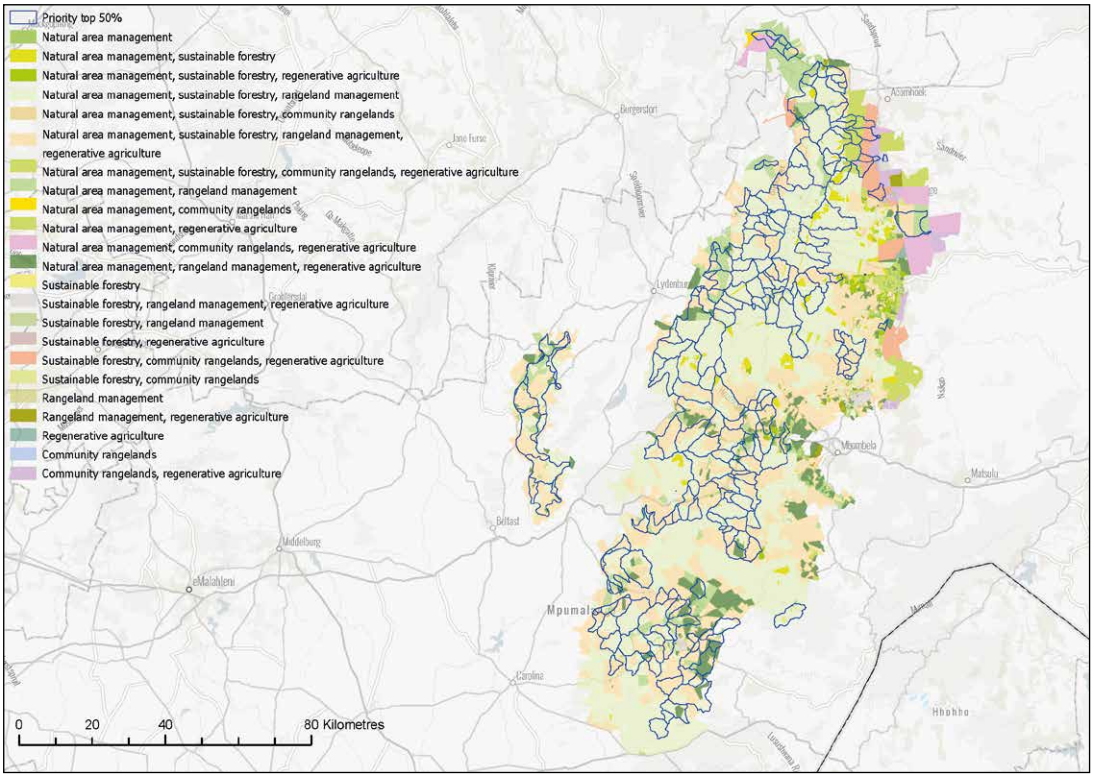


Figure 61: Spatial opportunities for MANAGE interventions in the Mpumalanga Drakensberg SWSA

Governance issues to be addressed in the SWSA, particularly the Olifants catchment, as well as integration of the Green Climate Fund project for the Blyde catchment.

