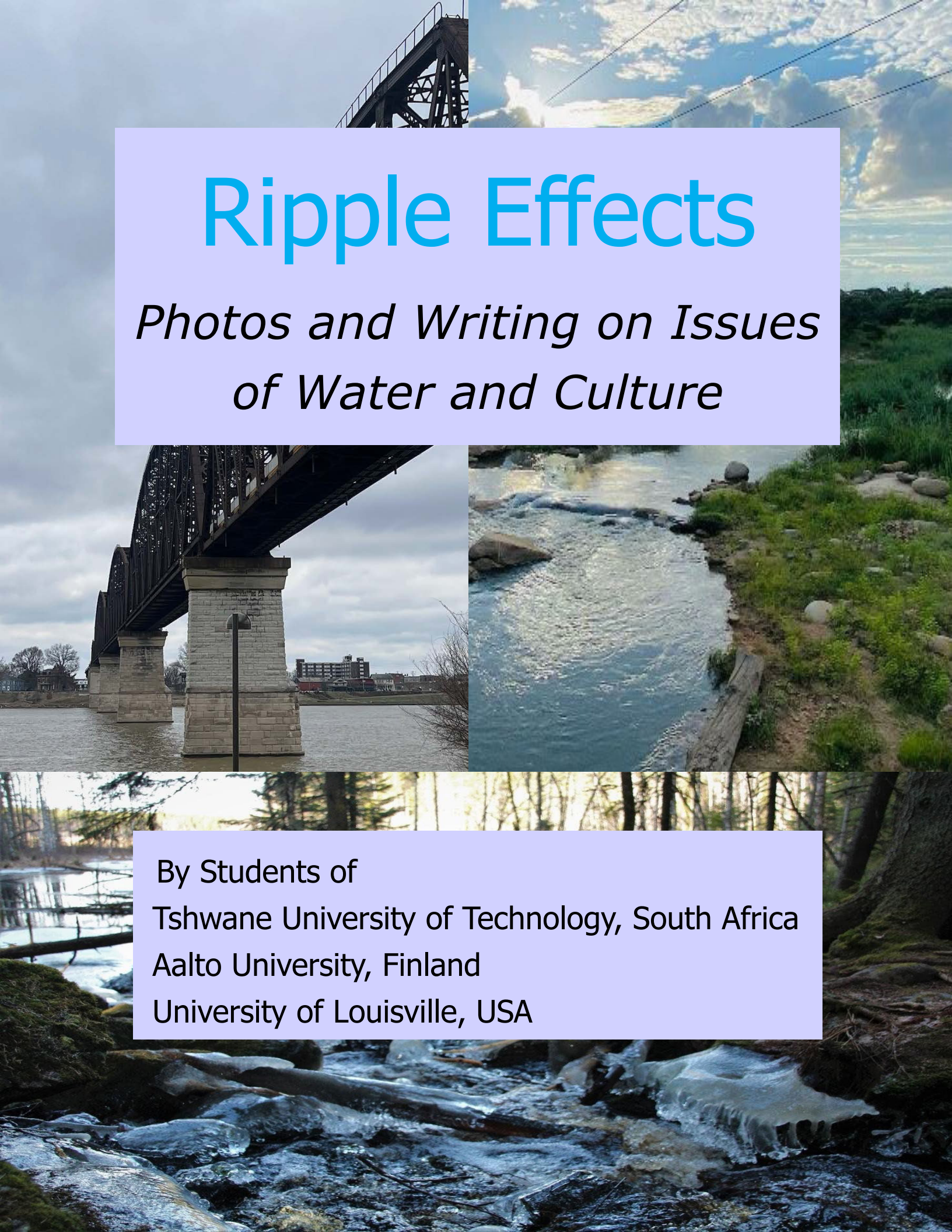


Ripple Effects

Photos and Writing on Issues of Water and Culture

By Students of
Tshwane University of Technology, South Africa
Aalto University, Finland
University of Louisville, USA

Table of Contents

Introduction

A student in South Africa points to the contrast between the importance, and beauty, of water and the challenges of damage to the ecosystem. While in Finland a student reflects on the differences government regulation have made in the cleanliness of local lakes. And, in the US, a student reflects on ways in which water is taken for granted in her culture, including in water bottles. Water is an essential element in all our lives, but our interactions, awareness, and emotions about it can be widely varied. Yet learning about the experiences and thoughts of others across cultures helps us understand more about the world, and more about ourselves.

The essays in this book were the result of a project created for students to investigate issues of nature and climate change as a physical and cultural experience, both in their communities and with peers in other countries. As teachers we wanted to provide opportunities for students to learn about local places across cultures that help them more clearly imagine the global scope of climate change. Toward that end, we asked the students in our three courses - a science-writing course for engineers in Finland, an environmental sciences course for biology students in South Africa, and professional and public writing course in the US, to create photo and writing essays around issues of water designed to identify and explore ideas and issues around water and in their local communities. The students then read and responded to the essays from their peers in other countries. We hoped this photo essay project would offer students the chance to explore these crucial ideas and issues around nature in their communities and then to see how differences in culture and discipline shape the same multimodal essays in other parts of the world. This project took place in the first half of 2025 at Tshwane University of Technology in Pretoria, South Africa; Aalto University, Espoo, Finland, and the University of Louisville, in Louisville, USA.

The project draws on the ideas and processes of Ripple Effects international, a photo and writing initiative focused on issues of sustainability and culture in which people can share images and writing that capture their experiences, insights, research, and feelings related to water resources and other aspects of the natural environment. Around the world, issues around water resources are critical issues that have an impact on health, culture, and sustainable development and Ripple Effects International is way for people to reflect on and learn about these issues from around the world. Ripple Effects International was co-founded by Bronwyn and Mary Brydon-Miller at the University of Louisville and initially involved primary and secondary school children. But, on hearing about the project, both Nicole and Cathy suggested that it could be adapted to university students and we began the planning together then.

In this book you will see how these students perceive and understand the environmental challenges they encounter within their everyday lives, as well as the beauty and pleasure they find in the natural world. The images and the words will offer insights into the distinctive cultural differences between the three countries, and commonalities that show how life on the other other side of the world is often similar in quite unexpected ways. And the essays show how the distinctive places we inhabit influences understandings of environmental issues and

climate change. Finally, the essays show the power of “multimodal” work, of using both images and words, to provide a more nuanced and complex understanding of culture and nature than could be found in just words or images alone.

We want to thank all the students who participated in this project for their exceptional work. We also want to thank Dr. Sarah Strickley and the PubLab project of the University of Louisville Department of English for support in publishing this ebook, We want to thank Mary Brydon-Miller for her support and advice and brining the possibilities of Ripple Effects to our attention. Also thanks to Emily Baird for help with design and creation of the ebook.

If you are interested in taking part in a Ripple Effects International project or in using the process in your school or community setting, please visit the website: https://rippleeffectsinternational.org/

We hope you enjoy this work.

Dr Catherine Dzerefos, Tshwane University of Technology

Dr. Nicole Ivarsson-Keng, Aalto University

Dr. Bronwyn T. Williams, University of Louisville

Aalto University, Espoo, Finland

The students engaging in this project were mostly the final year undergraduate students in the field of STEM (Science, Technology, Engineering and Mathematics) at Aalto University, Finland. Students were enrolled in the English language course “Communicating Technology,” which introduces written and oral communication principles and strategies that are applicable to professional and academic purposes. Students are expected to apply these strategies and elements in oral presentations and writing to present information clearly to a non-expert audience. The class was taught by Dr. Nicole Ivarsson-Keng. https://www.aalto.fi/en

Typical summer houses by Lake Lohja, Finland.
Aleksi Lassila, March 2025

The Privileged Bystanders

Aleksi Lassila, Aalto University.

Growing up I spent most of my summers at our summer place in Lohja, Finland. The house is situated beside Lake Lohja, a typical yet beautiful Finnish lake with clean water and surrounded by nature. Every summer we would spend time swimming, fishing, and canoeing around the lake, and after enjoying a hot sauna, we would jump into the water to cool off. The lake is an integral part of not only my childhood summers, but also the Finnish culture as a whole.

However, having spent so much time by the lake, I have come to realize that I take a lot of its amenities for granted. For example, one doesn't have to go far back in time to find a time when the lake was not as clean as it is today. In the 1970s, the lake suffered from unmanaged industrial waste waters and agricultural runoff, which led to eutrophication and cyanobacterial blooms.

Many other Finnish lakes have suffered from similar issues in the past, but thanks to improved regulation and restoration efforts by the Finnish government and local communities, the situation has seen tremendous improvement. In fact, Lohja Lake hasn't seen a cyanobacterial bloom since the 2010s. To me that is a great, concrete example of what can be achieved with collective efforts and democracy that works for the benefit of the people. Looking at the political climate in many other European countries and worldwide, a government that listens to experts and wants to preserve nature is something we should not take for granted today or in the future.

Today Lake Lohja has minimal algae growth and is safe to swim in.
Aleksi Lassila, March 2025

A view of the lake in the summer.

Aleksi Lassila, 2022

During the past couple of years I've increasingly found myself wanting to go back to those childhood summers, when the biggest concern was the slowly creeping September and the start of school. Or, I guess for the rest of the world, it was global warming and gloomy predictions of the future of the planet. However, these days it feels like there is a new crisis every couple of years, and the world has already forgotten about climate change and accepted the looming consequences.

Thinking about those consequences puts my life into perspective. We are lucky to be located in a part of the world where climate change will most likely not have as severe consequences as elsewhere, or at least it doesn't seem to present an existential threat. But many other countries and cultures are not so lucky; The predictions range from extreme weather events and rising sea levels to the collapse of ecosystems. When reading about the impacts, it's hard not to feel guilty when our biggest concern is how the warming weather will affect snowfall amounts or the skiing season. Yet, it feels like there is hardly anything we can do about it. It's as if we are bystanders witnessing an accident about to happen.

Scenery from Ruka, Finland.
Aleksi Lassila, March 2025

Ripple Effects Photo Essay

Olli Harju, Aalto University.

Normally, rainwater falls to the ground and then flows as surface and subsurface runoff toward a body of water within the catchment area. These bodies of water are formed by the water brought by precipitation, which has gathered in one place as a result of runoff.

In winter, the movement of water slows down as snow remains on the ground, waiting for spring to melt it, after which it continues its journey toward water bodies. In spring, the melted snow mostly flows as surface runoff, since the ground is still frozen and cannot absorb the water. This phenomenon is called spring runoff. In some regions in Finland, the runoff caused by melting snow can be so significant that it leads to flooding, especially around rivers.

Evo, Hämeenlinna, Finland. Photo: Olli Harju. Date: March 22nd, 2020.

The extent of flooding is influenced by several factors. The snow water equivalent refers to how much water is contained in the snow. As you might expect, the higher the water content, the more runoff results from the melting snow. However, this value alone does not directly determine the amount of runoff, as even a large amount of snow can melt slowly over time. This might result in moderate runoff despite the total volume. If the temperature rises rapidly, there can be a sharp and sudden increase in runoff. In such cases, the risk of flooding rises significantly, especially if the high temperature persists for an extended period.

Climate change affects spring runoff in Finland in many ways. Winters are becoming less snowy, and snow melts earlier than before, which causes spring runoff to begin earlier and be smaller in volume. However, the amount of precipitation does not decrease, which means that more of it falls as liquid water during winter. This increases the risk of winter floods, especially when the ground is frozen during rainfall. Climate change also increases rapid

temperature fluctuations, meaning that even an ordinary amount of snow can cause flooding if it melts quickly.

Evo, Hämeenlinna, Finland. Photo: Olli Harju. Date: March 22nd, 2020.

The stream in the photo is located in Finland, in Evo National Park in Hämeenlinna. At the time the photo was taken, the last snow of spring had just melted, which is why the water flow is stronger than usual. This makes the stream resemble a small rapid. I am originally from near Hämeenlinna, so the nature of the area is familiar to me. Even though the distance to my current home is just over 100 kilometers, the natural environment feels different from that of my old home region. Hiking in the forests of Häme brings calm to a busy life—something that is hard to experience elsewhere. Being surrounded by nature helps you forget everything else and focus only on the present moment.

Large-scale flooding is not very common in the Evo area, as the terrain is hilly and the streams run in fairly deep channels. Still, the phenomenon can be observed when the streams start to resemble small rivers. Beavers also inhabit the area and build dams in the streams. These dams cause the water level to rise locally, which forms small flood zones nearby. Beavers use the dams to deepen the water near their nest so that they can swim to their homes protected from predators.

Evo, Hämeenlinna, Finland. Photo: Olli Harju. Date: March 22nd, 2020.

In spring, heavy runoff often damages beaver dams. The sudden increase in flow can break the dams, forcing the beavers to rebuild them after spring. On the other hand, the dams can hold back water, reducing flooding in areas downstream.

Spring runoff is a surprisingly interesting phenomenon, as its effects are clearly visible in the surrounding nature. The changing seasons in Finland are a true richness, as the same environment can offer very different experiences depending on the time of year. I'm also grateful to be able to hike in areas where nature has remained largely untouched by human activity.

References: https://www.vesi.fi/vesitieto/ilmastonmuutos-muuttaa-tulvia/

https://www.vesi.fi/kevaan-tulvakausi-alkaa-etela-ja-lounais-suomessa/

https://en.wikipedia.org/wiki/Beaver

Course material of the Aalto University course KEY-C1080 Applied hydrology

I'm Olli, a Sustainable communities bachelor student from Finland. I have learned quite a lot about water related issues and sustainability during my studies, and I think that the global warming is one of the biggest threats to nature and it's balance at the moment. Water has a critical role in many ecosystems, and the global warming poses a threat to them.

Tshwane University of Technology
Pretoria, South Africa

In South Africa, the photo essay assignment was completed by 3rd-year students pursuing a Diploma in Environmental Science as well as research methodology students undertaking a postgraduate diploma at the Tshwane University of Technology, in Pretoria. These students are mainly from outlying rural provinces where the dominant languages are sePedi, Tswana, Tshivenda, Shangaan and Zulu. The assignment allows for acknowledgement of Indigenous Knowledge and is designed for enhancing awareness on water issues in an urban and rural setting while also improving communication skills in English. The classes were taught by Dr Catherine Dzerefos. https://www.tut.ac.za/

Water quality and availability within the Groblersdal area

Ignatius Guvi, Tshwane University of Technology

Water is a crucial component of daily life; however, several problems exist in providing such a basic service within the Groblersdal area. Water quality and availability are influenced by a variety of factors, including scarcity and infrastructure. I hope the following photographs, will raise awareness on water issues in my community.

Figure 1: Oasis Water, a store which sells purified bottled water in Groblersdal, taken on March 2 2025

The photograph above depicts Oasis Water, one of several businesses that sell purified water to residents in Groblersdal. Due to frequent water quality issues, many residents are forced to rely on private companies for drinking water. A refill of a 20-litre container costs 30 rands at Oasis, which can add up to 250 rands a month per household, on top of the water bill. This highlights an urgent need for investment in the municipal water treatment to ensure that clean water is accessible for all.

