MSUNDUZI SEWER LINE & RIVER POLLUTION MONITORING

A community-based water management approach

OVERVIEW

This project is a partnership with the Msunduzi Local Municipality to assist them in resolving the long-term problem of sewers surcharging into river courses. The partnership started in 2015 and is in its second three-year cycle.

Key Objectives

To continue to reduce sewage leakages, surcharges and other forms of pollution into the Msunduzi River system, contribute towards improved community and river health and an enabling environment for local economic development through open space management.

To assist the Msunduzi Water & Sewage Division with the collection, management and analysis of information regarding the location and status of the sewer line system.

To provide a public awareness and educational programme to change behaviours amongst the public that contribute towards sewage blockages as well as other forms of river pollution (solid waste, industrial pollution) and to secure community support for the monitoring and reporting of leaking, blocked and surcharging sewer systems and illegal solid waste disposal.

FAST FACTS

Location: The Msunduzi region
Duration: 2018-2021
Project Year Cycle: July - June
Client: The Msunduzi Local Municipality
Project Value: R5 000 000
Finance Breakdown: R 1 767 110, R2 500 000, R732 890
(Subject to Budget Cuts)
Project manager: Sanele Vilakazi

SCOPE

Partnership project between Msunduzi Municipality and DUCT to: a) open sewer access, b) monitor, c) map and information system, d) education and awareness, e) promote sports and recreation

OUR ROLE

Year 3 of the project to address sewer pollution of Msunduzi River in municipal area through integrated activities relating to sewer access, monitoring, education and training, sport and recreation

ACHIEVEMENTS

- 65Km of sewer lines cleared and maintained
- 50km of sewer line routes inspected and monitored daily
- Improved rapid response time to incidents reported
- 30+ eco-clubs registered
- 100+ homes visited
- Crime rate lowered

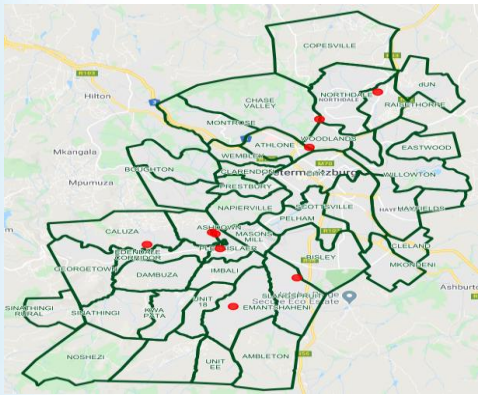

Figure 1: Project Area – Msunduzi Local Municipality

BAYNESPRUIT CONSERVANCY PROJECT

Willowton Oil Rehabilitation Plan

overview

The Baynespruit Conservancy Project aims to

-Improving the water quality and quantity of the Baynespruit and uMngeni Catchment Area

-Rehabilitate the Baynespruit Stream back to its original health in order for It to be used by surrounding communities for recreational activities, irrigation and fishing.

-The Conservancy will build on the principles of water stewardship and aim to address the poor ecological health of the catchment

ACHIEVEMENTS

Ground Truth has developed the Catchment Action Plan

FAST FACTS

Location: Baynespruit catchment
Duration: 6 Months
Client: Willowton Oil Factory
Partners: Willowton Oil Factory, uMnsunduzi Local Municipality, KZNCA, DEA and Industries within the Willowton area.
Project Value: R234 784
DUCT Budget: R177 284
Project Start Date: October 2019
Support Project Manager: Kholosa Magudu & Nkosingithandile Sithole

SCOPE

To improve water quality and quantity of the uMngeni Catchment area, by addressing factors that contribute to poor ecological health of the Baynespruit Stream.

OUR ROLE

DUCT is responsible for developing, implementing and monitoring the River Reach Adoption Programme, in order to ensure that rehabilitation and community participation is happening in the Baynespruit Catchment. We will also be responsible for producing a State-of-Rivers Report which will be reporting and disseminating the river health information.