WATERBERG

SWSA size	Area to be prioritised
103 220 ha	52 136 ha

Protected areas	Natural land cover	Degraded land
36,9%	86,7%	13,3%

TOP 50% PRIORITY QUINARIES: WATERBERG SWSA

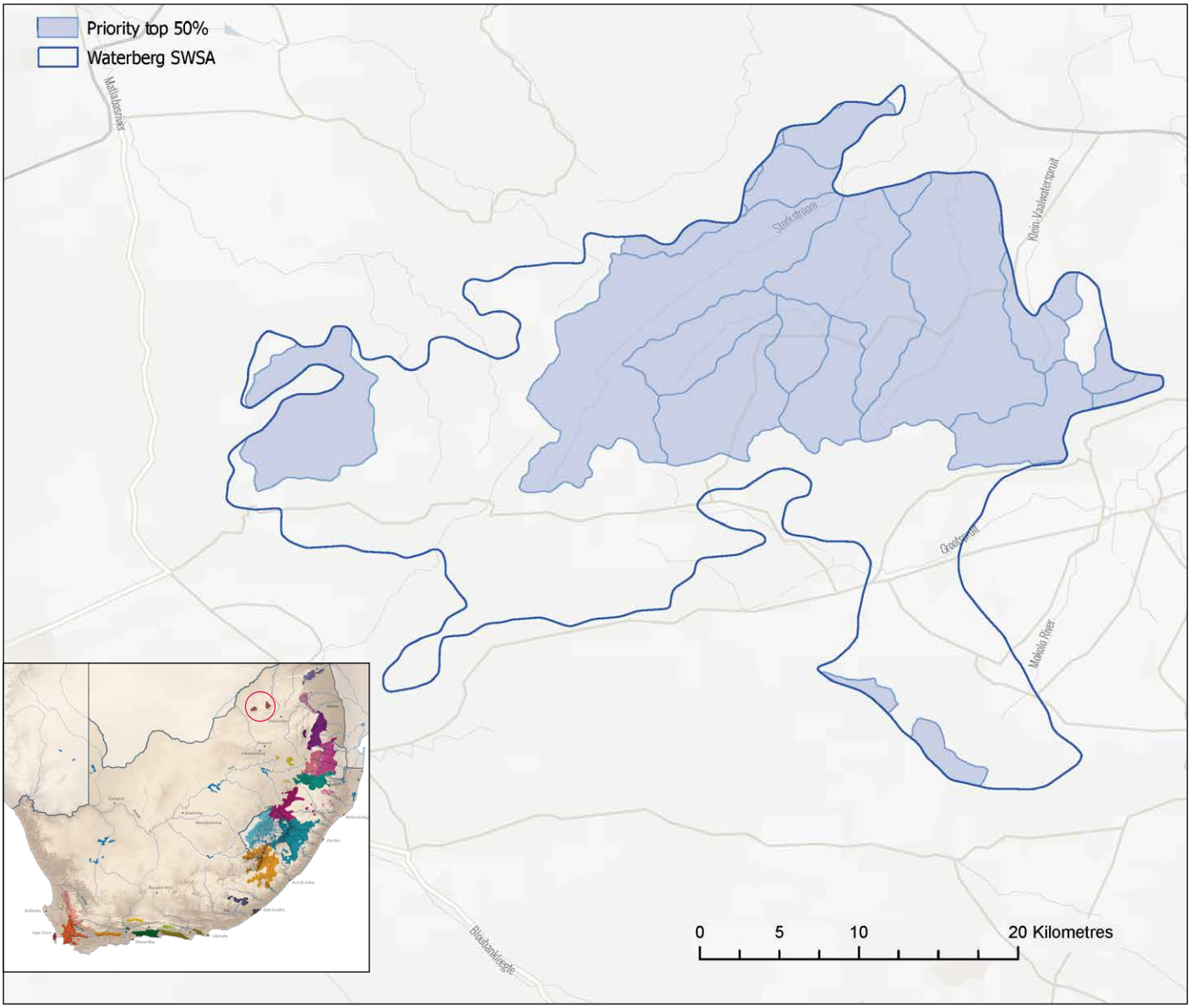


Figure 62: The top 50% prioritised quinaries (blue) in the Waterberg SWSA

DOMINANT LAND USE

The Waterberg SWSA is located in the Limpopo province and is centred around the Waterberg mountain range within the Waterberg Biosphere Reserve, a UNESCO-designated biosphere recognised for its exceptional biodiversity and ecological importance. The SWSA comprises a mosaic of protected areas, private game reserves, commercial agriculture and communal landscapes, and plays a vital role in supplying water to downstream communities, agriculture, mining and industry within the Limpopo River system. The area also supports significant groundwater resources and intact ecological infrastructure that contribute to regional water security and climate resilience. Figure 62 illustrates the spatial extent of the priority top 50% quinaries within the Waterberg SWSA.

This SWSA is dominated by intact natural bushveld vegetation, being one of South Africa's least-transformed SWSAs, with ecological systems remaining largely intact. Land use is focused on formal conservation (SANParks and private entities), wildlife ranching and extensive livestock farming.

KEY PARTNERSHIPS

Water management area	• Limpopo-Olifants
Key water associations	• Lephalala Water User Association (WUA) • Matlabas WUA • Mogalakwena WUA
Key landholdings	• SANParks
Other key partnerships	• District and local municipalities • Endangered Wildlife Trust • SANParks • Waterberg Biosphere Reserve

KEY INTERVENTIONS: WATERBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**MANAGE**
NEW PRIVATE STEWARDSHIP • Expand protected area within landscape using biodiversity stewardship: o Expand Marakele National Park (SANParks) o Identify additional areas to be secured as protected areas (wildlife ranches) within the Waterberg Biosphere Reserve. **MANAGEMENT OF EXISTING PROTECTED AREAS** • Ensure water-related management activities are reflected in the management plans of Marakele National Park and Welgevonden Private Game Reserve and effectively implemented.	**STEWARDSHIP MAINTENANCE – PRIVATE RANGELAND** • Maintain and optimise the region's natural resource base by implementing best-practice management (that is, good fire management, erosion control and maintaining ecological carrying capacities) to deliver large quantities of good-quality water as a means of "diluting" poorer-quality water in the Crocodile and Limpopo rivers.