The image depicts a 5000-litre water storage tank. These tanks are frequent in my neighbourhood due to the area's intermittent water supply. This tank represents adaption and tenacity in the face of a difficulty to me, as I use it as a storage tank as necessary. This image reflects inequality, as not everyone can afford such solutions, as well as the need for a sustainable water supply.

Figure 2: A 5000-litre water tank which stores water for use during outages taken in Newton Groblersdal

The image above depicts a pigeon drinking water from a puddle caused by a busted pipe. Burst pipes are a common occurrence in Groblersdal. This graphic emphasises the significance of providing drinking water stations for birds and wildlife.

Figure 3: A pigeon drinking from a puddle captured in Groblersdal on 8th of March 2025

Figure 4: A woman collecting water from a communal borehole in Tambo Village 18th of February 2022

The above photo depicts a woman pushing a wheelbarrow with water containers from a communal water point. Under the hot sun, the woman pushes her wheelbarrow carefully balancing 2 heavy containers. She repeats this journey 4 times a day, with each trip taking over 30 minutes just to fetch water. This daily struggle, is a reminder of how access to clean drinking water remains a privilege rather than a right in rural areas.

The above images collectively depict how impactful water is to daily life. Water is not only a source of sustenance, but also an indulgence that all living organisms deserve.

I hope for a future where every household in the Groblersdal area regardless of income level has access to clean drinking tap water. This can be achieved through improved municipal water infrastructure, investment in filtration systems and stronger water safety enforcement. If we act now, clean water can become a basic right not a luxury.

Born and raised in Harare, Ignatius Guvi is currently pursuing a Postgraduate qualification in Environmental Science at Tshwane University of Technology. With dreams of one day becoming an environmental manager and owning his own consultancy. When he's not studying or working toward his future, Ignatius enjoys playing chess, running, and watching Formula 1 especially when McLaren is on the track. He also loves listening to Ed Sheeran, Shaboozey and The Weeknd to relax and recharge.

Water for All? The Unequal Access to Clean Water in South Africa.

Dency Mongwe, Tshwane University of Technology

Figure 1: Water Pollution in informal settlement.

A photograph showing polluted water in an informal settlement in Diepsloot, Gauteng, taken on 15 March 2025. The image highlights the severe water contamination caused by inadequate sanitation infrastructure, posing significant health risks to the community. (Photo: John Smith)

In South Africa, polluted water sources are a significant problem in informal communities due to poor sanitation and waste disposal systems. Reflecting the terrible realities that many communities endure, the graphic shows a filthy canal full of plastic and other debris. This issue draws attention to socio economic injustices and the pressing need for long-term fixes. As a student of environmental sciences, I believe that this is an urgent issue that calls for community engagement, legislative reform, and education. A fundamental right, access to clean water is a problem that must be resolved for the sake of environmental sustainability and public health. To safeguard these communities, I hope that better waste management and sanitation facilities will be given top priority. Both local and international audiences are urged by this graphic to acknowledge and help address the water issue that is harming informal communities.

Figure 2: Polluted Water in the Apies River.

The polluted section of the Apies River shows debris and industrial waste along the water's surface on 12 March 2025. The river has been severely affected by urban runoff and illegal dumping in the area. (Photo: Dency Mongwe)

The picture depicts the Apies River, which is heavily contaminated by trash, plastic, and industrial waste. Urban runoff and unlawful dumping have caused the formerly pure rivers to become murky and poisoned, which is a serious environmental problem. This picture, in my opinion, captures the continuous environmental deterioration that is frequently disregarded in urban environments. It highlights the effects of unregulated industrial and household waste disposal and ties in with the larger problem of water contamination. My life is impacted by this pollution since it has an effect on public health and local ecosystems. The river's deterioration is a clear illustration of how nature is harmed by human activity. Rivers will be cleaner in the future because of stricter laws and increased public awareness.

Figure 3: The Impact of Flooding in KwaZulu-Natal

Damage to a road in KwaZulu-Natal on 09 March 2025, following severe flooding caused by heavy rains and storms in the region. (Photo: Amukelani Malungani)

Following intense rains and storms, KwaZulu-Natal experiences flooding, which has a catastrophic impact on the local population and ecosystem. Homes, means of subsistence, and access to basic services are lost as a result of the destruction of roads, damage to infrastructure, and displacement of entire populations. The effects on the environment are just as bad, with local ecosystems being destroyed, soil erosion occurring, and river systems overflowing. These effects emphasize how urgent it is to adapt to climate change and implement better disaster management techniques. Seeing such incidents as an Environmental Sciences student highlights the necessity of proactive environmental impact assessments and sustainable methods to reduce future harm. I'm hoping that the area can better prepare for extreme weather events, lessen their effects, and safeguard vulnerable people going forward with increased knowledge and action. The public has to be aware of the long-term consequences of flooding and the significance of tackling climate change, both inside and outside of environmental studies.

Figure 4: A Sustainable Future – Rainwater Harvesting System in Pretoria

A rainwater harvesting system showing a green barrel collecting rainwater from a white downspout next to a building in Pretoria South Africa, on 06 January 2025. This setup helps conserve water for later use, such as irrigation, promoting sustainable water management. (Photo: Dency Mongwe)

The picture shows a rainwater harvesting system in Pretoria, South Africa, where rainwater is collected from a white downspout that is fixed to a structure and stored in a green barrel. A hose is attached for regulated water consumption and a mesh cover aids in debris filtering. This picture, in my opinion, represents sustainability and water conservation, demonstrating how environmental problems may be solved with easy fixes. It connects to the subject by emphasizing effective water management, particularly in drought-prone areas. My life is impacted by this method because it emphasizes how crucial it is to reduce water waste. Such systems, in my opinion as a prospective environmental scientist, are essential to resolving water scarcity.

In order to advance sustainability, I envision a time when rainwater collection is extensively used. I want my audience to understand that even tiny, doable changes can have a big environmental impact and contribute to the development of a future that is water-secure.

Figure 5: Contaminated Water flowing from the taps.

Dirty water flowing from basin taps in Pretoria, Gauteng, on 03 March 2025, highlighting the ongoing water contamination issue in the region. (Photo: Dency Mongwe)

The picture of soiled water gushing from basin taps illustrates the severe problem of water contamination, which creates major health hazards and difficulties in guaranteeing access to clean water. This picture highlights the continuous difficulties that people encounter, especially in impoverished regions where access to clean water is a major issue. This has a direct bearing on the significance of Environmental Impact Assessments (EIAs) and their function in detecting possible threats to water supplies for students studying environmental science. I find it concerning how concerns with water quality impact day-to-day living, ranging from health difficulties to restricted access to potable water. To guarantee safe water for everyone, I anticipate more stringent rules and advancements in water treatment facilities in the future. In order to safeguard our water resources, I want my audience to comprehend the extensive effects of water contamination and the necessity of sustainable behaviors.

Dency Mongwe is a third-year student pursuing a Diploma in Environmental Sciences at Tshwane University of Technology. Originally from Tzaneen, Limpopo, she is dedicated to promoting sustainability and environmental justice. Her career aspirations include contributing to the fields of environmental impact assessment and conservation, with the goal of preserving South Africa's natural environment for future generations.

Issues of Water

Katlego, Tshwane University of Technology

The Mandela River is a long continuous waterway that flows from west to east. The term “Mandela “is not yet official but rather Madibaville, which was named after Nelson Mandela . It is an informal settlement in Katlehong , my township. The township is called Madibaville. Madibaville is a place where people built their own homes . Seeing how the residents were staying, I couldn’t help but notice how dirty the environment was especially the river. Me and my father would drive past the settlement in the mornings and witness residents disposing their bath or used water on the grass causing water to flow and transported under the small bridge and joins another waterway which I will be addressing issues about called the Mandela (Madibaville**)** River . As shown in the picture below, the waterway is “BROWN” in colour indicating that it is foul giving off a bad smell .it travels also a long distance. Dogs would drink from the contaminated river . People tend to light up bonfires –(used for disposing of waste), without realising the excessive smoke caused . Kids would be found playing around the river which is not safe to their health, inhaling a foul smell might cause respiratory problems . This also impacts kids attending close to their homes, they get to walk and inhale the poor air quality on a daily basis . Seeing the condition of the river , It is an unpleasant, underwhelming and uninviting view that leaves a bitter taste in my mouth. The community is struggling with polluted water, NO action is taken. The human and wildlife and the environment are at risk. Proper waste disposal and community volunteering to participate in clean ups would’ve made a change.

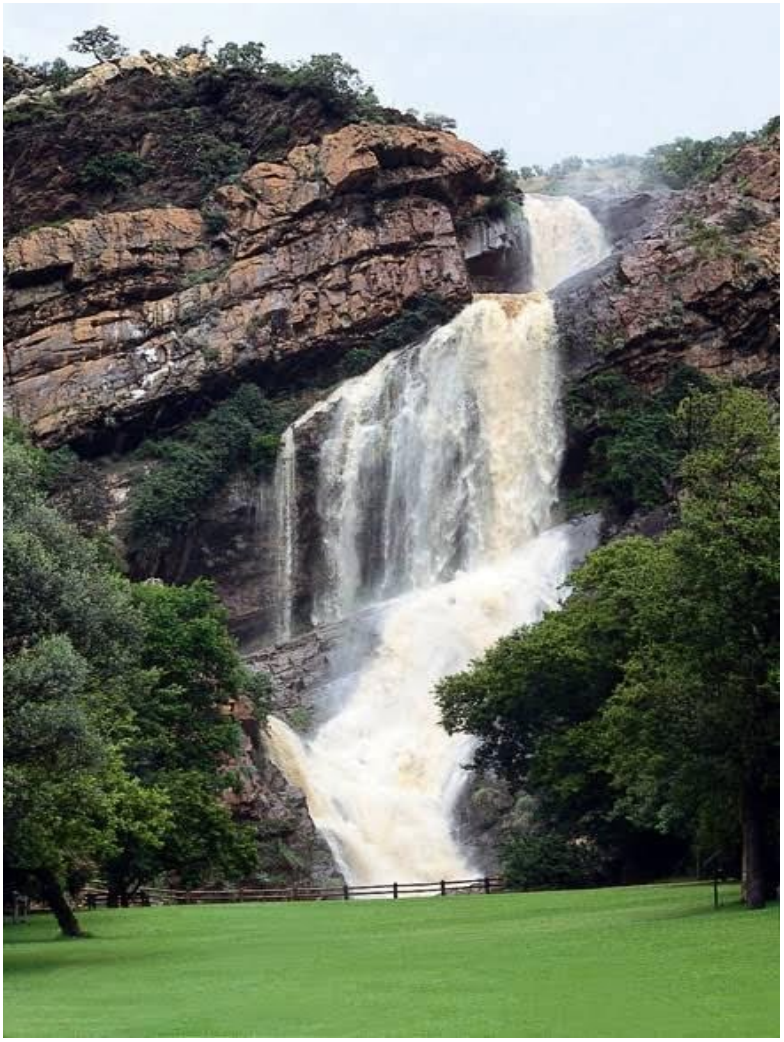
The Mandela(MADIBAVILLE) River is brown in colour

The Roodkop River

The Roodekop River is a that's in a form of puddles. It is situated next to an open field called Huntersfield . The Roodekop River is a waterway that's in a form of puddles and has rocks . The puddles hold both clean and dirty water. The clean water comes from the rain in figure 2.2 and the dirty water is caused by littering and sewage as shown in figure 2.1. Everyday people tend to run past the puddles to go exercise at Hunterfield . The vehicles drive past the river too and also there's a road next to the open field which is not used by anyone, but when there's high traffic on other roads, few cars use that road for shortcut and its very close to the river . The Roodekop River does not worry me much due to it has less issues but at the same time it changes due to different seasons

In summer, the puddles overflow due to High Rainfall and the heat depletes the oxygen levels in the puddles, and in winter , the puddles tend to freeze and change colour. The puddle in figure 2.1 is enclosed by long grass which is contaminated with waste (paper, plastic). This causes River clogging due to litter can clog the river causing flood and alliterating of the rivers flow, creating a discoloration of the river water to more of dark blue / purple as shown . This creates an excessive odour. The stagnant dirty water creates a breeding ground for flies and mosquitoes.

In figure 2.2 , the long blue pipe next to the river is shown , people and students get to walk on top of the pipe for a shortcut. It does not look safe because the pipe is above the river.



The Witpoortjie Waterfall

The Witpoortjie waterfall is one of the most attractions people get to visit. It is situated in Roodeport . it is known to be one of the most breathtaking cascades of water that spills into a large dam, the pool which is at the bottom. People get to visit the Witpoortjie Waterfall as an escape into nature. The crystal clear water provides guests with a tranquil atmosphere that promotes relaxation and the sound of the water hitting the ground pool, creates a mesmerizing displace of sound and sight . The grass gives off that vibrant green colour with a spongy texture and is family friendly where families get to do picnics. The Witpoortjie Waterfall is of historical importance and also holds cultural significance for local communities. Witpoortjie Waterfall is usually refreshingly cool especially in summer. The waters constant flow also creates a misty veil which is usually below the waterfall. The quality and characteristics of water can vary depending on the human impact. I love the peacefulness of the waterfall .

It is a great place to visit!

Palm Ridge Sewage Issue

Palm Ridge is a suburb located in Johannesburg , in Katlehong . The specific place which has issues of sewage, is in Anaboonstreet , Extension 4 in the east rand . The residents had issues of blockage of drains which caused flood of sewage , expanding the sewer capacity to the streets as shown in the picture . The residents had to deal with the persistent of the stench smell and feared for their lives because the environment was no longer safe and healthy and they would catch a disease . The residents had complaints that half of their yards were dead, including the soil, plants were affected and with the grass drying up too. I am alarmed because of this sewage situation and potential health risks . The sewage smell was too strong for the people staying nearby because they experienced severe headaches. The children were prevented from playing outside because the situation had become hazardous. If only the residents were educated about proper waste disposal and reducing water usage, the situation wouldn't be dire.

The Sewage Problem at Zuma

The streets of Zuma section, in Katlehong there is a pool of sewage. Seeing how the drains were blocked, they also caused flood of water next to the drain, affecting the residents of Zuma Section. The sewage has been running in the doorway of this house. No action was taken and the flood of sewage has been going on for consecutive days. The employees would take their time to fix the issue, the more they delay, the higher chances the residents would be affected. The sewage was caused by human activities when they made assumptions, they had issues . They put all foreign sort of things in the sewage reticulation and pumps. The municipality was failing to provide adequate services to its residents. It is hard to stomach seeing how the community is suffering

Conclusion

In conclusion, the question is facing a profound environmental crisis, hence I resolved to direct my attention mostly to my township in Katlehong ,due to my concern about water crisis in my township , an escalation of issues , with no strategies implemented to combat the environmental issues and the frequent flooding of street with sewage waste possessing serious health risks to residences . The consequences of this neglect are far reaching and with devastating impacts on public health, local ecosystem , wildlife and overall the quality of life . By adopting a multi-sided approach, rivers could be restored , combat sewage crisis and create a thriving environment and mostly prioritize the human rights . Everyone has the right to an environment that is not harmful to their health or well- being.