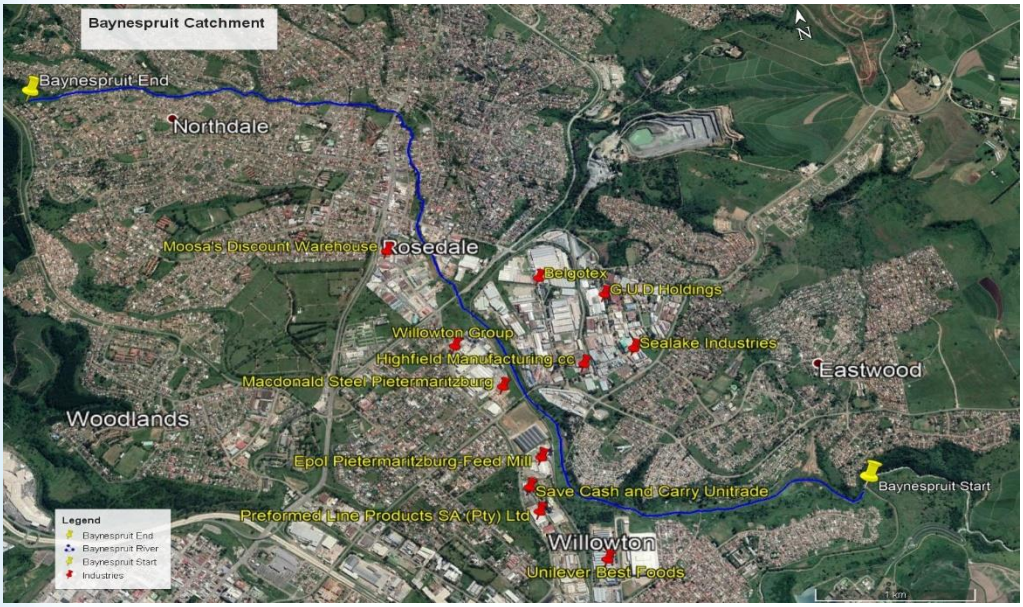

Figure 1: Map of the Baynespruit Catchment and industries around the Baynespruit River

BIDVEST TANK TERMINALS FOREST OFFSET

OVERVIEW

The aim of the BTT forest offset is to enhance the ecological integrity of forest habitat within the Echwebeni Area through active rehabilitation and remediation.

The following objectives were agreed upon for the project:

-Identify management interventions for forest restoration that are specific for the Echwebeni area.

- Ensure that a low risk of failure is built into the Forest Offset Management Plan to guarantee a good return on investment to the value of the BTT forest offset.

- Focus on clearing of invasive alien plants (IAPs) as per the National Environmental Management: Biodiversity Act2 (NEMBA, Act no. 10 of 2004).

Figure 1 & 2: Images from the BTT project.

FAST FACTS

Location: Richards Bay (Echwebeni Area)
Duration: 5 Years
Client: Bidvest Tank Terminals
Partners: EKZNW, TNPA, Mhlathuze Municipality
Project Value: R 1 788 903.03
Project Manager: Lethu Mahlaba

Budget Year 1	Expenditure to date -Year 1	Budget- Year 2	Budget- Year 3	Budget- Year 4	Budget- Year 5
R 497 232,27	R 300 742,23	R 381 475,32	R 407 866,07	R 237 843,23	R 264 486,15
Remaining budget:	R 196 490,04				

SCOPE

Focus on clearing of invasive alien plants, and allow passive ecological succession of the KZN dune forest.

OUR ROLE

Enhance ecological integrity of the Echwebeni Heritage Site by removing alien vegetation.
Promote restoration of the ecological integrity of the KZN dune forest.
Empower and capacitate a local team to continue with the rehabilitation project of the Echwebeni site

ACHIEVEMENTS

Task 1: The project finally managed to get most of the project stakeholders together in Richards Bay for a stakeholders meeting. In this meeting, progress was discussed and the way forward.

Task 2: A local contractor has been identified, who will be trained by DUCT to continue with the restoration implementation work required to achieve the project deliverables.