PROTECT: WATERBERG SWSA

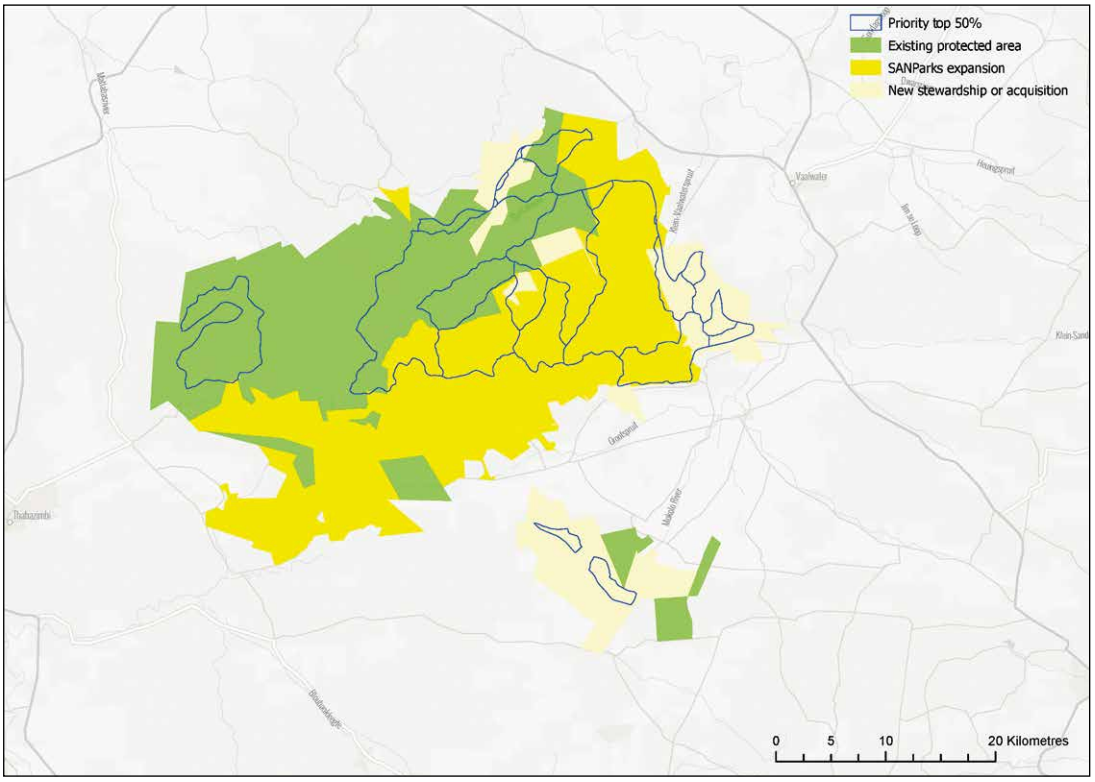


Figure 63: Spatial opportunities for PROTECT interventions in the Waterberg SWSA

MANAGE: WATERBERG SWSA

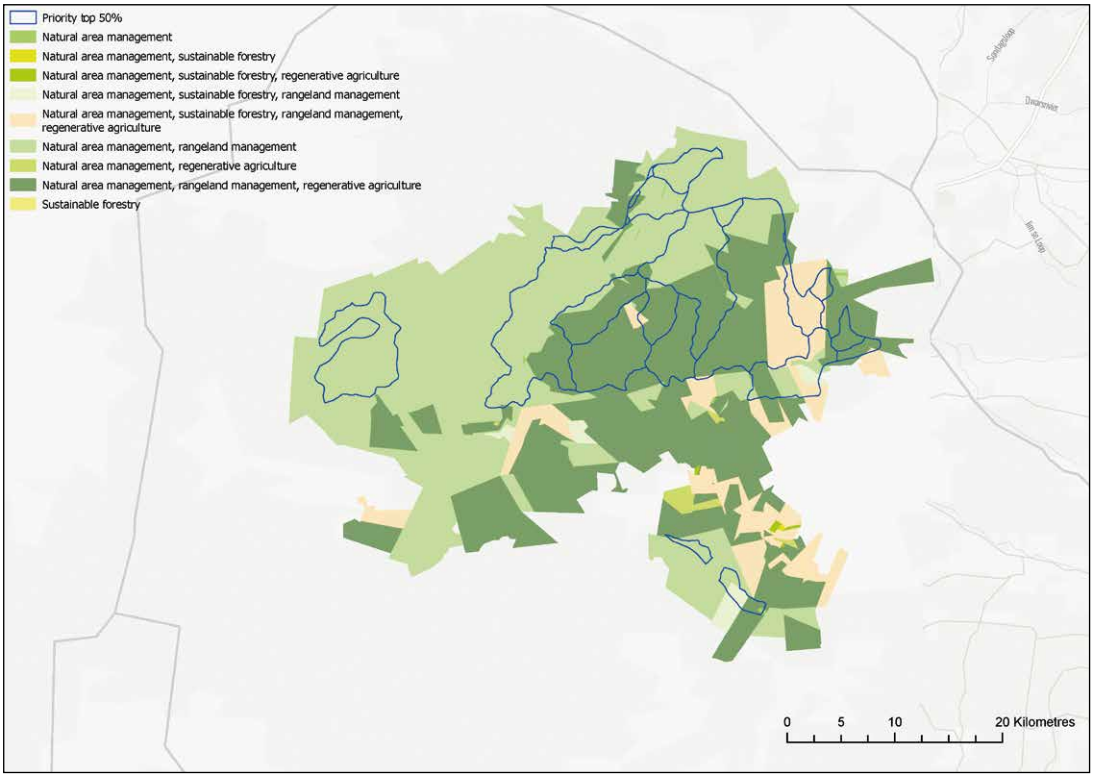


Figure 64: Spatial opportunities for MANAGE interventions in the Waterberg SWSA

WOLKBERG

SWSA size	Area to be prioritised
259 639 ha	130 910 ha

Protected areas	Natural land cover	Degraded land
17,6%	51,9%	48,1%

TOP 50% PRIORITY QUINARIES: WOLKBERG SWSA

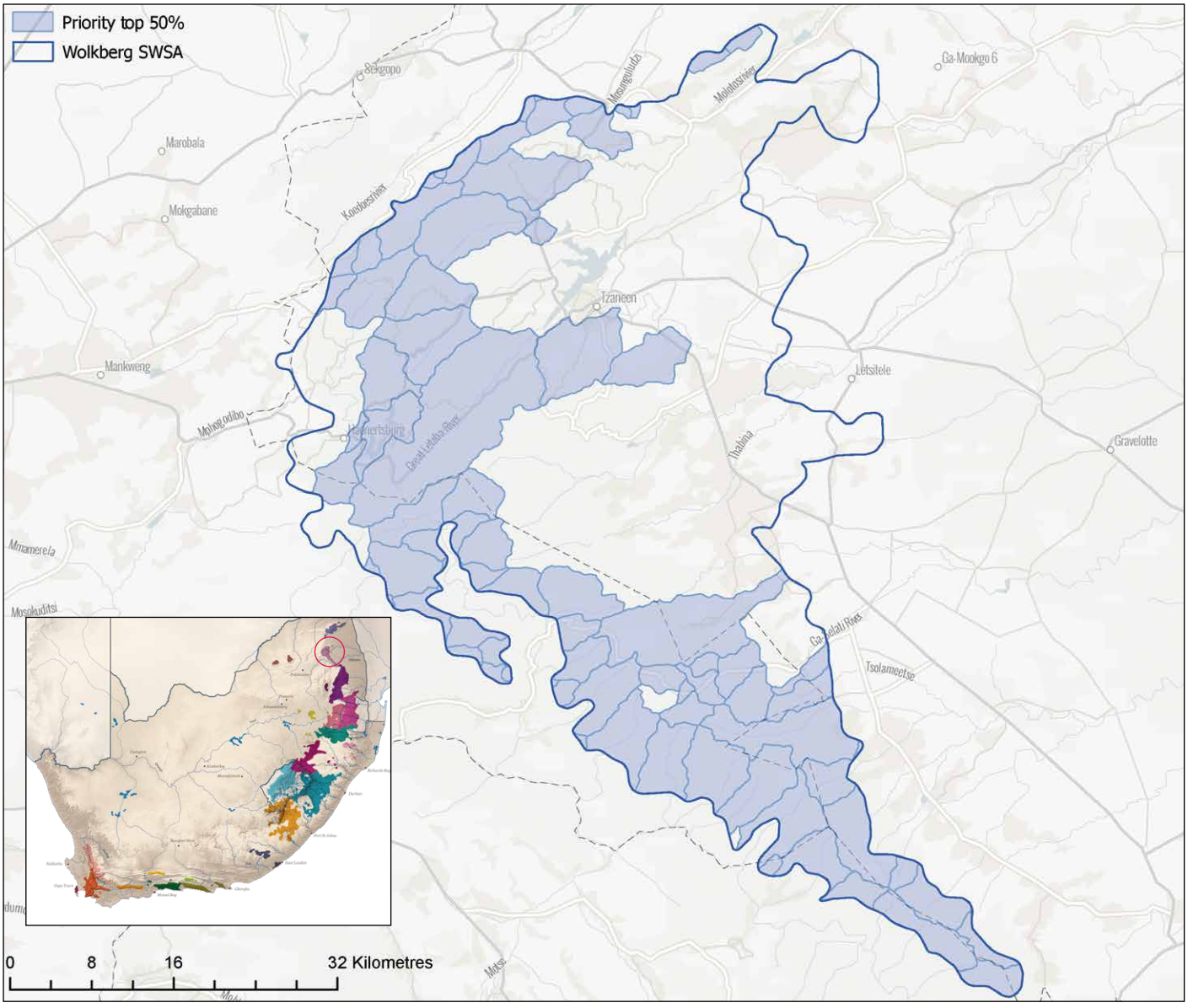


Figure 65: The top 50% prioritised quinaries (blue) in the Wolkberg SWSA

DOMINANT LAND USE

The Wolkberg SWSA is located in the Limpopo province and is centred around the town of Tzaneen, extending across the Wolkberg mountain range. The SWSA is a nationally significant water-producing landscape that supplies water to downstream agricultural areas, rural communities and urban centres within the Limpopo River system. Characterised by montane grasslands, indigenous forests, commercial plantations and extensive commercial agriculture, the area supports both exceptional biodiversity and critical ecosystem services. Figure 65 illustrates the spatial extent of the priority top 50% quinaries within the Wolkberg SWSA.