My name is Katlego. I am an environmental science student currently studying in Tshwane University of Technology. As a dedicated science student , I am passionate about sustainability, conservation and environmental justice . My academic interests are focusing on minimizing environmental impacts and health impacts and making our planet a better place .

Water

Selowa Karabo, Tshwane University of Technology

Water is essential for all known life, existing in three states: solid, liquid, and gas. It is vital for human life and countless other uses including drinking, cooking, hygiene, agriculture, industries and even recreation.

Water pollution is the contamination of water bodies such as rivers, lakes, oceans and groundwater due to harmful substances or activities that degrade the quality of water

Picture 1: Polluted water in Pretoria West, image shot by Selowa Karabo

The picture shows a polluted waterway with murky water, visible discharge and yellowish liquid. These signs show the contamination from the industrial runoff, sewage discharge illegal dumping that is caused by humans are the most critical environmental challenges facing urban and rural communities

Polluted water sources have severe impacts on both the environment and human health. Contaminated water can spread diseases like cholera, dysentery and skin infection. It can also impact aquatic ecosystems because the pollutants reduce oxygen levels in water making it difficult for fish and other aquatic animals to survive chemical and heavy metals from industries waste in Pretoria West which can be toxic to marine life, leading to biodiversity loss.

Image 2: Water floating in a canal at Pretoria Arcadia. Photo by Selowa Karabo

This picture shows the water in the canal that appears clear, but clarity does not necessarily mean cleanliness. This picture was taken in urban areas at Pretoria Arcadia where we have urban runoff and drainage outlet. This canal carries stormwater runoff, which can contain pollutants like oil, heavy metals and chemical chemicals from roads, buildings and industrial areas.

The absence of fish or other visible aquatic organisms shows that the water quality might not be suitable for life, even if the water appears clean it could still contain invisible contaminates such as bacteria, micro plastics or toxic substances.

Image 3: The pond at University of Pretoria. Photo by Selowa Karabo

The pond represents the growing aquatic ecosystem that plays a vital role in supporting a wide variety of life. The pond is surrounded by rich plants which are important in providing habitat, food, and shelter for countless organisms that can rely on this aquatic environment.

This body of water serves as a home to living organisms such as Aquatic insects, fish species, Amphibians such as frogs additionally aquatic plants, above the water birds can often be seen visiting the pond for food or shelter and each organisms plays a vital role In maintaining the pond's health and ecological balance, so without the water in the pond no life can occur so the water the in this pond is not just a passive feature but an active life sustaining

Image 4: Tzaneen Dam, photo by Karabo Selowa

Tzaneen dam is found in Limpopo Province in South Africa. This dam serves not only as a source of water for agricultural and domestic use but also as a thriving ecosystem supporting diverse plant and animal life. The dam supply water to the people living around Tzaneen. Because of its water, this area also offers recreational activities such as boating and the water makes the surrounding plants rich and beautiful.

It is a popular spot for both locals and tourists seeking relaxation or adventure. Therefore Tzaneen dam water does not only support agriculture, wildlife and human livelihoods, the water in the dam makes it an essential part of the environment and valuable asset to the Limpopo province.

Image 5: The Vaal River, picture shot by Karabo Selowa

The Vaal River is the largest tributary of the Orange river, because of its water it holds a significant place in South Africa's hydrological and socio-economic land scape. It is integral to South Africa's water supply system. This water is essential for resident consumption, mining operations, manufacturing industries and power generation.

In conclusion protecting water or water bodies is not only an environmental imperative but also a socio-economic necessity that requires joint from all sectors.

1.Department of water and sanitation [DWS],2018). Centre and Environmental Rights [CER].2021). this has resulted in local source (South Africa) state of water quality in south Africa 2017-2018. Pretoria: Department of Water and Sanitation. Available at: https://www.dws.gov.za [Accessed 20 march 2025]

I'm Selowa Karabo a third year TUT Student from South Africa pursuing Environmental Science career. I care about the planet and I want to be part of the solution that protect the environment through sustainable development and environmental laws and I'm happy working towards a greener world

Water in South Africa

Sihle Mlokothi, Tshwane University of Technology

Apies River, Pretoria, 464 Lion Bridge, by Sihle Mlokothi

Degradation and Rehabilitation

Many towns depend on the Apies River, which has been seriously contaminated. Untreated sewage seeping into the Leeukraal Dam, which is supplied by the Apies River, resulted in a cholera outbreak in Tshwane, particularly in Hammanskraal, which claimed 17 lives. A significant contributing reason is the Rooiwal Sewage Works' poor upkeep, as well as how urbanisation has changed the river's hydrology. Littering is an issue, but the main problem is the deteriorating sewage system. Rehabilitating the river is the goal of initiatives like the Rainbow Junction Development restoration plan, which emphasises the necessity of sustainable management to restore water quality and save the environment for coming generations.

Clean Water Accessibility Through Innovation

To me, this image represents accessibility and innovation in water consumption. It highlights the increasing need for sustainable solutions to clean drinking water. With climate change and pollution affecting natural water sources, affordable purification systems like this one offer an alternative that is both economical and environmentally friendly. This image connects to the larger discussion of water scarcity, sustainability, and consumer choices. Many people lack access to clean drinking water, while others rely on expensive bottled water, which contributes to plastic waste. All connecting or streaming from the same issue due to the decline in municipal services. This purification system provides a cost-effective and eco-friendly alternative, encouraging people to reuse bottles and reduce single-use plastic consumption. It reflects a growing movement toward conscious consumerism and responsible water usage.

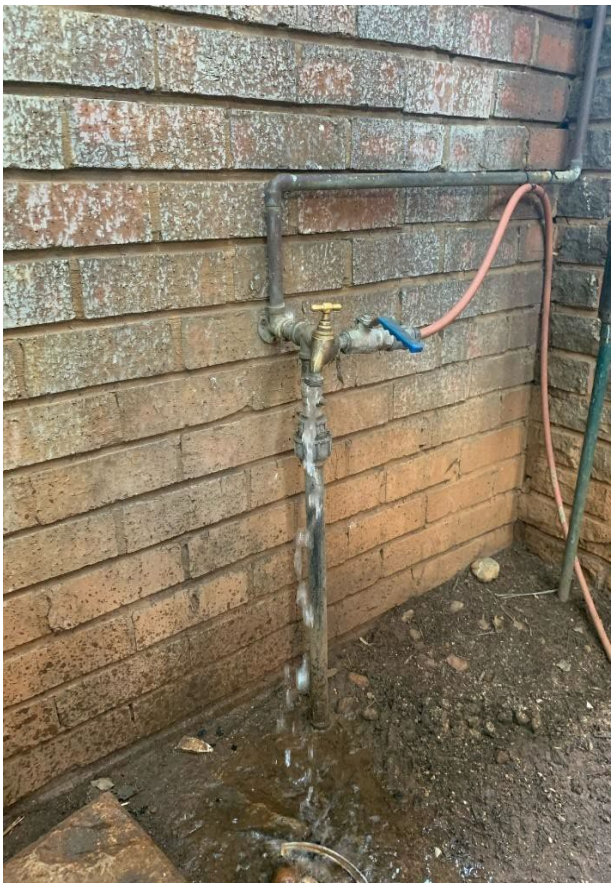
Purification system, Johannesburg, By Sihle Mlokothi

Adapting to Water Shortages

A green "JoJo" water tank elevated on scaffolding, storing water for local use.

Water scarcity and contamination in South Africa pose serious challenges, affecting communities' access to clean water. This image represents the struggle for water security, as many rely on storage tanks due to unreliable supply. To me it indicates the lack of improvement and short falls that South Africa is under as this image was taken at a place where it’s meant to be an urban area with quick access to water. Due to the decline in municipal service we have to resort to storage tanks.

Jojo tank, Burgers Park



A Growing Concern

Not only is there a shortage of water in Pretoria, but there is also an increasing problem with water quality. According to studies, microplastics from synthetic fibres, plastic trash, and industrial pollutants can be found in tap water, especially in South Africa. Unknowingly consuming tainted water exposes oneself to these particles, which might pose long-term health hazards. Daily duties are already difficult due to water shortages, and the presence of microplastics causes even more concern. Because it also includes microplastics, even bottled water is not a complete answer. This emphasises how urgently better waste management and water filtering are needed to guarantee everyone has access to safe, clean drinking water.

Tap water, Burgers Park student hotel, by Sihle Mlokothi

Infrastructure Decay and Its Effect on Water Security

This photograph captures my community's environmental issues and water management failures. On a damaged road, stagnant water indicates inadequate drainage, water waste, and potential health hazards. In addition to being tainted with germs, pesticides, and microplastics, it may produce mosquitoes that carry illnesses like malaria. This has to do with Pretoria's persistent water shortage, which is made worse by droughts and deteriorating infrastructure. Many are forced to rely on risky sources due to frequent water outages, and leaks and waste are still unfixed. Water is lost because of inefficiency rather than conservation and purification. To guarantee a sustainable and secure water supply, these problems must be resolved.

Pothole, Pretoria, Sihle Mlokothi

Conclusion

In the future, I envision everyone, regardless of financial situation, having access to clean water. Fast maintenance, better infrastructure, and universal access to clean water should be top priorities for the government of Pretoria. To solve the problems of water shortage and pollution, effective policies and sustainable solutions are crucial.

Reference

Kretzmann, S. & Gilili, C., 2023. *Deadly cholera outbreak was just a matter of time*. Ground Up, Pretoria, 24 May.

Kusel, S.U. & Arch, L., 20182. *Apies River rehabilitation progress report and motivation for subsequent phases*. Rainbow Junction Experiences Abundance.

I'm Sihle Mlokothi, a 3rd-year environmental science student at Tshwane University of Technology in South Africa. With a passion for environmental management and sustainability, I'm driven to create positive change in my community. Believing that individual actions can spark meaningful transformations, I'm committed to making a lasting impact and inspiring others to join me in shaping a more sustainable future.

The Impact of Climate Change on Limpopo's Rivers: A Story of Seasonal Transformation and Water Scarcity

Mhlongo N.F., Tshwane University of Technology

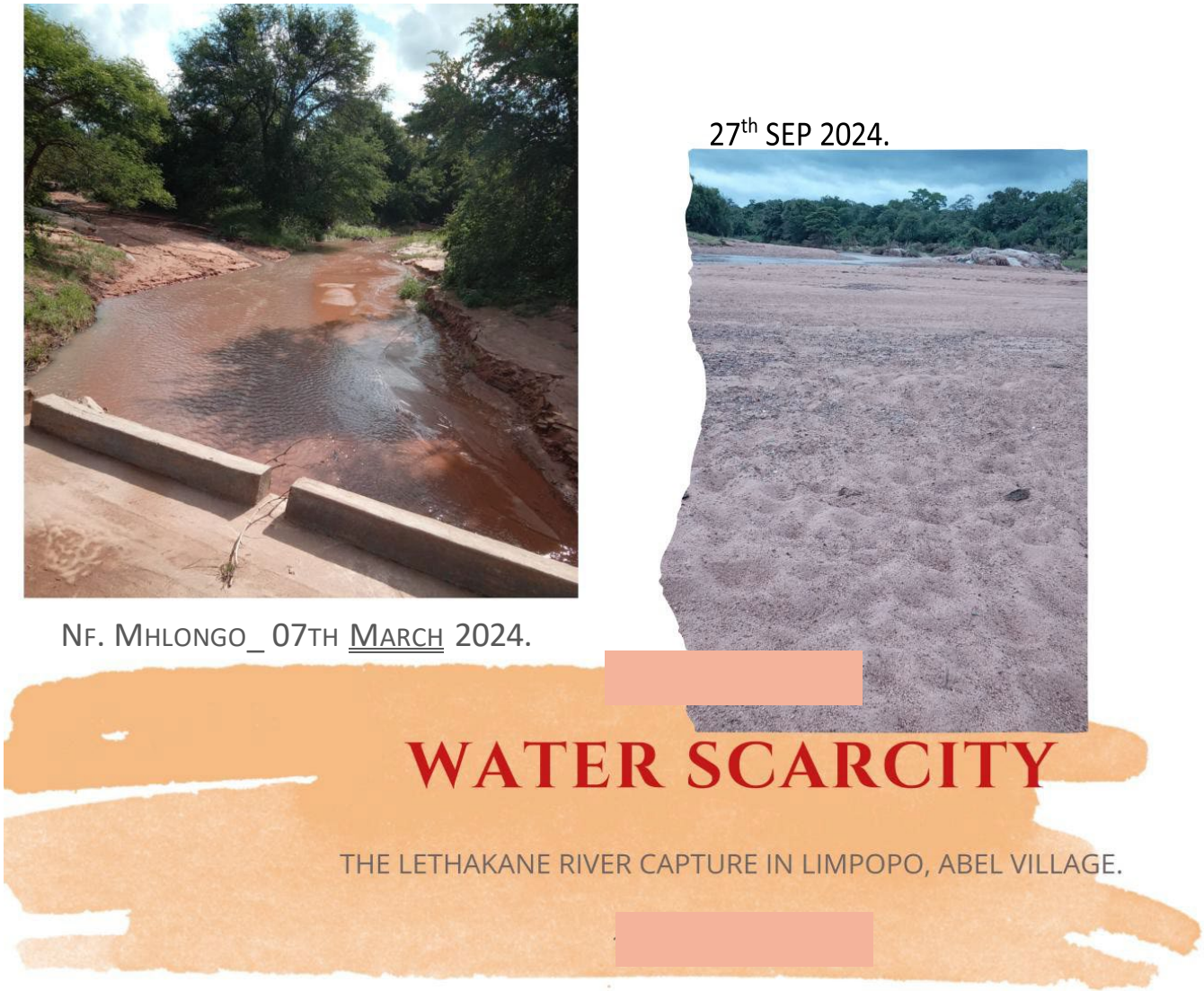


Figure 2: Overflowing Drain in Diepsloot West, Johannesburg, 18 February 2025

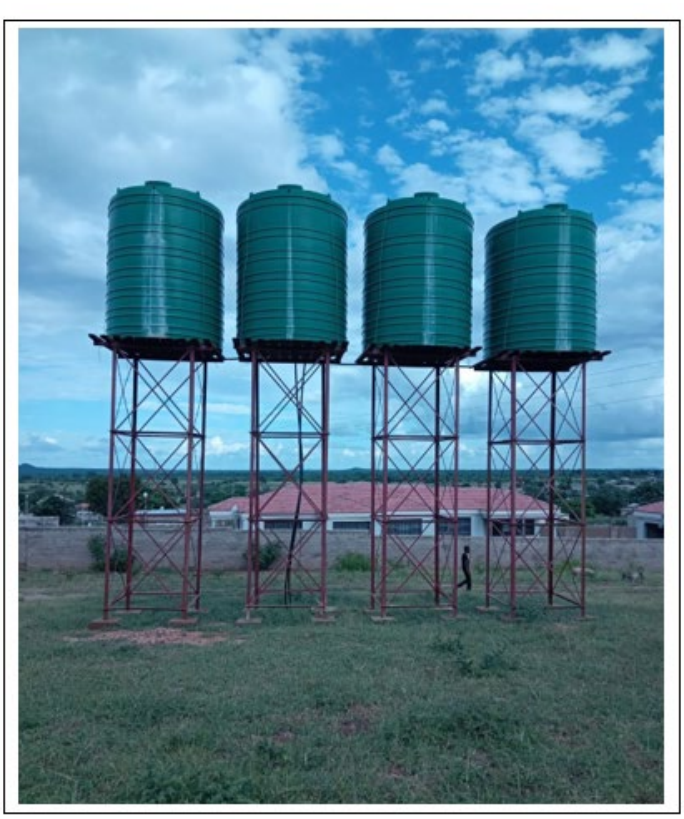
The images highlight the impact of climate change on the Lethakane River in Limpopo, comparing its appearance during the rainy and dry seasons.