Task 3: Alien clearing is still in progress and 10.6 hectares cleared in management unit 3. The project will continue with clearing management unit 1 as required by the rehabilitation plan

THE DARVILL-MSUNDUZI GREEN CORRIDOR PROJECT

ADOPT A RIVER PROJECT

FAST FACTS

Location: Darvill Loop
Duration: Five years (Start date 1 Feb 2018- End date July 31 2023)
Client: Umgeni Water
Partners: Umgeni Water
Project Value: Five Million
DUCT Budget: One Million Rand each year for a period of 5 years
Project Manager: Lethu Mahlaba

SCOPE

The main objectives of the Darvill Msunduzi Green Corridor / "Adopt a River" sub-project is to promote the revitalization of **7,3 km** of the Darvill loop Green Corridor by employing and training 10 unemployed people, predominantly youth and women to provide integrated eco systems services on the proposed section/site including alien plant clearance, solid waste removal and recycling, river bank restoration, replanting and community engagement and education within the framework of establishing and incubating a social enterprise (Cooperative, NPO, Sole Proprietor, Pty Ltd) with the capacity to become a sustainable local environmental services agency by the end of the project period.

OUR ROLE

- Alien vegetation clearing;
- Re-planting of indigenous vegetation where necessary;
- Collect solid waste along river banks;
- Soil erosion control;
- Community engagement;
- Providing both institutional and managerial capacity for the revitalization, community development and capacity building outputs of the initiative.

FIGURE 2: Project Area

ACHIEVEMENTS

- **Alien clearing year 2 target: 2km. Actual distance cleared: 3km (Completed).**
- **Company Registration completed (Nandisa Ezemvelo Environmental Services).**
- **Required ecosystems implementation work trainings complete.**
- **Installation of Rolled Erosion Control Products (RECP's).**
- **Number of hectares cleared: Target 80 hectares. 55 hectares cleared to date in two years.**
- **Community engagement and support was achieved. Enviro-Champs formed a good support structure to the Sobantu Farmers association.**

Figure 1: Andile installing pegs on the RECP's that prevents soil erosion

DEA GROEN SEBENZA

FAST FACTS

Location:	Province:	KwaZulu Natal
	District/Metro region:	uMgungundlovu
	Municipality/Metro region:	Umsunduzi
Duration:	3 years: 01/04/2019 - 31/03/2022	
Client:	DEA NRM/EPWP	
Partners:	Ground Truth, Umgeni Resilience Project (URP), SAPPI	
Project Manager:	Tembeka Dambuza	
Project Value:	R9 000 000	

	Year 1		Year 2	Year 3
Budget	**Budget**	**Expenditure**	R2 290 965.00	R3 253 471.00
Budget	R2 109 307,99	R1 997 511,8	R2,290,965.00	
Number of interns	14		12	12
Tertiary studies	7		8	6
Vocational training	0		1	1

ACHIEVEMENTS

- 12 interns still with DUCT
- 2 mentors and 6-line managers directly support the interns
- All interns have been working on individual projects that will add value to DUCT

Figure 1 & 2 Some Groen Sebenza interns

SCOPE

To enable and empower youth, to undertake Community Based NRM Projects that will feature an institutional framework that DUCT has developed and that is characterized by a committed local community partner organisation in four localities in the uMngeni Catchment

a) Greater Edendale Area
b) Vulindlela Rural Area
c) Mpophomeni

OUR ROLE

Since this is a capacity development programme, DUCT's role is to support the growth and development of the interns through:

1. Supporting study pathways within Natural Resource Management (NRM)including, formal tertiary studies, practical field experience, office skills, life skills and vocational skills
2. Support individual NRM projects that augment the ability of DUCT's other projects to achieve their desired outcomes and outputs
   - 7 projects have been identified
3. Encouraging involvement and active participation in community ecological education, awareness and action for the improved understanding of eco-systems functioning
4. Providing an opportunity to be part of an office environment,

Our role is to identify and create opportunities for the young people not only to contribute meaningfully to DUCTs work but to also grow personally. This has enabled DUCT to learn and amend some processes as well.