This SWSA is dominated by highly intensive commercial plantation forestry, with areas of natural grassland and indigenous forest. Significant pressures on water resources as a result of extensive IAP infestations, expanding crop agriculture and general land degradation indicates the need for careful management to protect long-term water security.

KEY PARTNERSHIPS

Water management area	• Limpopo-Olifants
Key water associations	• Letaba Water User Association
Key landholdings	• Irrigation schemes • South African Forestry Company Limited
Other key partnerships	• Conservation South Africa • Endangered Wildlife Trust • Kruger to Canyons Biosphere Region • Limpopo Department of Economic Development, Environment and Tourism

KEY INTERVENTIONS: WOLKBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
RESTORE	**PROTECT**
LANDSCAPE-SCALE RESTORATION • Undertake a coordinated catchment-level intervention to manage the potential negative impacts of plans to raise the wall of Tzaneen Dam, including conducting rehabilitation activities • Implement a landscape-scale IAP clearing programme, linked to a biomass use model, particularly in the Wolkberg Wilderness Area • Develop and implement an integrated plan for managing Sekhukhune area of the Olifants, including the De Hoop Dam.	**NEW PRIVATE AND COMMUNAL STEWARDSHIP** • Expand landscape protected area using biodiversity stewardship: o Explore corridors in the upper Letaba catchment to connect to the Kruger to Canyons Biosphere Region o Connect protected areas across mountain range o Explore OECM opportunities within Kruger to Canyons Biosphere Region. **MANAGEMENT OF EXISTING PROTECTED AREAS** • Support communities to improve the effectiveness of co-management of the Lekgalameetse Nature Reserve and other protected areas managed by the Limpopo Department of Economic Development, Environment and Tourism.

Engage the relevant department regarding the expansion of mining interests (chrome, gold and heavy metals) to account for the SWSA in planning and licences, and explore the opportunity of developing a payment scheme for upper catchment services for Tzaneen Dam.