The first image, taken in the rainy season, shows the river flowing with life, while the second, captured in the dry season, reveals a parched riverbed, underscoring the scarcity of water.

Climate change has disrupted rainfall patterns, leading to inconsistent and insufficient rain, even during traditional rainy seasons. Elders recall a time when rainfall was more abundant, contrasting starkly with current conditions. This water scarcity heavily affects rural

communities, particularly those facing financial challenges, leaving them struggling to access clean water.

These changes underscore the urgent need for sustainable measures such as rainwater harvesting and improved water management systems to support resilience in the face of climate change. Protecting water resources is crucial to securing a better future for Limpopo's communities and ecosystems.



NF. MHLONGO_ 12th March 2025.

CAPTURED AT ABEL VILLAGE, 12TH March 2025

The Struggle is Real

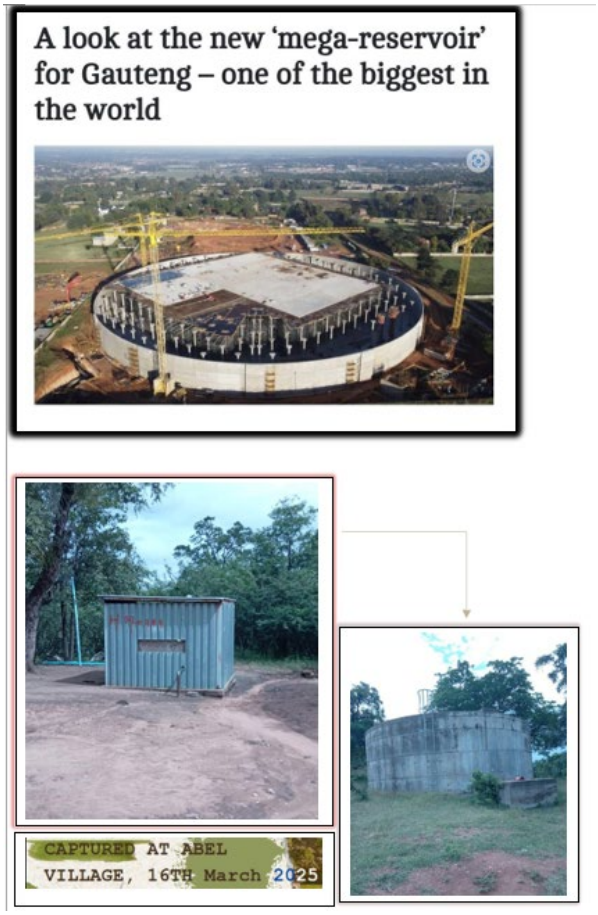
On the 12th of March 2025, I captured photographs that tell the story of the relentless battle my community faces with water scarcity. These images paint a picture of our daily lives, shaped by over a decade of struggling with limited access to this essential resource. I can't help but think back to my childhood, a time when water was abundant, and all we had to do was turn on the outdoor tap to quench our needs. Those days now feel like a distant memory.

The elevated JoJo tanks show how the municipality try and store water to supply to the community of more than 5 thousand people, **It's worse, This fails due to the growing demand**.

Today, the situation is far bleaker. Buckets, jerry cans, and large blue barrels have become symbols of survival, scattered across our homes as we store water wherever and whenever it becomes available. Rainfall is scarce, with rivers and dams remaining dry for most of the year, forcing families to buy water at high costs. The rising financial burden compounds the struggle, turning what was once a simple act of accessing water into a daily ordeal.

Looking at the situation itself in this case, I find myself questioning the root of this crisis. Is it the negligence of municipalities failing to maintain vital infrastructure? Or is it the growing reality of climate change reshaping our environment?

Through these photographs, I hope to shed light on the human impact of water scarcity. They serve as a call to action, reminding us that water is not just a resource—it's a lifeline. My hope is for a future where sustainable solutions and equitable water access ease the burden on communities like mine, ensuring no one is left to face this struggle alone.



Differences in Rural and Urban Water Supply Along with Their Infrastructures

The images tell a compelling story of the stark disparities in water infrastructure between urban and rural areas in South Africa. The first image showcases a modern reservoir under construction in Gauteng, representing progress and a promise of reliable water access for urban residents. It reflects careful planning and investment to meet the water needs of a growing population, even amidst the challenges of climate change. This infrastructure serves as a beacon of hope for the future of the city.

In contrast, the other images depict a neglected reservoir in Abel Village, a rural area. Once a critical resource for the community, it now stands abandoned, overgrown with vegetation. The villagers remember a time when the reservoir provided for their needs, but its disrepair has left them struggling with unreliable water access. Many depend on seasonal rain or distant sources, intensifying the hardships faced by financially vulnerable rural communities.

These contrasting images highlight the broader impacts of climate change and systemic inequality. While urban areas often benefit from robust infrastructure, rural regions like Abel Village experience neglect and deprivation. This disparity underscores the urgent need for equitable water resource management to address these challenges and improve access for all South Africans.

My concern is, what is it that is preventing the rural areas to be the same and treated like urban areas.

I, Mhlongo N.F., am a visionary environmental scientist dedicated to shaping a sustainable future. With a relentless passion for ecological resilience, I explore innovative solutions to combat environmental degradation and promote global conservation efforts. Through advocacy, research, and action, I continue to inspire change and drive meaningful progress in environmental science."

Water Sources in Rural Areas

Abigail Mathebula, Tshwane University of Technology

This is the Khokhovela River under the Olifants River catchment in the Bushbuckridge region. It has been the main water source in the Hluvukani village since the residents suffered from water shortage. It is also a source of food for those who eat fish. It is also used for religious purposes. It is also a source of water for all the livestock in the villages and those who have gardens. Even though it is beneficial it is also dangerous since children have been drowning in there. Due to climate change, the river is now drying.

Figure 1: A river in Mpumalanga at Hluvukani village (Abigail Mathebula)

The Sand River in the Bushbuckridge region passes through many game reserves and Kruger National Park. It is used as a tourist attraction and is the water source for all the wildlife in the Parks. It is also important for the people in the village, as other people go fishing. It is known mostly for religious purposes, as people, traditional healers, and churches go there for cleansing and baptism. It is a water source for the community, supporting domestic use, agriculture, and livestock.

Figure 2: The Sand River in Mpumalanga Rolle village (Abigail Mathebula).

This dam is used mainly for cattle, and owners must pay to allow them in. This dam is fenced and is controlled by our village leader. This also helps to prevent people staying nearby to throw their trash in there. Anyone who's found throwing anything in there or doing spiritual rituals without informing the leader is taken and required to pay a fine. Ever since our leader started this, the dam and the surrounding area have been clean. This also prevents children from playing there and drowning.

Figure 3: A dam in Hluvukani village (Abigail Mathebula)

This was the source of water in the village until people started to disappear without a trace. Apparently, there are crocodiles in there and this dam is near houses. The villagers used to collect water from the dam and kids kept on disappearing. Some people said they saw the crocodile but there was no proof of that. People kept on fetching water there because it was the only source of water. The people in the village had to strike at the Bushbuckridge municipality office located in Hluvukani village. They have been asking the municipality for water for the longest time without any response. The municipality finally answered them and now that they have water only livestock depend on this river.

Figure 4: A dam in Clare A next to Hluvukani village (Abigail Mathebula).

This is the water I’m using now as I’m away from the village. The water is too different as it has been purified so many times and sometimes it comes out dirty and we are instructed not to drink it. This was so unusual for me as our river water in the village is always available and when we want to drink it, we only boil it and drink it or pour a little amount of jik and drink it. We use this tap water for washing, cooking, drinking, and bathing. I’m just surprised some people don’t drink it they buy water to drink so I wondered if the water is not clean, or if it tastes different from their usual water.

Figure 3: Tap water at Riverside residence (Abigail Mathebula)

I'm Abigail Mathebula, a third-year Environmental Science student at Tshwane University of Technology. Hailing from Hluvukani village in Mpumalanga, South Africa, I'm passionate about sustainable development and community engagement. My love for soccer has taught me teamwork, discipline, and perseverance. I'm driven to apply my knowledge and skills to promote environmental stewardship. I'm excited to make a positive impact in my community and beyond.

Water pollution in South Africa

Azwindini Mulaudzi, Tshwane University of Technology

Figure 1: Pollution in the Apies River, Pretoria, 10 March 2025.

This image depicts pollution in the Apies River, with foam and litter floating downstream. Once a vital water source for Pretoria communities, the river now struggles with urban waste and untreated runoff. This highlights the urgent need for sustainable waste management systems and public education on environmental conservation. Pollution harms aquatic life and reduces the river's aesthetic value. I envision a future where stricter regulations and community-led clean-up efforts restore the river, preserving it as a vital resource for future generations.

Figure 2: Overflowing Drain in Diepsloot West, Johannesburg, 18 February 2025

This photograph shows an overflowing drain in Diepsloot West, where wastewater mixes with solid waste on residential streets. It reflects the challenges posed by inadequate infrastructure and urban poverty. Poor drainage pollutes nearby water sources and poses serious health risks through waterborne diseases like cholera. This scene emphasizes the need for government investment in basic services and public education on waste disposal. I hope for a future where all South Africans have access to clean water and proper sanitation, ensuring healthier living conditions for everyone.

Figure 3: Illegal Dumping Near Informal Housing in Diepsloot West, Johannesburg, 19 February 2025

This image shows a polluted water puddle surrounded by discarded plastics and other waste near informal housing. It reflects the consequences of illegal dumping and the lack of waste management facilities in underprivileged communities. Contaminated water sources can cause severe environmental damage and health hazards for residents. Addressing this issue requires sustainable waste management, community education, and stronger enforcement of regulations. I hope for a future where these practices protect both human health and the environment, ensuring cleaner, safer communities.

Figure 4: Water Pollution from Illegal Dumping in Diepsloot West, South Africa, 19 February 2025

This image highlights severe water pollution in Diepsloot West, where solid waste, including plastics and hazardous materials, accumulates in a waterlogged area. Unregulated dumping degrades water quality, threatening both the environment and public health. Contaminated runoff infiltrates local water sources, increasing the risk of disease. This represents environmental neglect and governance failure. Sustainable waste management, public awareness, and stronger regulations are essential to address the issue. I want my audience to recognize the global implications of pollution and advocate for equitable access to clean water as a basic human right.

Figure 5: Industrial Wastewater Pond at Seriti Coal Mine in Kriel, Mpumalanga, South Africa, 5 February 2025

This image shows an industrial wastewater pond at the Seriti Coal Mine in Kriel, Mpumalanga. The dark, stagnant water suggests contamination from heavy metals or other pollutants, posing risks to ecosystems and human health. It highlights the urgent need for stricter environmental regulations and improved waste management. This pollution affects nearby communities by compromising water quality and increasing health risks. I hope for future policies that enforce cleaner industrial processes and prioritize the well-being of both people and ecosystems, fostering a balance between industrial development and environmental sustainability.

Azwindini Mulaudzi is studying Environmental Science at the Tshwane University of Technology. He hopes to one day work with organizations that promote sustainable development and environmental justice. He has come a long way from his hometown of Johannesburg, where he attended Diepsloot West Secondary School. In his spare time, Azwindini enjoys cooking and exploring new places.

Water in My Life and Environment

Jacob Matsobane Ledwaba, Tshwane University of Technology

The Jukskei River near Alexandra

The Jukskei River near Alexandra Township in Johannesburg has always been a big part of my childhood. Even though it was contaminated at the time, we used to swim here. We would return from swimming with our clothes coloured and covered in algae. However, as children, we were unaware of the dangers. The river was a place of adventure rather than just water. In addition to catching crabs and bubble fish, we would search among the waste for toys or other valuables. People and even the municipality contributed to the river's pollution over time, making it into a dumpsite. The situation has only become worse due to improper waste management and poor enforcement of the law. Unfortunately, pollution has taken over and the animals that we used to catch are no longer there. I've come to understand the need of protecting our waterways before it's too late after witnessing the decline of the Jukskei River.

Apies River

This stream drainage in Marabastad flows into the Apies River, located in Pretoria, South Africa. The fact that there is an informal squatter settlement upstream, where homeless people depend on the drainage system for everyday activities like bathing, is what most surprised me about this location. The image brought to mind Brenda Fassie's well-known song Boipatong, which discusses the difficulties encountered by those in comparable living situations. As a student of environmental science, I am aware of how crucial it is to interact with local populations when researching environmental concerns. Unfortunately, Since I was by myself and felt unsafe, I was unable to interact with the community of the informal settlement here for fear that my personal goods would be stolen. The various social and environmental issues that exist in places like these were brought to light by this encounter. Any significant environmental intervention must engage the community because human activity, pollution, and poor sanitation all have an impact on the river.

Hammanskraal Cholera Outbreak

In 2023, a terrible cholera outbreak struck the town of Hammanskraal, which is located just north of Pretoria. The epidemic brought attention to the region's long-standing problems with water quality, as locals have long had trouble getting access to safe drinking water. The neighbourhood is susceptible to waterborne illnesses since many people use shared taps or obtain their water from possibly contaminated sources.

Seeing these difficulties as a student of environmental science is both devastating and enlightening. It draws attention to how urgently better infrastructure and sustainable water management are needed. In addition to putting lives in jeopardy, the outbreak exposed socioeconomic disparities in access to necessities. Engaging with communities like Hammanskraal is crucial to understanding the human impact of environmental issues and advocating for lasting change.

This crisis serves as a stark reminder of the importance of safeguarding our water systems and ensuring that every person has the right to clean water, a fundamental human right and contsitute right of section 24 of South Africa that remains elusive for many South Africans.