MSUNDUZI AND UMNGENI RIVER HEALTH PROJECT

LAND USER INCENTIVE PROGRAMME

OVERVIEW

The LUI Project intend to:

-enhance the integrity of the ecological infrastructure through alleviating the impact of alien and invasive plant species.

-improve the protection, rehabilitation and sustainable use of wetlands through the enhancement of awareness throughout the areas of operations

DUCT Team clearing at NCT.

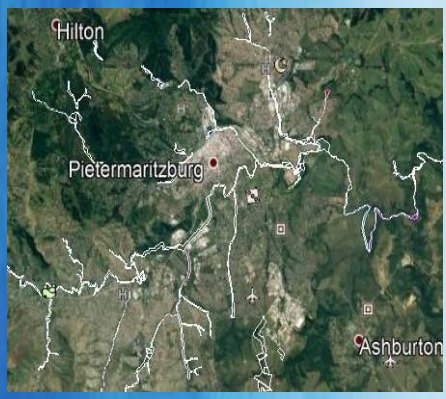

Figure 2- project area

FAST FACTS

Location: Msunduzi and Umgeni Catchment
Duration: 3 years (1 April 2018 to 31 March 2021)
Client: Department of Environmental Affairs
Partners: Natal Fly Fishers
Project Value: R 27 060 600
DUCT Budget: Year 3 – R 9 550 600
Project Team: Sithembiso, Hlengiwe, Mashudu, Larette, Phakamani, Sphamandla, Luyanda, Dennis, Ntinga, Sam, Lethu and all team supervisors.

SCOPE

Improve the ecological health of the uMsunduzi-uMngeni River System i.e. control of alien plant infestations.

OUR ROLE

To provide the knowledge and tools to enable local communities to take ownership and responsibility for the condition of their environment.

ACHIEVEMENTS

Annual Targets

Annual targets for year 3, 40 451 person days and 3425 ha to clear. 8 waterweeds contractors and 12 DUCT contractors.

	YR1		YR 2		Y3
Budget	Target	Actual	Target	Actual	Target
	8 500 000	5 022 094	9 010 000	8 436 101	9 550 600
p/days	39 692	21 291	40 069	37 949	40 451
Ha's	3911	2111	3824	3606	3425

ICT POLLUTION MONITORING & MANAGEMENT SYSTEM

Utilising technology to assist municipal service delivery

OVERVIEW

Faecal pollution has serious implications on the environment and in particular water quality which in turn affects human health. In addition, poor management of solid waste invariably increases faecal pollution, as an increasing portion of solid waste is comprised of soiled disposable nappies, and these and other types of solid waste end up in pit latrines and sewers, which negatively impacts the functioning of both on and off-site sanitation systems. The two forms of pollution (solid waste and faecal waste) are thus closely linked. The programme will develop apps and use smart phones and other IT hardware to report, map, initiate and monitor responses to pollution incidents

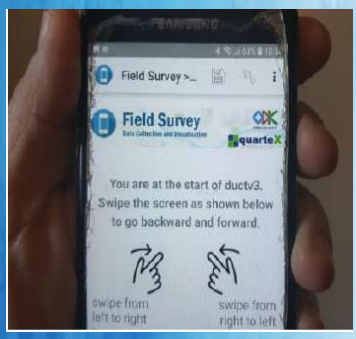

Figure 1: The field Survey Mobile app Used to Report Leaking Sewers

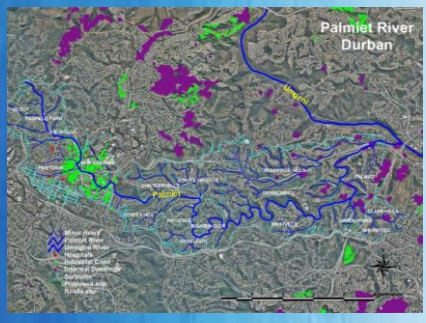

Figure 2: Map of GCA Work Area

FAST FACTS

Location:	eThekwini (Palmiet Catchment)
Duration:	20-months (September 2019 – April 2021). Started February 2020
Client:	Grand Challenge Account
Partners:	Khanyisa Projects
Project Value:	$100,000 (R726 306,03 – current year budget)
DUCT Budget:	$50 000