RESTORE: WOLKBERG SWSA

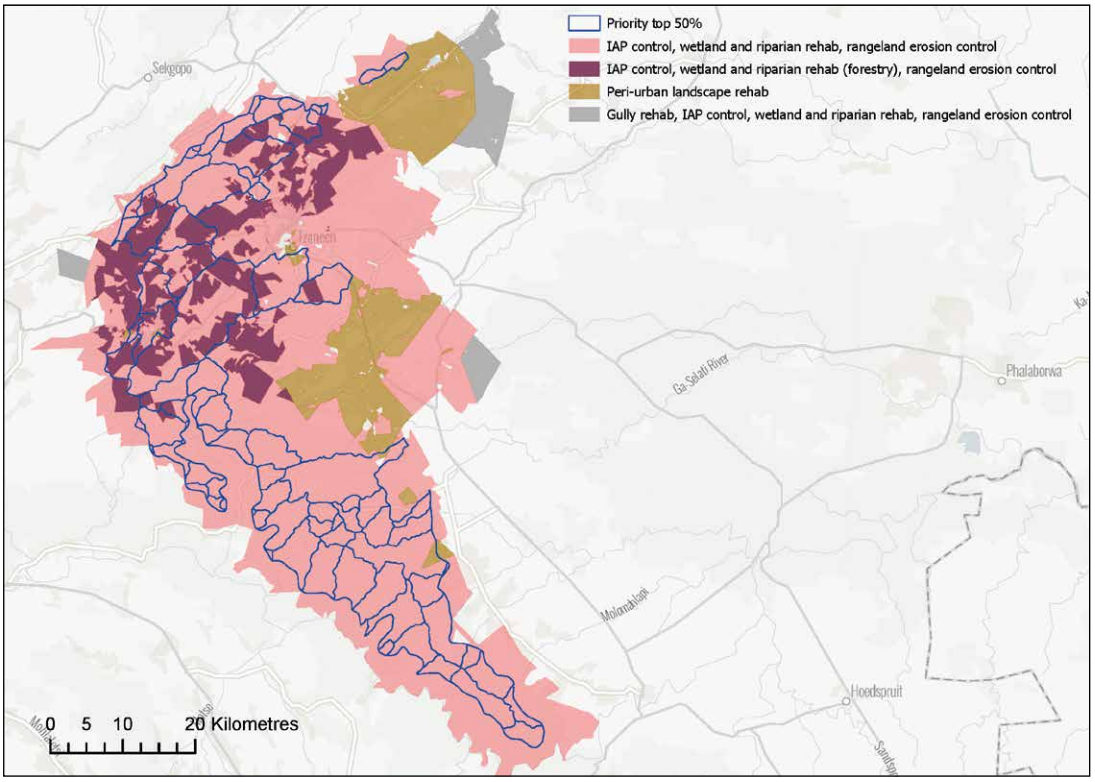


Figure 66: Spatial opportunities for RESTORE interventions in the Wolkberg SWSA

PROTECT: WOLKBERG SWSA

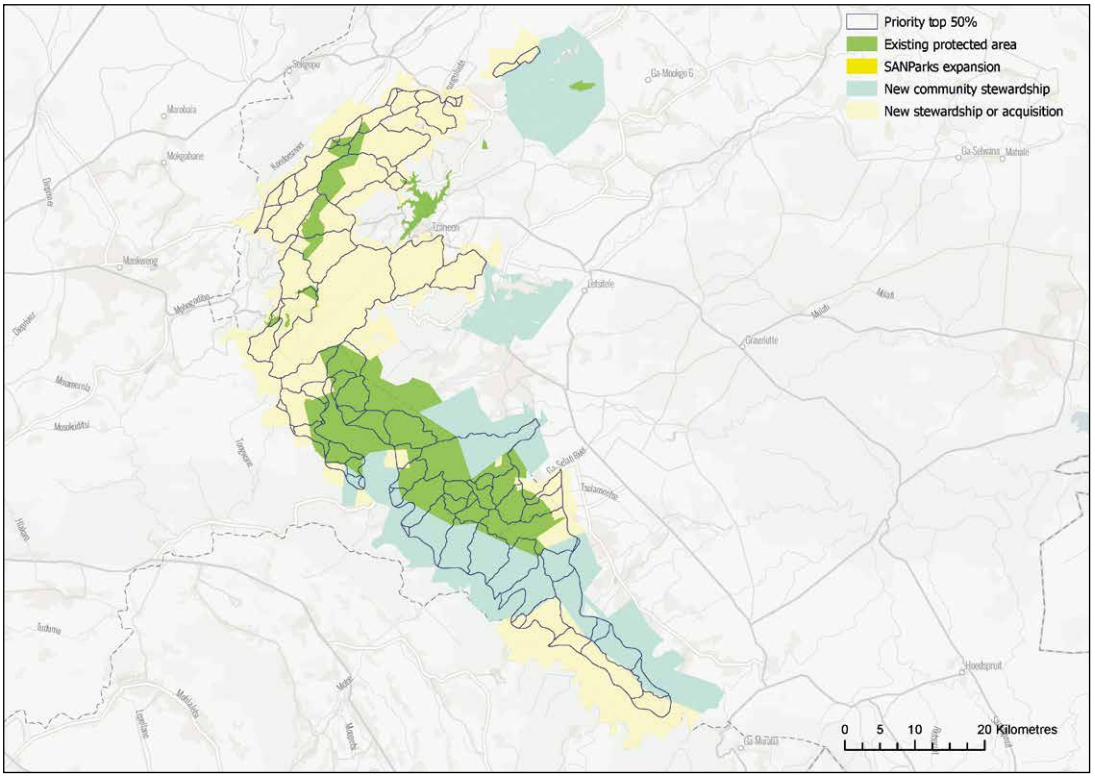


Figure 67: Spatial opportunities for PROTECT interventions in the Wolkberg SWSA

SOUTPANSBERG

SWSA size	Area to be prioritised
234 685 ha	117 747 ha

Protected areas	Natural land cover	Degraded land
18,6%	43,4%	56,6%

TOP 50% PRIORITY QUINARIES: SOUTPANSBERG SWSA

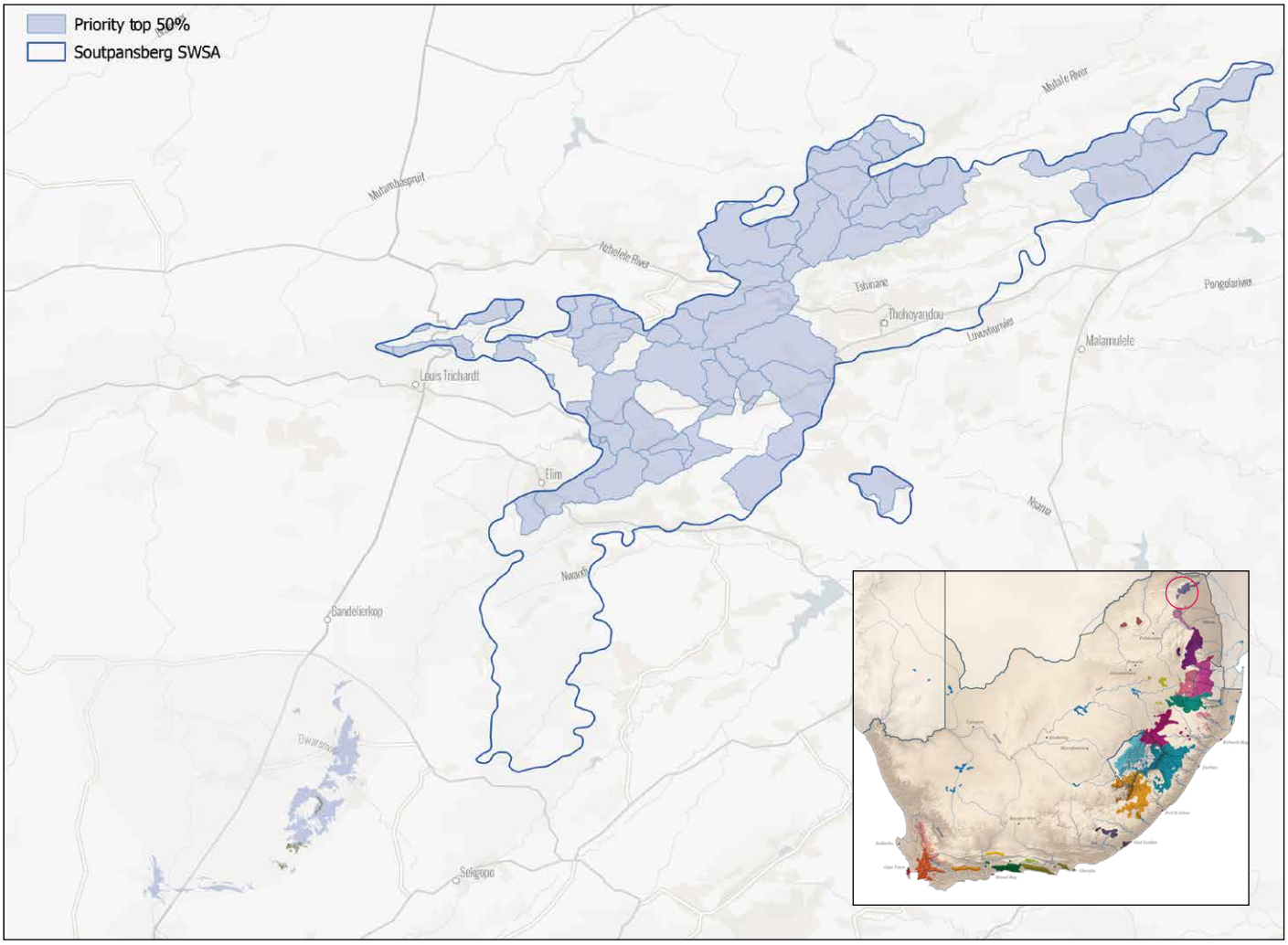


Figure 68: The top 50% prioritised quinaries (blue) in the Soutpansberg SWSA

DOMINANT LAND USE

The Soutpansberg SWSA is in the Limpopo province along the Soutpansberg mountain range, east of Makhado (formerly Louis Trichardt). This SWSA is dominated by a combination of intact natural mountain bushveld areas, together with extensive areas of urban settlement, commercial agriculture and timber plantations. Characterised by mountainous terrain, indigenous forests, woodlands and extensive commercial forestry and agricultural activities, the SWSA is a critical source of water for surrounding rural communities, agriculture and downstream users within the Limpopo River system. Figure 68 highlights the priority top 50% quinaries within the SWSA.