Raw sewage flows into a stream, close to a day-care centre in Hammanskraal, Gauteng.

Acid Mine Drainage Spill from the Kromdraai Gold Mine

This picture is a powerful reminder of the fine balance that keeps communities and ecosystems alive. In my opinion, it captures the regrettable fact that human actions have the power to permanently change and harm the ecosystem if they are not stopped. Rivers are essential to many animals, including humans, and are more than just a supply of water. In addition to harming the natural environment, pollution and degradation also have an impact on the livelihoods and cultures that are entwined with these ecosystems.

The significance of water pollution in South Africa is best shown by this incident, in which acid mine drainage from the Kromdraai Gold Mine in Mpumalanga polluted the Wilge and Olifants Rivers. A failing concrete seal at the mine caused the leak, which is a case study for the larger problem of how mining operations may destroy aquatic life and water quality. The inability of the Kromdraai Mine to restore its site brings to light a persistent problem in South Africa: the lack of enforcement of environmental laws and disregard for sustainable mining methods.

Water is not just a resource we use; it is a reflection of our environmental practices and policies. As someone who is passionate about environmental sustainability, this incident hits close to home because South Africa is a water-scarce country, and contamination events like this strain our already limited water supplies. The loss of 23 indigenous fish species and the destruction of aquatic ecosystems are tangible results of neglect, which in turn affects everything from food security to community well-being. Moreover, the Wilge and Olifants Rivers are crucial to local communities for water supply and agriculture. Such pollution compromises public health, and the economic impact on communities dependent on these rivers is significant. I also think about the biodiversity that is lost, not just in terms of species

but also in the form of cultural and recreational connections that people have with these waters.

In the future, I hope that the knowledge gained from such disasters would lead to improved mining operations regulation, oversight, and rehabilitation. I specifically want environmental regulations to be strictly enforced so that mines are held accountable for the long-term effects of their operations. Additionally, I believe there has to be increased investment in sustainable water management systems that minimise contamination and encourage conservation. Water resources must be protected for future generations by striking a balance between environmental preservation and economic prosperity.

In addition, I envision communities—particularly those in mining regions—having the resources and information necessary to take an active role in safeguarding their water supplies. The development of a sustainable culture will be greatly aided by community-based projects and environmental education.

In conclusion, this acid mine drainage spill offers a chance for change even if it also depicts a sombre image of how mining affects South African waterways. By considering these environmental concerns, we may increase awareness and take action in the direction of a future in which ecosystems are permitted to flourish and water supplies are safeguarded.

The Invisible Lifeline(Hydrological Cycle)

Beautiful clouds and landscape of south Africa along N1, Limpopo It's easy to forget that water is all around us, even when we can't see it, when we look at the sky and the plants

below. I now understand the delicate balance that the hydrological cycle—the continuous flow of water through the atmosphere, land, and living things—maintains as a student of the field of environmental science. More than just a landscape is depicted in this picture; it also illustrates the connection between all life and water.

Water vapour rises in the sky to form clouds that will eventually release rain, refilling soils, rivers, and aquifers beneath the ground. This unseen type of water is essential for maintaining weather patterns and controlling Earth's temperature. This process is essential to the vegetation below, which cools the area and contributes to the stability of the local climate by absorbing moisture from the soil and releasing it back into the atmosphere through transpiration.

In addition to the water that is visible to us, biological water is the water that is held in every living organism. For the survival of the animals, plants that we see here on this image , and even me, the photographer, humans rely on a precise balance of water. Preserving rivers and lakes is only one aspect of protecting these natural processes; another is realising that water is life itself, moving through ecosystems in ways that are frequently imperceptible to the naked eye.

This insight makes me even more convinced of the significance of preserving the ecosystem. Every drop of water adds to the intricate fabric of life, whether it is visible or concealed in the atmosphere and living things. By preserving water supplies, we are securing a future in which life will persist, not merely preserving ecosystems. lets take care of the environment so that the environment takes care of us

My name is Jacob Matsobane Ledwaba, born and raised in Alexandra. I'm a passionate Environmental Sciences student with a vision for a sustainable South Africa. Deeply rooted in my culture and driven by purpose, I'm on a mission to lead in ESG, especially within the mining sector. Whether I'm blending ancient inspirations into unique fragrances or raising climate awareness with a touch of humor, I stay committed to growth, integrity, and impact. My personal motto: To educate and raise awareness about the rights people may not know they have—especially when it comes to their health and the environment

References

1 Hydrological Cycle and Water Vapor:

- Chow, V. T., Maidment, D. R., & Mays, L. W. (1988). *Applied Hydrology*. McGraw-Hill Education.
- Oki, T., & Kanae, S. (2006). Global hydrological cycles and world water resources. *Science, 313*(5790), 1068–1072. https://doi.org/10.1126/science.1128845

2 Biological Water and Ecosystem Function:

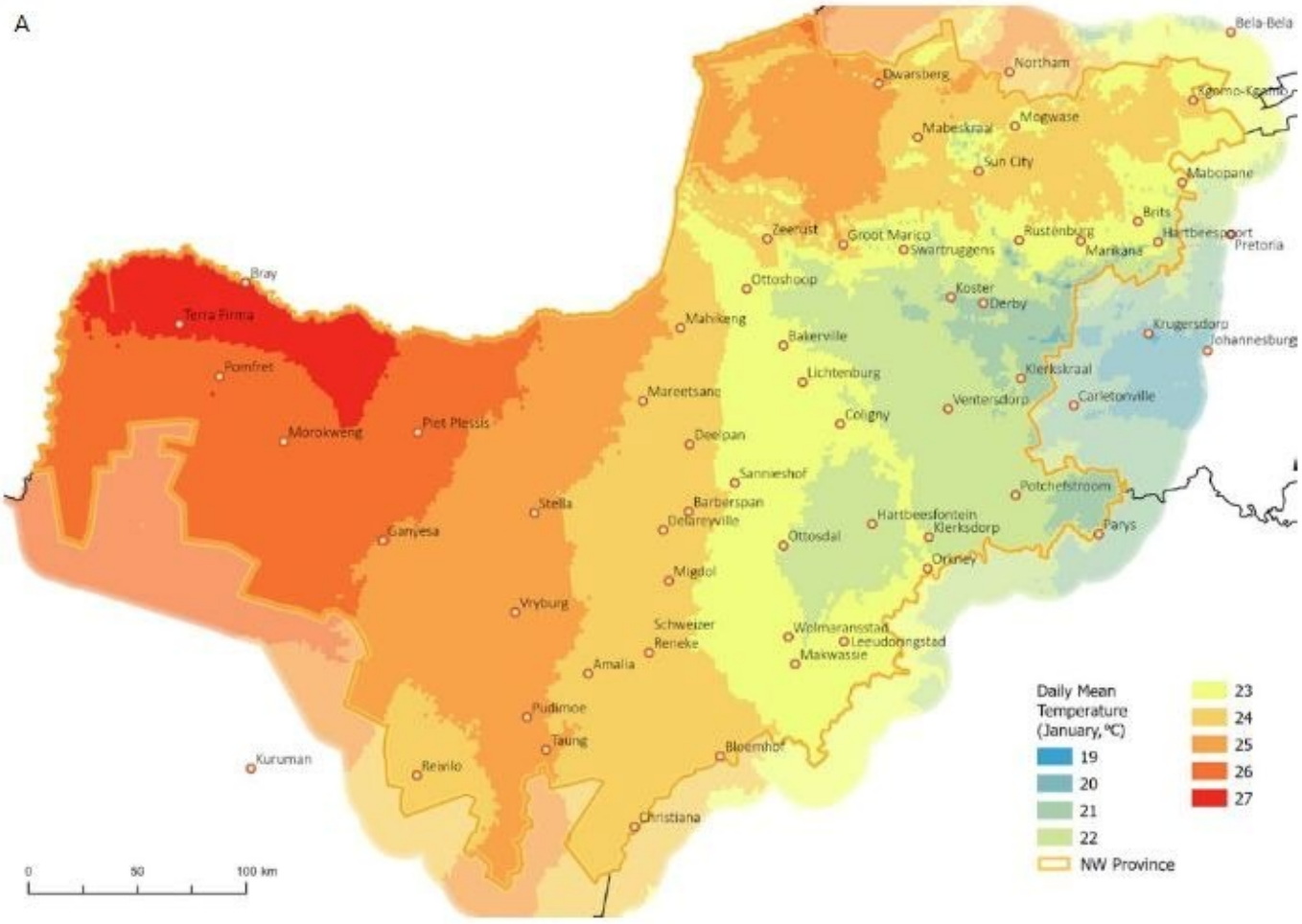
- Schlesinger, W. H., & Bernhardt, E. S. (2013). *Biogeochemistry: An Analysis of Global Change*. Academic Press.
- Taiz, L., Zeiger, E., Møller, I. M., & Murphy, A. (2015). *Plant Physiology and Development*. Sinauer Associates.

3 South African Context (Policy and Environment):

- Department of Water and Sanitation (DWS), South Africa. (2023). *National Water and Sanitation Master Plan*. Retrieved from: https://www.dws.gov.za
- Environmental Monitoring Group. (2020). *Water Governance in South Africa: Challenges and Opportunities*. Retrieved from: https://www.emg.org.za

Water Crisis in North West Province of South Africa: Exploring Causes and Impacts of Water Contamination, Droughts, Floods, and Beauty of Its Dams

Lizzy Keletso Moabi, Tshwane University of Technology



Rainfall Map Showing the Rainfall Gradient from East to West in North West Province. (Demest et al.2024)

It is predicted that this province will become much hotter than it is already and there will be more drought, heat waves every now and again flash floods.

I am from Schweizer-Reneke in the North West Province which has a mean annual rainfall of 360mm and is a town that experiences little rainfall annually.

Image1: Wentzel Dam Jannie Pretorious

The Wentzel Dam picture shows the effects of drought, stranded and helpless fish. I was very heartbroken by this devastating drought which affected our daily essential needs. Water is a basic need that no one, including animals, cannot live without.

Wentzel Dam is an earth-filled dam that is in Schweizer-Reneke in the Northwest Province. Schweizer-Reneke had low rainfall due to temperature changes that led to a drought at the dam. The dam's water level dropped drastically and affected residents, wildlife and marine life negatively with a high mortality rate of fish species. Water trucks were introduced to provide us with water, and we had to join long queues and carry heavy buckets of water daily, which caused physical fatigue. Sometimes we were turned away with empty buckets due to limited water supply, which caused significant anxiety and stress. The impacts were severe, our schools were forced to close and there were increased risks of poor hygiene practices and waterborne diseases such as cholera. Many of us (girls) contracted Urinary Tract Infections due to a lack of water for flushing toilets. Furthermore, there were crop failures, livestock, jobs and economic losses.

Image2: Bloemhof Dam Lebogang Blom

Bloemhof dam water appears clean and beautiful from a distance, however it's quite dangerous due to water contamination.

This dam it's one of the biggest dams in South Africa located in North West Province which covers a surface area of approximately 25 000 hectares. The are many rivers such as the Vaal that are flowing and contributing to the dam's massive storage capacity.

In the year 2014, Bloemhof Dam experienced water contamination which was caused by sewage spillage from Vaal River. In addition, there were deaths of three infants, an outbreak of waterborne diseases such as cholera and diarrhea, and agricultural devastation which was caused by contamination of water. Furthermore, this devastating outbreak disrupted the livelihoods of Bloemhof residents to such an extent that local businesses that relied more on water and schools were forced to close temporarily and hospitals were full of patients seeking waterborne illness treatment.

Image3: Geluskpan Floods Newsroom Africa

Flooded Geluskpan village with widespread damage of flooding due to intensive wet weather conditions.

Geluskpan dam is in Geluskpan village in Northwest Province near Mafikeng. In February North West Province was one of the provinces that had experienced extreme wet weather conditions. There was heavy rainfall, and the Geluskpan dam water level rose substantially, climate change was a key factor contributing to extreme wet weather conditions and flooding occurred.

The impacts were devastating and led to many houses being submerged by water, mud houses collapsing, the community losing their belongings, livestock drowned, and roads being significantly damaged. The rescue teams moved the community, including those who were trapped in their houses as they were waterlogged and moved to a multipurpose center temporarily. In addition, they were provided with sponges, blankets and food.

Image4: Disaneng Dam |

The front view of the Disaneng Dam shows its widespread algal blooms and poor water quality. Disaneng is an earth-filled dam in Disaneng, a rural village in the Mafikeng Capital City of the North West. The dam experienced algal blooms which decreased oxygen levels in the water, which distracted marine life and caused risks to human health due to pesticides, fertilizers, livestock waste from agriculture, untreated sewage and inadequate waste dumping from nearby communities, which made their way through runoff and introducing bacteria and other pathogens into the dam degrading water quality. In addition, agricultural productivity and residents who relied on fishing for sources of food and income were negatively affected. Food insecurity and unemployment occurred, which contributed to economic loss

Image5: Taung Dam

Detailed view of Taung dam showing atmosphere and its natural beauty. Taung Dam supplies its community with water for domestic, agricultural and various purposes. The dam is a habitat for various fish species and is surrounded by grassland that can support various bird species, which makes it the best attractive spot for watching birds and recreational activities like boating and fishing.

The dam is used for various spiritual, religious and cultural activities. Traditional healers known as sangomas perform initiation ceremonies in the dam to honor their ancestors, the dam water is used for healing purification ceremonies and many Christians perform baptism in it. The dam construction and maintenance created job opportunities for the local community and led to food security in agriculture which contributed to economic growth.

North West experienced heavy rainfall earlier this year. This should be an eye-opener for our local municipalities to improve the water drainage system to reduce the risk of floods and water treatment plants to reduce the provision of contamination of water. Pipelines that transfer water from areas of high water to our province experiencing drought. Water is life and it must be conserved.

I am Lizzy Keletso Moabi, and I am doing third year at Tshwane University of Technology, studying Environmental Science. I have always had passion for nature since my childhood. I'm very hands-on in our home garden which is surrounded by beautiful fresh flowers hence I persuaded my course.