Project manager: Sanele Vilakazi

SCOPE

To develop and test a pollution monitoring and management system which would empower community-based Pollution Control Officers (PCOs) from poor communities to effectively drive change in municipal responsiveness to incidents of pollution

- Engagement with the selected municipality to ensure ownership of the project
- Development of reporting and response apps and background data visualisation software
- Selection and training of community-based Pollution Control Officers and training in use of App1.
- Training of response teams (e.g. sewer leak repair and solid waste collection teams) in use of App2
- Automatic analysis and reporting to allow for planned/strategic interventions
- Awareness and leadership training aimed at increasing priority given to pollution reduction
- 8-month trial in a catchment area of a municipality
- Research by a respected academic institution

OUR ROLE

- Employ community pollution control officers
- Train officers on the use of the app
- Manage officers on the ground
- Project Management and administration

ACHIEVEMENTS

- Planning / Start Up - Completed
- Draft Implementation Plan – In Progress
- Stakeholder Engagement - Initiated

KEEP CAMPSDRIFT CLEAN

FAST FACTS

Location: Camps Drift Canal

Duration: 1 year

Client: Industries along the Duzi River

Project manager: Portia Vilakazi

Partners: Campsdrift industries

Project Value: R 60 000,00/year

DUCT Budget: R23000

OVERVIEW

The Duzi uMngeni Conservation Trust (DUCT) is a non-profit organization that is committed to improving the environmental health of the uMsunduzi and uMngeni Rivers. Duct was established in 2005 by a Pietermaritzburg group increasingly concerned about the deteriorating condition of the uMsunduzi River and lack of government action to conserve the critical part of our natural heritage.

Among its other activities, since March 2020 DUCT in partnership with Camps Drift Industries has been funding a two Person team that works three days a week in the Camps Drift area, between the Upper Weir and Ernie Pearce Weir.

The team focuses on removing solid waste and Invasive Plants from the Drift and its banks.

SCOPE

The project Manages a two-person team that focuses on revitalizing degraded areas and bringing them back to their pristine condition through the removal of alien plants, solid waste and the planting of indigenous plants. Some of the activities that the project aims at achieving is the refurbishment of DUCT bins on site, engaging with local industries and the upcycling of collected waste material.

OUR ROLE

Since March 2020 DUCT has been in partnership with Campsdrift industries to fund a two Person team that works three days a week In the Camps Drift area, between the upper Weir and Ernie Pearce Weir. The team Focuses on Grass cutting, scoffing, removing solid waste and invasive Plants from the drift and its banks (along with the planting of indigenous plants).

ACHIEVEMENTS

Since the project begun in the month of march, 250 black bin bags of solid waste have been collected. Measures are in place for bin refurbishments.

Figure 1 and 2: Project Area – Campsdrift

PPPs AS A MECHANISM FOR INTEGRATED CATCHMENT MANAGEMENT

Developing a business plan

FAST FACTS

Location:	uMngeni Catchment
Duration:	2 years (Jan 2020 – Dec 2021)
Client:	P4G
Partners:	SANBI, Conservation Outcomes, SAPPI
Project Value:	$100 000
DUCT Budget:	$ 30 000

Project manager: Faye Brownell

overview

The overarching goal of the uMngeni Ecological Infrastructure Partnership (UEIP) is to harness the potential of intact, functioning ecosystems to complement built infrastructure in an integrated approach to managing water resources and water security (SDG 6) in the greater uMngeni River catchment in the province of KwaZulu-Natal in South Africa. The UEIP, has been in existence for 5 years as an alliance of 24 members (public, private, and civil society stakeholders) bound by a Memorandum of Understanding. The partnership has been very successful in building networks, sharing information, undertaking research, and developing a shared vision and set of priorities for the catchment. However, the partnership is not a legal entity, and is not self-funding, and in order for it to become truly effective, and sustainable, it needs to now establish a commercially viable entity that can manage investments, and implement projects.