KEY PARTNERSHIPS

Water management area	• Limpopo-Olifants
Key water associations	• Middle Letaba Water User Association
Key landholdings	• Komatiland Forests Limited • Levubu nut and fruit farming in the central focal/ prioritisation areas • South African Forestry Company Limited
Other key partnerships	• Endangered Wildlife Trust • Great Limpopo Transfrontier Conservation Area • Greater Giyani water scheme and inter-basin transfers • Vhembe Biosphere Reserve

KEY INTERVENTIONS: SOUTPANSBERG SWSA

PRIMARY INTERVENTION	SECONDARY INTERVENTION
PROTECT	**MANAGE**

NEW PRIVATE AND COMMUNAL STEWARDSHIP
• Expand protected area within landscape using biodiversity stewardship:
  o Expand the Western Soutpansberg Nature Reserve
  o Expand the Mphaphuli Protected Environment, specifically by supporting traditional leadership structures.
• Explore OECM opportunities within the Vhembe Biosphere Reserve.
	CONSERVATION AGRICULTURAL EXTENSION – COMMERCIAL
	• Encourage improved water-related management through certification schemes for Levubu nut and fruit farms in the priority areas.
	
	STEWARDSHIP MAINTENANCE – NATURAL AND RURAL
	• Support the Mphaphuli Protected Environment and Western Soutpansberg Nature Reserve management forums.

PROTECT: SOUTPANSBERG SWSA

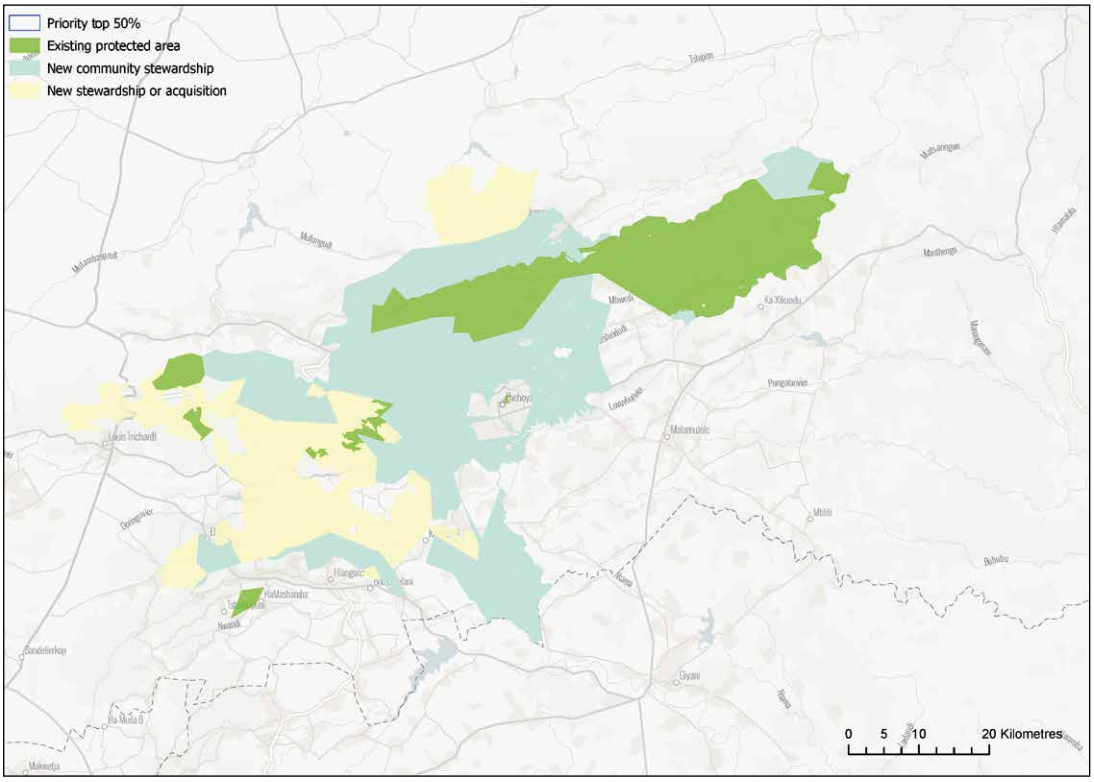


Figure 69: Spatial opportunities for PROTECT interventions in the Soutpansberg SWSA