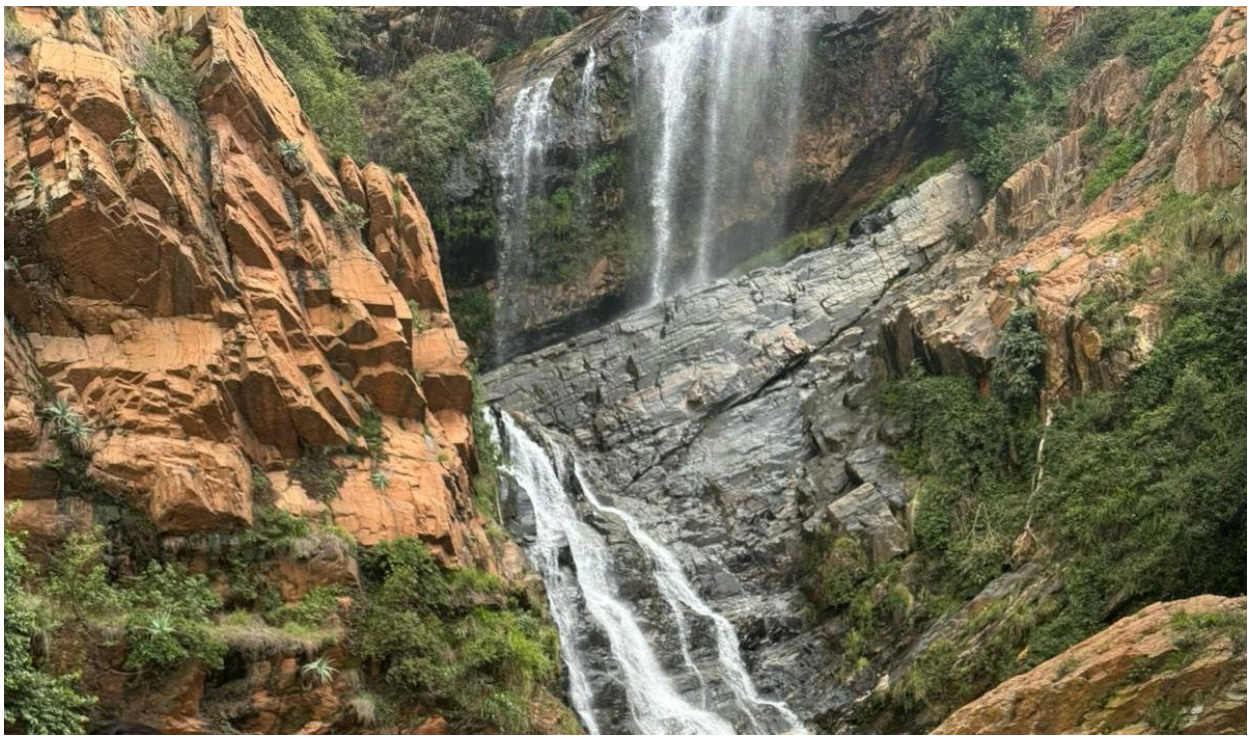
Water Bodies of South Africa and the Environment

Tshegofatso Seroka, Tshwane University of Technology

Figure 1:This picture was taken on the March 13th 2012 by my late Grandfather. This image captures the dried up river bed, illustrating the severe effects of prolonged drought on our local river.

This is a seasonal river that originates in the mountains of Ga Phasha village. It only flows during rainy seasons, but little patches of water are always available where it starts. It is surrounded by rocks of different shapes, sizes and colors. I photographed this picture because it is home to many organisms and for years it served as a primary source of water for the people from my villages. The river is special to me as it brings me closer to my ancestral roots, heritage and the place I grew up. The coal mining activities in my village have negatively impacted the Sebitja river. The chemicals and heavy metals from mining activities contaminated the Sebitja river rendering it unsafe for both humans and animals. This has not only impacted my life but it has impacted the lives of many villagers that rely on the river for drinking water, irrigation and other essential activities. Just like any other person in my village, I hope that the mine will find more sustainable ways to dispose their waste rather than disposing it in the river. I hope for a future where the sebitja river return to its glory and once again becoming primary source for drinking water for the villagers.

Mmakaunyane wetland is a wetland situated in a small village within the Northwest Province. This wetland gives moisture to surrounding vegetation and it also a source of water for livestock. Littering is a major problem in this small village, as it results in the pollution of the wetland which has caused the wetland to shrink over the years. Pollution of the wetland has profoundly impacted my life. As we know that wetlands have characteristics like sponges, as they absorb and suck up runoff water when it's raining preventing floods. However, since the village began polluting the wetland its ability to prevent flooding has been compromised. Leading to dire consequences as the village now experiences heavy flooding with floodwaters often entering homes. To mitigate and rehabilitate the wetland in future the community needs to make people more aware of the importance of wetland and how to use it in a sustainable manner.



The Walter Sisulu Botanical Reserve in Roodepoort, near Johannesburg is home to a breathtaking natural wonder, the Witpoortjie waterfall is surrounded by an array of rocks of varying sizes, colors and shapes creating a unique landscape. Near the falls is a hiking trail that offers a more scenic overlook to take in the natural beauty of the waterfall. Nestled within a secure nature reserve, the Witpoortjie waterfall is safeguarded under strict management, ensuring its long-term conservation. The sustainable management practices in place ensures the protection of its aesthetic appeal for years to come, allowing for future generations to marvel at its unspoiled beauty.

An intermittent river that originates in the mountains and flows between the villages of Moroke and Sehunyane in Limpopo. The picture shows a small sand dam made by the villagers, who created it by digging a hole in the sand or riverbank. By doing so, they are practicing a traditional approach to water collection, where they discard the initial dirty water and continue digging until cleaner water is reached. This method allows the community to access and collect clean water. The water that flows downstream from the small dam serves as source of water for livestock. The river also supports various farms located along its banks, providing water for irrigation purposes. The Motse river is one of the most pristine rivers in our region. Visiting the Motse river is always an uplifting experience, as I get to breathe in the fresh air and enjoy a serene environment, free from pollution. It makes me appreciate the efforts people make to collect and conserve water, and it reminds me of the importance of water conservation in my own life. I hope this river remains as pristine and beautiful in the future as it is today.

Figure 5:Meeting point where local rivers meet and merge to form part of the Olifants river.

The Olifants River is a vital watercourse in Southern Africa, serving as a significant tributary to the Limpopo River. Stretching approximately 540 kilometers in length, its basin area covers an impressive 54,570 square kilometers. Having grown up in close proximity to the river, nearly 15 kilometers from my residence, I have come to appreciate its invaluable contribution to our local ecosystem. The Olifants River's proximity to nearby villages has led to its utilization for domestic purposes, such as washing clothes, but unfortunately, this practice can result in domestic and organic pollution, harming aquatic life and depleting oxygen levels in the water. Moreover, livestock that drink from the river may ingest pollutants, potentially compromising their health. Notably, despite being a slow-flowing river, the Olifants River is surprisingly deep, posing a drowning risk to livestock that enter the river. In addition to domestic use, the River serves as a reliable source of water for irrigation, supporting farms situated along its banks. Many villagers also rely on the river for fishing, which provides a vital source of food and income. By raising awareness of the dangers of using detergents in rivers and adopting more sustainable practices, I envision a brighter future for our river and ecosystem.

I am Tshegofatso Seroka, an environmental science student at Tshwane university of technology. Growing up in a rural area, I spent my mornings exploring the woods and mountains foraging for wild fruits. These experiences instilled in me a deep appreciation for nature and sparked my interest in the environment.

The Impact of Water Pollution in South African Townships

Pumela Jafta, Tshwane University of Technology

Figure 1*: A contaminated body of water in a township in South Africa,* 03 March 2025

The picture illustrates a steady pool of water full of waste, illustrating the depressing reality of pollution. It represents the disregard for environment and its effects on communities, in my opinion. Environmental responsibility, public health, and disposal of waste are all directly related to this situation. It affects my life because I live in this township with My family and we often get ill due to this pollution. In future I hope better waste management will be a reality and access to clean water. May everyone within and outside My community value, cherish and respect the environment.

The Effects of Inadequate Water Management on Communities in South Africa

Figure 2 : *A swamp of sewage in a township, at Evaton West, South Africa,*

The image above expresses a semi-rural, swampy area with a drainage system. Stationary water from poor drainage can be harmful to the environment and human health. It symbolizes, in my opinion, the difficulties caused by poor management of water within South African communities. This is due to pollution which have an impact on our daily life and agriculture. Contamination and flooding affect the health of my neighbourhood. Better drainage systems, better infrastructure, and greater knowledge of water conservation are what I wish for. To guarantee that everyone has access to safe and clean water, I want those who read this to understand how urgently better water management is needed.

Finding a delicate balance between preserving wetlands and allowing human settlements

Figure 3 Ineffective drainage at Sonderwater, South Africa,

The picture above shows the relationship of nature and human settlement in a swamp close to a residential region. Ineffective drainage and environmental management are highlighted by the standing water and overgrown vegetation. It stands for, in my opinion, the necessity of environmentally friendly urban planning that preserves natural habitats. Communities are impacted by this condition because it reduces biodiversity and raises health concerns. Wetlands will hopefully be protected and incorporated into urban development in the future. I want other individuals to understand how important they are to preserving natural balance and providing assistance to wildlife.

My Home Water Back-up

Figure 4 : *Collection of drinking water from a storage tank, at Evaton West, South Africa,*

The picture highlights creative thinking and water conservation by showing a water storage tank dispense water into a bucket. It emphasizes the significance of sustainable water use, particularly in places experiencing water scarcity. It has to do with managing resources responsibly so that clean water is available for My family and I. It promotes thoughtful consumption and minimizes relying on municipal resources, this practice has a positive impact in my life. I envision a time where water-saving techniques and rainwater collection are common practice. I hope others will value every drop of water for sustainable living.

My name is Pumela Jafta and I was raised in the heart of the Eastern Cape's rural villages. I have a deep passion for education, a value rooted in my grandmother's story—she never had the chance to attend school, which has inspired me to pursue knowledge with determination. In my free time, I enjoy outdoor activities, especially picnics with friends and family.

Water in My Life and Environment

NL Ngonyama, Tshwane University of Technology

Ever since I was born, Tiyani village has suffered from water scarcity and many other surrounding villages. Our parents used to fetch water from a river that is two villages away every single day because the water bodies there were already dried up. When technology got a bit better only rich families could afford borehole drilling/water drilling inside their yards. The people who have boreholes at their yards started selling water, at the moment it costs R2 per 60 liter, a lot of community members just buy to avoid walking to a river that is two kilometers away. The only free water these people get, is the water collected when it is raining.

TIYANI Village, LIMPOPO.

The Toilets Don’t Flush

Everyone in the Tiyani village uses this type of toilet, it is just a deep hole, these type of toilets do not require water. They are normally a distance away from the house but still inside the yard since the smell is not so nice and they last for 20 years or more.

This picture was captured on the 19th of March 2024 in Tiyani village, Limpopo, by NL NGONYAMA.

The Polluted Kaalspruit River by NL Ngonyama on the 18th of March 2025

Water Pollution in The Kaalspruit River

The river is located in the Gauteng province, specifically flowing through the two townships of Tembisa and ivory park. This river suffers from high levels of pollution, including sewage leaks and litter, leading to poor water quality. The water is not suitable for drinking or even irrigation in long term. There have been efforts to clean up the river and address the pollution problem, including initiatives to clean up the area and clean-up campaigns but informal settlements along the riverbanks contribute to the pollution problem due to inadequate sanitation and waste management infrastructure. If only those people who reside in those informal settlements understood that taking care of the river means more water and a clean environment for them.I hope that the laws about pollution will be enforced

Droughts in the Limpopo province, South Africa.

South Africa has been frequently affected by droughts (leading to water scarcity) in the last four decades. Limpopo is a drought prone province which faces challenges of drought from time to time especially after the winter season. This country is grappling with an unprecedented drought triggered by El niño, a recurring climate phenomenon known for its capacity to exacerbate either dry or stormy weather patterns.

Droughts in South Africa severely impact people's lives by causing:
a. water scarcity
b. reducing food security
c. leading to economic hardship
d. increasing health risks, particularly for vulnerable populations.

In conclusion, promoting sustainable water management practices at all levels will be very helpful. Additionally, stricter regulations on water pollution, along with enhanced monitoring and enforcement, are crucial for protecting water resources. Public education on the importance of water conservation and the implementation of innovative technologies, can help mitigate these challenges. To whoever is reading this let us do better.

I, NL NGONYAMA, am passionate about writing reports about the environment. I have entered Young Reporters for the Environment in High school (YRE) and it was amazing. I am currently an Environmental sciences student at Tshwane University of Technology and i believe that I will obtain a great academic foundation when it comes to the environment here.

A Journey to Showcase South Africa's Water Woes and Wonders

Mamabolo Tshegofatjo. Tshwane University of Technology.

Embark on a journey that takes you from the depths of South Africa's water woes to the heights of its natural wonder. From water scarcity, and polluted rivers to stunning waterfalls. This reveals the connection between human activity and the delicate balance of our water sources. Join me as we explore the challenges facing by our country's water sources, while also appreciating its incredible wonders.

Water Scarcity

A true evidence and visible consequences of water scarcity in some communities of South Africa that impact lives everyday, whereby individuals including elderly people wait in long queues to have access to clean, adequate, and potable water. Regardless of The Bill of Rights stating everyone must have access to clean water, the situation remains persistent leading to some areas being affected by the outbreak of water diseases and resulting in violation of human rights. I'm deeply devastated by this reality. It is so heartbreaking to see one seeking water in this manner while knowing that water should be accessible to everyone. My hope for the future is a South Africa where everyone has access to safe water without fear and for people to know that water scarcity is not a local but global concern that needs a crucial attention and solution

Figure 1.1: Water scarcity is ongoing in the township of Seshego Juju Valley near the city of Polokwane in Limpopo Province by: Mamabolo Tshegofatjo,

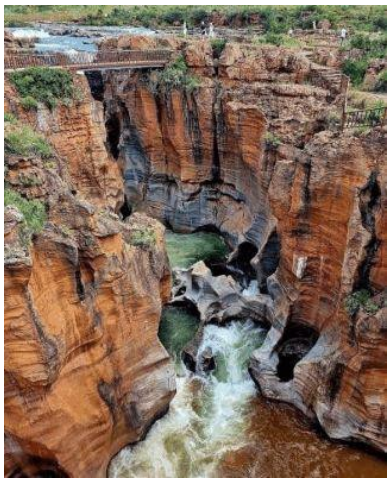
Apies River

One of the most significant rivers in Gauteng Province flows through Pretoria and sorrounding areas. The contaminated Apies River, due to urbanisation and human activities (illegaldumping) symbolizes the persistent water crisis that endangers the environment and surrounding ecosystems. This is an indication of our unsustainable practices that have contributed to the decline of water sources and have substantial effects upon present and future generations, and it feels me with a deep sense of sadness, as it reflects the neglect and harm. It is so

heartbreaking to see such a historical and cultural waterway suffer. I aim to spread awareness amongst people concerning the vulnerability of water sources and encourage them to work towards long-term sustainable solutions to conserve water. I hope for a future where rivers are clean, ecosystems are flourishing and everyone has access to safe and clean water.

Figure 1.2: Apies River in SANBI, National Zoological Garden Pretoria. Captured by: Mamabolo Tshegofatjo,

Bourke's Luck Potholes



A geological wonder caused by erosion of the Treur River, flowing through the reserve. Over millions of years, the river generated multiple cylindrical potholes in the bedrock. The place tells a story of resilience and adventure. These unique features, scattered across the province's rural roads, can be seen as bizarre, natural wonders that add to the region's charm. To me, they symbolise the resilience of the land and the natural spirit of Mpumalanga, where every journey through its winding roads is filled with surprises. This emphasises how important it is to conserve water sources, not just for present but for future generations. While these potholes might challenge travellers through their complicated routes, they also invite tourists to explore the gems of the province. The image encourages one to admire and conserve the beauty of our natural environment as they are essential to life. This unique sculpture makes traveling through Mpumalanga an unforgettable and adventurous experience.