The start up phase will involve the preparation/gearing up for phase 2 where commercial entities are brought into the partnership in the form of PPP contracts for the improvement of water and wastewater services delivery.

SCOPE

1. Advance policy/regulatory approvals
2. Stakeholder outreach and engagement
   - Knowledge sharing on lessons on combined grey-green infrastructure approaches to water sector investment
   - Understanding the value of these types of natural infrastructure – natural capital accounting
3. Creation of a business plan to operate the fund once established (including initial plan to attract sources of blended finance)
4. Set up a best-practice institutional arrangement for partnership oversight

OUR ROLE

Contract liaison with P4G
Project management and oversight
Financial management
Administration
Involvement in key strategic meetings, events and networking

ACHIEVEMENTS

Figure 1: The UEIP Partners

RESTORATION & PROTECTION OF CRITICAL ECOSYSTEMS IN VULINDLELA

UMGENI RESILIENCE PROGRAME

OVERVIEW

The overall objective of the URP is to increase the resilience of vulnerable communities through interventions such as early warning systems, climate smart agriculture and climate proofing settlements.

The URP comprises four components. The focus of this proposal relates specifically to component 2.2, namely: Restored and protected critical ecosystems that maintain ecosystem resilience, provide buffering from climate change impacts and provide freshwater to local communities downstream.

The targets for component 2.2

are

- 200 ha of restored grassland;
- 12 km of rehabilitated riparian zones (wetlands).
- 50 ha of alien vegetation removed to prevent bush encroachment; and
- 1 50 km of firebreaks.
- A rangeland management plan

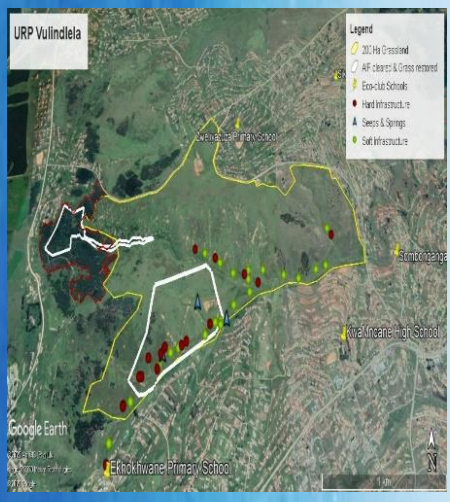

Figure 1 - project area

FAST FACTS

Location: Vulindlela, Msunduzi Municipality
Duration: 21 months (July 2019 – March 2021)
Client: uMgungundlovu District Municipality
Partners: Eastern Wetland Rehabilitation; Institute of Natural Resources
Project Value: R7 000 000.00
Project Manager: Gugulethu Tshabalala
Total Budget and DUCT Budget:

	Budget Yr 1	Budget Yr 2	Total Budget	Expenditure to Date	Balance Remaining
Project Budget	R2 546 695	R4 453 340	R7 000 035	R1 540 911	R5 459 124
DUCT Budget	R1 747 170	R2 170 100	R3 917 270	R1 246 615	R2 670 655

OUR ROLE

TASK 1: INCEPTION

TASK 2: RECRUITMENT AND TRAINING

TASK 3: ECOSYSTEM REHABILITATION

Task 3.1: Restoration of 12km of Riparian Zone (wetlands)

Task 3.2: Restoration of 200ha of Grassland

Task 3.3: Rangeland Management Plan

Task 3.4: 50 ha Alien Invasive Plant Clearance.

ACHIEVEMENTS

KRA	Description	Cumulative
KRA 1	Inception phase	100% completed
KRA 2	Recruitment and training	33% (14 of 44 field staff appointed)
KRA 3	12 km of rehabilitated riparian zones	0%
KRA 4	Restoration of 200 Ha of grassland	16 x eco-blankets 5 x fixed blankets 42 x eco-logs 303 x rivetts installed 31.9 Ha restored
KRA 5	Rangeland management	25% of grassland demarcated for resting.
KRA 6	Alien invasive plant clearance	15.19 Ha of alien plants cleared
KRA 7	Capacity building	4/7 schools have been visited