MANAGE: SOUTPANSBERG SWSA

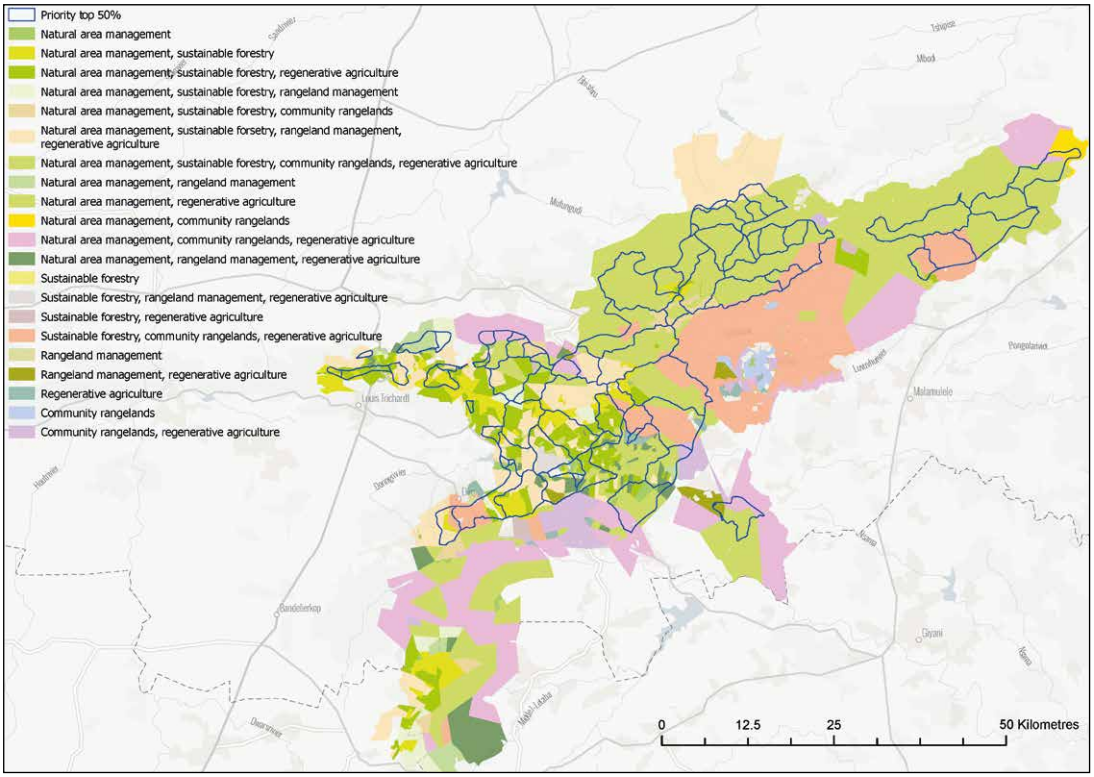


Figure 70: Spatial opportunities for MANAGE interventions in the Soutpansberg SWSA

ASSESSING THE COST OF INTERVENTIONS

Understanding the costs of implementing the proposed impact interventions will support planning and effective implementation.

To estimate the costs of implementing the proposed impact interventions across all SWSAs, a costing framework was developed based on the best available information, in rand per hectare (R/ha), within the broad categories of PROTECT, MANAGE and RESTORE, and applied per custodial unit. Where both meaningful and spatially defined areas were available – in other words, where the specific number of hectares could be determined by using the metrics tabulated earlier or by filtering the data based on other attributes such as tenure – detailed intervention categories and costs were assigned. Table 5, Table 6 and Table 7 summarise the resulting costs.

ONLINE DASHBOARD FOR COSTS

The costs presented are indicative estimates for implementing the proposed interventions. Actual costs will vary depending on site-specific conditions, the scale of interventions and implementation requirements. This informs the total cost per SWSA. **Click here to access the dashboard and costs.**

Table 5: Costing framework for the PROTECT category

COSTED INTERVENTION CATEGORY	INITIAL COST			ONGOING ANNUAL MAINTENANCE (R/ha)	SOURCE OF DATA
	LOW (R/ha)	MEDIUM (R/ha)	HIGH (R/ha)		
New acquisition	15 000	37 500	60 000	2 000	Lowest cost obtained from SANParks, correlated with Waterberg property acquisitions.
New private stewardship	250	475	700	30	Highest cost taken from Amathole and Wolkberg data. Table Mountain SWSA is an outlier.
New corporate stewardship	200	350	500	20	WWF Project Finance for Permanence (PFP) data
New community stewardship	400	650	900	100	WWF PFP data
Management of existing protected areas and other effective area-based conservation measures	500	2 750	5 000	500	Low – would apply to relatively intact SWSAs with low burden. Waterberg costed at R704/ha by SANParks. The Barberton Makhonjwa district was more. Assumes some baseline budget available. High – caters for establishing management presence, managing complex threats (e.g. illegal mining or timber poaching) and law enforcement.

Table 6: Costing framework for the MANAGE category

COSTED INTERVENTION CATEGORY	INITIAL COST		ONGOING ANNUAL MAINTENANCE (R/ha)	SOURCE OF DATA
	LOW / BEST CASE (R/ha)	HIGH / WORST CASE (R/ha)		
Stewardship maintenance – natural and rural	20	100	40	Known costs for stewardship extension obtained from provincial conservation departments and non-governmental organisations.
Stewardship maintenance – forestry	500	1 000	200	Low – assumes large landholdings, easily accessible for extension and compliance monitoring. High – assumes multiple small parcels, multiple owners and significant historic non-compliance. Ongoing – ongoing costs to maintain stewardship staff in field.
Stewardship maintenance – private rangeland	150	500	100	Low – from WWF Project Finance for Permanence data. Assumes large farm sizes and sustainability mindset. High – assumes multiple small farms or mixed farmers.
Stewardship maintenance – community rangeland	200	1 500	200	Low – assumes higher investment required and more engagements than for commercial land. High – assumes complicated scenarios, leadership conflicts, difficult politics or governance challenges. Communal property association in Blyde has cost more than this over the past few years without making progress.
Conservation agriculture extension – permanent and temporary crops (commercial)	200	400	100	Estimate – permanent crops are easier to make compatible with water security but may need greater expertise than temporary, ploughed land interventions.
Conservation agriculture extension – subsistence croplands	300	500	200	Estimate – may need to be higher depending on accessibility and number of farmers.

Table 7: Costing framework for the RESTORE category

COSTED INTERVENTION CATEGORY	INITIAL COST		ONGOING ANNUAL MAINTENANCE (R/ha)	SOURCE OF DATA
	LOW / BEST CASE (R/ha)	HIGH / WORST CASE (R/ha)		
Restoration – urban and peri-urban	2 000	50 000	2 000	Low – little basis to work from. Most interventions in peri-urban settings will be built structures, which are expensive. There is little scope for nature-based solutions (NbS), except promoting "sponge city"-type planning. It is unlikely this can be executed in South Africa's peri-urban landscapes.
IAP control – forestry (0–1%)	50	500	50	High – Western Cape LandCare data indicates an average cost of R25 000/ha across all interventions. This is likely conservative for urban LandCare structures, so figure has been doubled.
IAP control – forestry (1–10%)	2 000	12 000	1 500	
IAP control – forestry (10–50%)	12 000	25 000	5 000	
IAP control – forestry (>50%)	25 000	60 000	10 000	
IAP control – community (0–1%)	50	500	100	Low – based on minimum cost estimate from Table Mountain National Park sweep and Blyde low-density polygons. High – based on the maximum cost per hectare for initial clearing, derived from Wolkberg and Blyde cost estimates for density and pernicious species infestations.
IAP control – community (1–10%)	2 000	12 000	3 000	
IAP control – community (10–50%)	12 000	25 000	6 000	
IAP control – community (>50%)	25 000	60 000	10 000	
IAP control – other (0–1%)	50	500	50	Assumes some landowner co-funding or management support.
IAP control – other (1–10%)	2 000	12 000	1 500	
IAP control – other (10–50%)	12 000	25 000	5 000	
IAP control – other (>50%)	25 000	40 000	10 000	
Gully restoration	5 000	50 000	2 000	High – Western Cape LandCare data indicates an average cost of R25 000/ha across all interventions. This is likely conservative for urban LandCare structures, so figure has been doubled.
Restoration erosion control – rangeland	80	200	80	Low – WWF Project Finance for Permanence data. High – likely a low estimate but causes unnecessary cost inflation if a higher estimate is applied to large rangeland areas.
Wetland and riparian restoration – forestry	1 000	12 000	1 200	Deliberate high estimate to cater for mesic rivers being easily reinfested and such SWSAs often having steep, inaccessible areas that are costly to treat.
Wetland and riparian restoration – other (non-forestry)	2 500	5 000	1 000	Low – this is the average of the Western Cape LandCare programme in recent years. This assumes that a lot of the land has had little done to it and that high-cost items are limited in extent. High – doubles the Western Cape LandCare estimate.