Figure 1.3: Bourke's Luck Potholes, a geological wonder in South Africa located in the Blyde River Canyon of Mpumalanga province near the town of Graskop

Debengeni Waterfall

The name" Debengeni' translates to the" place of the big pot' in Northern Sotho, a majestic waterfall flowing into a large, pool surrounded by fertile greenery and indigenous forests. The place is peaceful with sunlight filtering through trees, highlighting the misty veil rising from the base of the falls. They represent a connection to nature's beauty and serenity.it symbolizes a place where one can escape the hustle and bustle of the day and find peace. The waterfall shows the region's untouched beauty and biodiversity. It highlights the importance of preserving natural wonders for future

generations and provides a sense of rejuvenation and appreciation. It aspires to support sustainable tourism practices. In future I hope that similar natural attractions will continue to thrive, with increased efforts to protect them from environmental degradation. The Debengeni Falls is not just a beautiful natural attraction but also a symbol of the importance of conservation and sustainable tourism. It offers a unique opportunity to connect with nature and understand the value of preserving our planet's nature.

Figure 1.4: Debengeni waterfalls, located in Magoebaskloof mountains just outside Tzaneen in Limpopo province, South Africa. Mamabolo Tshegofatjo,

Tshegofatjo Mamabolo, a third year Environmental Science student pursuing a diploma at Tshwane University of Technology. Passionate about sustainability and environmental conservation, and she hopes one day to become a well known environmental scientist.She is dedicated to finding innovative solutions to today's ecological problems. Beyond academics she actively engage in community activities and politics and hopes to learn more.In her space time she likes to read and listen to music.

Water’s Double Edge

Precious Selepe, Tshwane University of Technology

Introduction

South Africa’s water story is a paradox of beauty and decay, where Pretoria’s Botanical Gardens showcase thriving ecosystems and artificial water features, while the Hennops River in Tembisa chokes under sewage and industrial waste. Reservoirs
like Vaal and Gariep sustain livelihoods, yet aging infrastructure and pollution threaten their future. This contrast underscores a national crisis: how can a country with innovative water management in some areas fail to protect its most vulnerable communities? The answer lies in systemic gaps, climate pressures, and the urgent need for equity-driven solutions to safeguard South Africa’s liquid lifeline.

Waterfall

The Pretoria National Botanical Garden’s artificial waterfall was constructed in 1993 with sponsorship from Pretoria Portland Cement to enhance the garden’s aesthetic appeal and create a focal point for visitors. While primarily a landscaping feature, it contributes to biodiversity by supporting microhabitats for plants and wildlife in its surrounding forest area. The waterfall’s design integrates with the garden’s broader mission to conserve indigenous flora and educate visitors about ecological balance, aligning with SANBI’s goals of promoting environmental stewardship through managed natural spaces. Its presence also aids in water retention and soil moisture, indirectly supporting plant growth in the semi-arid Pretoria climate.

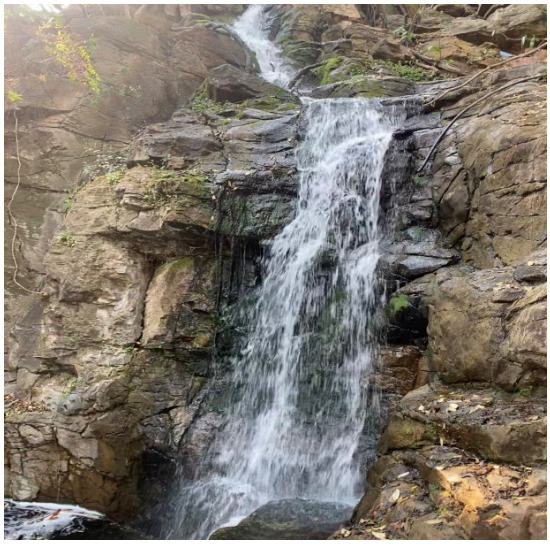


Figure 1: Pretoria’s Botanical gardens, credit: Precious Selepe

Ponds attract wildlife!

The Pretoria Botanical Gardens' ponds attract diverse wildlife by providing critical water sources in an urban environment. These artificial water features support aquatic species like common moorhen and Egyptian goose while seasonal breeding activity by bishops and weavers occurs during summer. The ponds also contribute to the garden's role as a wildlife corridor offering refuge for birds, reptiles, and mammals in a semi-arid climate. Their presence aligns with SANBI's conservation goals, enhancing biodiversity by sustaining microhabitats and aiding species like spotted-necked otters in wetland areas. This integration of water features exemplifies how managed ecosystems can bolster urban ecological resilience.

Figure 2: Pretoria's Botanical Gardens Pond, credit: Precious Selepe

Hennops River in crisis

The Hennops River's water quality is severely degraded by multiple pollution sources, including inadequate sanitation in informal settlements (e.g., Tembisa, Ivory Park), industrial runoff, agricultural contaminants, and sewage overflows, E-coli levels far surpassing safety thresholds—posing acute health risks from faecal contamination linked to blocked pipes, vandalized infrastructure, and ineffective on-site sanitation. Algal blooms (likely cyanobacteria) and microplastics further threaten ecosystems, driven by nutrient-rich sewage and agricultural runoff. While initiatives like litter traps and stakeholder collaborations exist, systemic failures in wastewater management and infrastructure maintenance perpetuate pollution, necessitating urgent, coordinated interventions to restore ecological and public health safety (Hennops revival.com).

Figure 3: Hennops River, credit: Precious Selepe

South Africa’s water reservoirs

South Africa’s water reservoir management is undergoing transformative efforts to address infrastructure gaps and climate resilience. The Department of Water and Sanitation (DWS) prioritizes dam expansions like the Clanwilliam Dam (18% complete) and Tzaneen Dam (38% complete) to boost storage capacity for irrigation, domestic, and industrial use (Selane E, 2024). New projects such as the Nwamitwa Dam and Foxwood Dam aim to secure future supplies, while the National Water Resource Infrastructure Agency (NWRIA) seeks to attract private investment for bulk water systems (DWS, 2023). The DWS also focuses on water board efficiency, benchmarking performance and fast-tracking projects like the Olifants Management Model to supply mines and communities by 2030. These initiatives align with the National Water Resource Strategy III, emphasizing equitable access, climate adaptation, and reducing non-revenue water losses through smart technologies (Rainbow Reservoirs, 2025).

Figure 4: Water reservoir in Kwa-Zulu Natal image by Patrick Mulyungi

Figure 5: Gariep Dam, photo credit by Department of Water and Sanitation

Conclusion

South Africa's water systems reflect contrasts between managed sustainability and urgent crises. Pretoria Botanical Gardens exemplify water stewardship, relying on boreholes and

artificial wetlands to sustain its waterfall and ponds without surface water dependency. In stark contrast, the Hennops River—polluted by sewage and industrial runoff—endangers Tembisa communities with E. coli levels exceeding safe thresholds, highlighting systemic infrastructure failures. Nationally, reservoirs like Vaal and Gariep support irrigation and drinking water, yet aging infrastructure and climate variability threaten long-term security. While groundwater and localized innovations offer hope, coordinated action is critical to address pollution, equity gaps, and ecological resilience.

My name is Makgabo Precious Selepe, and I'm a student at Tshwane University of Technology. I was born and raised in Gauteng, South Africa—Clayville to be specific. In my spare time, I enjoy coding and exploring new ways to solve problems through technology. I'm passionate about learning and constantly improving my skills in order to merge IT with Environmental science.

Water in My Life and Environment

Bongani Lucky SIngwane, Tshwane University of Technology

This research report highlights water-related challenges across several areas in South Africa, including Pretoria West, Saulsville, Parys, Hartbeespoort Dam (Harteis) and townships in Mpumalanga like Nkomazi and Tonga.

- Parys has long struggled with access to clean water, a problem that intensified post-1994, affecting water supply and quality for its residents.
- Pretoria, the administrative capital, faces significant water issues despite being served by Rand Water, a major utility sourcing from the Vaal River system. Multiple factors contribute to these challenges.
- Nkomazi and Tonga (Mpumalanga) are culturally vibrant townships grappling with prolonged water scarcity that demands consistent attention and solutions.
- Saulsville, water shortage in this area began around 2024 and is still an ongoing problem.

Image 1: Student accommodation faces water scarcity. Pretoria West. Photo by: Singwane Lucky Bongani

A student accommodation in Pretoria West is shown with multiple large water storage tanks and filtration units, showing efforts made to address water scarcity in the community of Pretoria West. The presence of large water storage tanks indicates a focus on collecting and storing water. The filtration units suggest efforts to ensure we have clean and safe water for consumption as students. Without access to clean water, we would be at a higher risk of waterborne diseases like cholera and diarrhoea. Which can lead to frequent illness, making it difficult to attend classes regularly and to stay focused on my studies.

Image 2: Dirty water coming from the taps of residents in the township of Parys.

Dirty water is shown in the above image coming from the tap of residents in Parys. I live in this township, and we sometimes rely on one another to access water as this is a basic need and not everyone in the community can easily have running water from their taps. We are forced to improvise strategies like filling as many buckets as we can so that we have enough water for a certain period. The water usually comes out dirty and in an appropriate colour as shown in the above image indicating that the water is undrinkable.

Image 3: While the dam holds water, contamination threatens its life-giving potential, Hartbeespoort dam. Photo By: Singwane

This is an image taken by me at Hartbeespoort dam, to show how the dam faces significant environmental challenges, including pollution from urban and industrial areas, with contaminants like heavy metals and pesticides threatening human health and the ecosystem. Invasive plant species (the green plant species on top of the surface of the water) have spread across the water, blocking sunlight, reducing oxygen levels, and disrupting the natural balance. The dam is a vital water resource for agriculture, industry, and domestic use, but increasing demand and droughts strain its capacity.

image 4: Scarcity of water around Nkomazi and Tonga in Mpumalanga.

The two tanks in the image indicate the scarcity of water around Nkomazi and Tonga in Mpumalanga. This issue has forced some of the residents to buy tanks to store water as it can take up to two weeks or longer without water. As state of the water is not guaranteed to being clean when it comes out, some people pay money for clean water carried by a truck that transport clean water while those who are unfortunate often must walk long distances to collect water from potentially contaminated ponds and wells, which are sometimes shared with livestock. This situation is really heart-breaking as the community has even reached a point whereby local activists and community leaders have been working together to address these water issues.

image 5:Tshwane residents have to travel to fetch water due to rand water restrictions, Saulsville, photo by James Mahlokwane

In this image, Saulsville residents are forced to fetch water from a community hall as they waited for water pressure to be restored in their homes. From the interview I conducted, Ntateko one of the community members, said that the water shortage prevents them from completing activities like washing, cleaning and other activities. With this matter being constant, we as people may end up having waterborne diseases. Factories may shut down as water is needed to operate factories. The economy of our country will drop due to the shutting down of factories and loss of jobs.

I am Bongani Lucky SIngwane, a traveler at heart, always chasing new experiences and discovering the beauty of the world. Studying Environmental Sciences has deepened my appreciation for nature and the need to protect it.

Ripple Effects Essay

Ntsakisi Chauke, Tshwane University of Technology

Figure 1Vaal River taken by Ntsakisi Chauke

The Vaal River

The Vaal River is the 3rd largest river in South Africa, It is also the second longest river entirely within the borders of South Africa. It was established as the primary source of water for the great Witwatersrand area after the 19th-century gold rush. Historically, the Vaal was used to decide borders between provinces and was the site for many bloody battles. Now, The Vaal River offers cruises where you can “come and chill with your family and friends on a sweet Sunday to experience a Vaal River cruise on South Africa's best river boat”

The Jukskei River

Figure 2 Jukskei River taken by Ntsakisi Chauke

The Jukskei River is one the largest rivers in Johannesburg, South Africa. It discharges the largest amount of water into the Crocodile River basin, which eventually discharges into the Hartebeespoort Dam and the water eventually ends up in the Indian Ocean. High nutrient concentration in the Jukskei River have been blamed for the eutrophication of the Haterbeespoort Dam as the Jukskei River is a tributary of the Dam. Water quality problems of the Jukskei(high bacterial load) are related to urbanization (Van Veelen 2002). The potential for flooding and changes in water quality are expected to have a direct correlation to the changes in surface coverage of the built environment surrounding the Jukskei River.

Figure 3Haterbeespoort Dam taken by Ntsakisi Chauke

The Hartbeespoort Dam

The reservoir is fed by the waters of the Crocodile River and Magalies River and covers approximately 18.83 square meters, with a mean depth of 9.6 meters and a maximum depth of 45.1 meters. The Hartbeespoort Dam is a vital water resource for the Noth West province of South Africa. The Dam provides water for irrigation, hydroelectric power, and drinking water. The Dam is also a popular tourist destination. The invasive, persistent plant choking Hartbeespoort Dam water is hyacinth, A non-native species that has been a problem there since the mid-1960s. The hyacinth forms dense mats on the waters surface, impacting boating, fishing, water sports, and aquatic biodiversity, as well as reducing oxygen levels and sunlight penetration.

The Walter Sisulu Botanical Gardens Waterfall

The Walter Sisulu Botanical Waterfall, Known as Witpoortjie Falls is a 70-meter-high natural wonder located in Rooderpoort, South Africa. The falls are at the source of the Crocodile River which flows into the Haterbeespoort dam. The waterfall serves as a centerpiece of the garden, attracting visitors with its beauty and providing a habitat for diverse flora and fauna. The waterfall and surrounding garden is a popular destination for nature lovers, photographers, and families. The waterfall plays a crucial role in the ecosystem as it is a water source, provides moisture for surrounding plant life, and creates a microclimate that supports unique flora. The garden has great picnic spots to enjoy after your hike, with the waterfall being at the end of the hiking trail to enjoy as a view.

The Apies River

Is a river that flows through the city of Pretoria, South Africa. Its source is located just south of the city and it flows northward until it drains into the Pienaars River. The quality of the water has reached critical. The Apies River which is meant to be the main water source and meant to sustain the communities water needs, has been degraded to the point where the water is not fit for human consumption. Reportedly, the treatment plant, which is responsible for treating and processing 45% of Tshwanes wastewater is actively emitting effluent into the river, thereby contaminating it.

Figure 4: Apies River taken by Ntsakisi Chauke from the bridge on Church street Pta central

I am Ntsakisi Chauke, A third year student in environmental sciences at the Tshwane University of Technology. I am driven by a passion for environmental sciences and the desire to create a sustainable future.

Water Scarcity in South Africa.