DEVELOPING INTERVENTIONS

The geographic information system (GIS) layers found at the SWSA Plan Dashboard can be used to identify targeted quinary catchments and potential interventions that will have the greatest impact, as well as the likely costs involved.

This SWSA Plan has been developed as an evidence-based opportunity model. Here is an example of how the strategic model can be used for an intervention within a specific SWSA:

1. **Identify targeted catchment/s.**
   Within an individual SWSA, identify properties/areas within the top 50% prioritised quinary catchments (to ensure a prioritised approach).

   Apply the GIS layer below to identify quinary catchments within the prioritised 50% of the SWSA in question.
   SWSA_quins_clipped_ranked_v2604



2. **Identify land use and applicable regulations.**
   Within the targeted property/area, determine the land tenure, land use and applicable regulatory framework.

   Apply the GIS layer below and then format the layer to identify the land use and regulatory framework.
   SWSA_custodial_1ha_v2605

3. **Filter properties for potential interventions.**
   By filtering these properties, the potential interventions applicable to those properties (PROTECT, MANAGE and RESTORE) can be identified.

   Apply the GIS layer below.
   SWSA_custodial_opportunities_v2605

4. **Determine indicative costing.**
   The final reference layer produced by following Steps 1 to 3 allows for the identification of potential interventions, based on land tenure (i.e. private, communal or state), land use (e.g. rangelands, crop agriculture, forestry, etc.) and the regulatory framework. The resulting opportunities can then be applied to a single property cadastre, a cluster of properties or across a landscape, allowing for indicative costing of specific interventions (or a suite of interventions) to be determined, based on the costing framework.

   Apply the GIS layer below.
   SWSA_custodial_costs_v2605

5. **Develop concept note or project proposal.**
   The plan can then be developed into a concept note or project proposal to a funder or donor.

REFERENCES

Clark, D. and Horan, H. 2024. Hydrological quinary catchment boundaries. In: Clark, D., Horan, M.J.C., Kunz, R.P., Schütte, S., Schulze, R.E., Xolo, T., Smithers and J.C. *Development of datasets for multi-scale water resource assessments towards a water secure South Africa*, pp 10–48. Water Research Commission, Pretoria, South Africa (in preparation).

Colvin, C., Haines, I., Nel, J., Le Maitre, D. and Smith, J. 2013. *Defining South Africa's water source areas*. WWF South Africa, Cape Town, South Africa. http://awsassets.wwf.org.za/downloads/wwf_defining_sa_wsa.pdf?_gl=1*1ca527r*_gcl_au*MTI3MzIxMDExMC4xNzgxMDg5OTEyLi0uLS4xNzg0NTM5MDg5LjUyMjU0NjU5NS4xNzg2Njk0OTU5LjE3ODY2OTQ5NTk.*_ga*MTEwMjI1MTQ3OS4xNzE3NDA5MDc1*_ga_BM7PW29HYS*czE3ODg0Mzc0MDIkbzY2JGcwJHQxNzg4NDM3NDAyJGo2MCRsMCRoMA

Department of Forestry, Fisheries and the Environment (DFFE). 2024. *Six strategic water sources secured: Measures allocated to secure the Amathole, Eastern Cape Drakensberg, Maloti Drakensberg, Waterberg, Wolkberg, and Outeniqua strategic water source areas*. DFFE and the South African Biodiversity Institute (SANBI). https://www.dffe.gov.za/bc_strategyframework#actions

DWA (Department of Water Affairs, South Africa). 2013. National Water Resource Strategy, 2 ed., pp 200. DWA, Pretoria, South Africa.

Le Maitre, D.C., Seyler, H., Holland, M., Smith-Adao, L., Nel, J.L., Maherry, A. and Witthüser, K. 2018. *Identification, delineation and importance of the Strategic Water Source Areas of South Africa, Lesotho and Swaziland for surface water and groundwater*. Report No. TT 743/1/18. Water Research Commission, Pretoria, South Africa.

Lötter, M.C. and Le Maitre, D. 2021. *Fine-scale delineation of Strategic Water Source Areas for surface water in South Africa using Empirical Bayesian Kriging Regression Prediction*. SANBI, Pretoria, South Africa. https://opus.sanbi.org/items/fc62c08f-ef24-4dc2-98d2-15b6e856f376

Macfarlane, D.M. and Atkinson, J. 2015. *Working for wetlands: Prioritizing catchments for wetland rehabilitation planning at a national level.* Unpublished report to Working for Wetlands Programme.

Nepfumbada, M.P. 2020. National Water Security Framework for South Africa, 1st ed. Molokwane, P.E. and T.T.C. Dlamini (commissioners). National Planning Commission, Pretoria, South Africa. www.nationalplanningcommission.org.za/assets/Documents/National Water Security Framework Extended.pdf





WWF

We secure and enhance millions of hectares of land and sea for the wellbeing of millions of people.

NATURE IS OUR HOME.

wwf.org.za

© 2026
WWF® and ©1986 Panda Symbol are owned by WWF. All rights reserved.

WWF, 28 rue Mauverney, 1196 Gland, Switzerland. Tel. +41 22 364 9111
CH-550.0.128.920-7

For contact details and further information, please visit our international website at wwf.panda.org