Sonto T Mabuyakhulu, Tshwane University of Technology

In the building near my residence(Sunny Lodge) there is no water and electricity. The above picture shows how they get water. I took this photo during a heavy rainfall that we experienced on the 1st of March 2025 in Pretoria. When it is raining they put big plastic bags on the mouth of their building's water pipes because they can’t put a bucket as the distance between the water pipes and the ground is too short. Water gets into a plastic bag, when it is full they pour it in their buckets as you see in the photo.

In the above photo there is a photo of a water source by the name of “Lamyayi”. I asked my younger brother to take a picture of “Lamyayi” for me. In my village in KZN we don’t have water and electricity. This source of water plays a crucial role in supplying us with water. We use it for drinking, cooking and all other households. We usually put stones and logs so that livestocks such as cattle and goats will not get inside our clean water. During hot dry winter, water becomes limited thus others have to go to the boreholes.

This is a picture of the Apies River in Marabastad, one of the places in Pretoria. On the side of a river you can notice that there is waste dumped near the river. Which can eventually become eroded into a river when there is heavy rainfall. This is done by people who stay here and will cause blockage of the bridge when time goes on. I decided to write about this place because I was thinking of placing boards that will notify anyone who thinks of dumping here that they will be fined or imprisoned.

From 10 to 16 of March 2025, there was a free entry in the South African National Biodiversity Institute (SANBI) National Zoological Garden in Pretoria. My friends and

I decided to go on the fourteenth. I was surprised to see an amazing waterfall and it was my first time going to the zoo. Then I said no, let me take a picture of this waterfall so that I can show people from other countries how beautiful nature is in my country. Hearing the sound of water splashing the rock was so amazing and it brought a peace of mind.

My name is Sonto Thabitha Mabuyakhulu. I'm from the small village in the province of KwaZulu-Natal in South Africa. I am doing my third year in Environmental Science at Tshwane University of Technology.

Ripple Effects Essay

Nsuku Honwani, Tshwane University of Technology

Photo: Sipho Kings

The photo depicts the Jukskei river, flowing through Alexandra, a highly populated township in South Africa. The river is littered with trash, this represents the issue of poor waste disposal methods and environmental degradation. This pollution deteriorates water quality and harms both humans and animals. This represents the need for clean water and improved waste management. Polluted water threatens health and limits access to safe resources. In future, I hope to see cleaner rivers because of efforts made by people and better infrastructure. I want individuals to understand the need for water conservation and sustainable usage worldwide.

The photo shows the Hennops Riverside, which is polluted with plastics, clothes and trash, caught up in the roots of along the riverbank. This is likely a result of flooding, which carries the garbage downstream and deposits it as the waters recede. This illustrates the severe impact of poor waste disposal to natural ecosystems. It relates to the global water crisis by highlighting how pollution plays a role to the decline in water quality, endangering local communities by contaminating water. I envision a future wherein communities are adopt proper waste disposal methods, keeping our rivers clean healthy.

This is a picture of a river near Buffelspoort Dam, a glimpse of how pollution begins. There are merely two items of litter in this photo, yet this is how it begins, small items that turn out to be big problems. Water pollution is everywhere, threatening ecosystems and our future water supply. Clean water is already scarce, and every item of contamination worsens the situation. We need to have greater environmental education and legislation. Even the smallest of habits, like disposing of waste accordingly, will make a difference. Small actions today will ensure future generations have cleaner water.

This picture portrays a lake in at our campus TUT (Pretoria west), surrounded by vegetation and reflecting the blue sky. The water creates a calm atmosphere, allowing space for relaxation and coexistence with nature. Although the lake remains a beautiful natural feature, the water is turbid, highlighting the need for ongoing conservation. It is important to keep natural places like this clean and thriving. Small efforts, like reducing improper waste disposal, assist in making the environment cleaner. As long as we continue to protect and maintain our water sources, we can create a better and safer world for generations to come.

This is a picture of the Apies River flowing through the Pretoria Zoo, surrounded by beautiful trees, consisting of small waterfalls. However, Pollution is a huge issue, plastic, and other rubbish is scattered along the riverbanks and the river itself. This is reflection of a growing issue where human negligence harm natural water sources. This pollution is concerning because it destroys the environment and it is detrimental to communities relaying on clean water. Cleaner rivers in future is what we need, if individuals can reduce the amount of pollution, water supplies can remain safe for human and animals.

Nsuku Honwani is currently pursuing a Postgraduate Diploma in Environmental Sciences at Tshwane University of Technology. She was born in Bungeni village (Limpopo province). Nsuku holds a BSc in Environmental Sciences from the University of Venda. Driven by an interest in sustainability and environmental conservation , she wishes to make a difference through meaningful environmental projects. In her spare time Nsuku enjoys drawing and reading novels.

The Dynamic Nature of Water Resources and Community Resilience in South Africa

Chokoe Tlou, Tshwane University of Technology

Water is vital and the world's water systems face significant challenges which threaten the quality and availability of water. In South Africa, these issues occur due to water scarcity, pollution and infrastructure challenges. Ensuring sustainable water management through the policies, infrastructure management and community engagement is important for enhancing the community's resilience to environmental, economic and social challenges.

A beautiful tourist attraction waterfall is surrounded by lush greenery, representing a calm oasis, and is home to a 1000-year-old Fig Tree. The sound of flowing water mixes with the sound of birds makes the scene feel peaceful. It is exciting to see the waterfall serving its purpose. The waterfall is a protected area which aims to maintain local flora and fauna. It offers the hustle and bustle getaway of urban life. I hope the waterfall will continue to serve as a shelter for local wildlife. I want my audience to know the importance of conserving our environment to avoid the extinction of local species.

FIGURE 1: Wonderboom Waterfall which is situated in Wonderboom Nature Reserve, in the North of Pretoria.

A heavily polluted dam due to agricultural and industrial runoff flowing into the dam and waste-water treatment plants that are non-compliant leading to the growth of algae and hyacinths. The dam is an important water use that provides the community with water for domestic use, irrigation and hydroelectric power and is known for its natural beauty and recreational spot. However, the dam is subjected to fluctuating conditions and the need for adaptive management when various challenges occur. Exposure to polluted water impacts aquatic ecosystems, crop yields and the health of the community. I hope that the Centre for Biological Control continues to do a Root Cause Analysis and rehabilitation program to revive the dam. I want people to know that pollution is not an isolated issue therefore we must work together to find solutions that balance the needs of communities and the environment.

Figure 2 Hartbeespoort Dam in North West Province, South Africa.

Illegal dumping in Apies River results in the formation of algae blooms, E. coli bacteria, loss of biodiversity and recreational value. The picture emphasizes the connection between human activities and the natural world. It is disheartening to see the state of the river like this since some residents rely on it as a source of drinking water. I hope the river will be restored to its natural state of a thriving ecosystem and improved livelihoods to promote sustainability. I want people to know that the way we dispose of waste matters as it has a profound effect on the environment around us and that changing our daily life for the better will help us advocate for environmental conservation.

Figure 3: Apies River in SANBI Zoological Garden Pretoria

The temporary solution of building artificial barriers and reinforcing damaged infrastructure to redirect floodwater away from houses. It is frustrating to see people from rural areas protecting their buildings from natural disasters without the interference of the government. Although sandbags are cost- effective, they are not suitable to be used as a flood-resistant material as they cause pollution over time. The strategy demonstrates the ability of the community to respond quickly to immediate risks and protect livelihoods. I hope that in the future the community in rural areas have access to proper roads and use advanced technology to mitigate disaster risks. Moreover, the community must use integrated management systems to balance the immediate needs with long-term resilience strategies such as floodplain zoning. I want people to know that it is important to come up with initiatives that are environmentally friendly and consult with the municipality for comprehensive solutions.

Figure 4: The use of sandbags to divert water away from buildings and stabilizing roads in Ga-Thoka, Limpopo.

Figure 5: Villagers fetching water from a small well in Ga-Masemola, Limpopo.

Ongoing water crisis where residents share drinking water with animals due to broken promises from the municipality. The image shows the failure of basic human rights and the resilience of people who fight for what should be given. It is unfair that communities still lack access to necessities which can lead to diseases such as Cholera. I hope that clean water will be a privilege and guaranteed right for everyone in Ga-Masemola and beyond and that sustainable solutions such as boreholes and upgraded water infrastructure can be implemented. I want people to know that access to clean water is not just a basic need but also a shared responsibility and that water scarcity is not only an environmental issue but also a social justice issue.

Chokoe Tlou is a third-year Environmental Science student at TUT. I am passionate about sustainability, conservation and how human actions impact the environment. I have gained knowledge in climate change, ecosystems, and environmental management. I hope to use what I have learned to help communities live more sustainably.

Effective Water Management Strategies Are Essential to Address the Growing Issue of Water Shortage in Rural South Africa

Chuene Mmabatho Verity, Tshwane University of Technology

Figure 1: Sediba Sa Mohlalekoma, a riverbed in a rural Jane Furse in Limpopo Province South Africa, a water source for population around the village. Captured by Chuene.M.

It is essential for humans for drinking and washing, cows for drinking, for religious purposes and for the vegetation around. Sediba Sa Mohlalekoma forms a beautiful valley that is both a natural beauty and an essential supply of water for the areas as it meanders through the mountains around. Along its banks, it sustains a variety of ecosystems that serve as a home to a wide range of humans, plant and animal species so it supports better water quality in the area. By providing water for home and agricultural purposes, it also plays a vital role in the surrounding communities, because of its peaceful setting, the Sediba Spring water is always clean and healthy for drinking purposes. The riverbed does not have any environmental problems, so it supports an effective water management strategy. It is guaranteed that this essential waterway will continue to be a sustainable resource for present and future generations.

Figure 2: Mogodi river in Lebowakgomo, Limpopo, South Africa, displaying both a polluted and none polluted section of the river. Photographed by Motloutsu.K,

Human activities have degraded the environment and waste management is ineffective, thus poor river management leading to the crisis of water in the village. Disposable diapers and other plastic waste are visible. It deals with the problem of water pollution, which is a significant obstacle that has an impact on the well-being of ecosystems and communities because it contaminates water, produces breeding grounds, and pollutes the air. The health implications include the spread of faecal-oral illnesses like cholera and typhoid.

Seeing the polluted river as an environmental science student has motivated me to act in reducing plastic usage by informing people to conserve the river and advocating for cleaner environments in the village.

Figure 3: Hennops river, a water distribution point in Olievenhoutbosch, Centurion, South Africa, that is crucial stream with a rich past and major environmental issues. Taken by Rampedi.S.

The Hennops River flows through Olievenhoutbosch in Pretoria, South Africa, because it supplies water for domestic, industrial, and agricultural purposes, thus it has been essential to the communities that live along its banks with a rapid industrialisation and urbanisation, however, people have seriously contaminated the river with litter, untreated sewage, and industrial effluents, causing eutrophication issues in water bodies downstream. It is nevertheless a well-liked destination for outdoor activities like hiking, fishing, camping, and picnicking despite these obstacles.

To create a sustainable environment for coming generations, community organisations and non-governmental organisations are constantly working to clean up hence maintaining water quality and restore the river's natural beauty.

Figure 4: Rietvlei River, a nature reserve that supplies local communities with water, and that is home to a wide variety of animals, including many bird species as water is not scarce nor contaminated. Gauteng South Africa,

It offers peaceful respite from the rush of the city, including guided walks, fishing, and picnics, and is essential to conservation and environmental education about water management strategies to address the growing issue of water shortage.
Both locals and visitors like visiting the reserve because of its beautifully maintained trails and picturesque surroundings.

To ensure that future generations can continue to appreciate this unpolluted water environment, efforts must be taken to protect Rietvlei dam's biodiversity and natural beauty.

The reserve serves as evidence of how crucial it is to preserve urban natural environments.

Figure 5: Roodeplaat Dam, a peaceful river site that provides the ideal balance of recreational

opportunities, beautiful

It was first built to provide water for nearby landowners, but it has since developed into a crucial water source for the Pretoria region and a popular site for nature lovers. There are special attractions where the dam is located. It is a paradise for lovers of water sports, offering canoeing, sailing, and fishing facilities. Along the waters edge, there are picnic spots, braai areas, and simple campsites, making it a great place for family vacations. Its importance goes beyond recreation and is essential to water management. The natural balance of the dam is still being maintained despite obstacles like eutrophication, which has caused algal bloo ms and the proliferation of water hyacinth.

I am Chuene M, living in SA and studying at TUT. I am deeply passionate about preserving the natural beauty and biodiversity, my focus is mainly on addressing environmental challenges like pollution, particularly its impact on water bodies and ecosystems, and how effective water management strategies can be essential to address the growing issue of water shortage in rural SA. Through my work and writing, I aim to inspire meaningful actions that safeguard nature for present and future generations.

Exploring South Africa’s Diverse Landscapes: “A Photographic Journey”

Nosipho Makasi, Tshwane University of Technology

Image 1: Isimangaliso Wetland Park, located in KwaZulu-Natal. Photo by iSimangaliso Wetland Park Travel, Lonely Planet website.

Isimangaliso Wetland Park, a UNESCO World Heritage Site, is a wonderful example of South Africa's natural beauty. This wetland in KwaZulu-Natal serves as a shelter for wildlife while also controlling the region's water cycles and decreasing flood hazards. As I think about the wetlands, I am reminded of the careful balance between conservation and human needs. However, we must not forget the devastating floods that have occurred in KwaZulu-Natal in recent years; while I do not reside in that area, the thought of the people losing their homes and livelihoods is heartbreaking. Despite its many advantages, it encounters various challenges, including climate change, overtourism, and human-warrior conflict, according to my research, leaving me wondering if it has lost its natural filtering function. I would like the competent authorities to act and bring about change. We, the people of this country, continue to promote sustainability to all of nature's powers, especially in a country with limited water resources like South Africa, and celebrate World Wetlands Day on February 2nd, reflecting to the Ramsar Convention's original history, which highlights and reminds us of their importance.

The Cacadu River, located in the Eastern Cape province, is used by the locals for water when the JoJo tank, filled by rain, is depleted. Passes ekhaya (home) Mdlankomo, a small settlement, has been without tap water for over 20 years. The nearby rivers are not purified or safe for consumption, and family members from Gauteng have experienced adverse reactions from drinking or bathing in the water. They would transport 5L bottles or purchase water to dilute the river or JoJo tank water to mitigate these effects. The path to the river is steep and dangerous, so the author urges the government to ensure access to water resources for all rural communities.

Image 2: Cacadu River located in the Eastern Cape province, is utilized by the Mdlankomo community. Photo by Nosipho Makasi

Image 3: A welcome relief and of water and sanitation

The Vaal Dam, located on the Vaal River in South Africa, covers 300 km and has approximately 800 km of shoreline. It is the third-largest dam in the country and an important source of drinking water for the Gauteng province. According to the Department of Water and Sanitation, water levels have risen from 61% to 120% capacity during the last week due to sustained stabilization of the Vaal Dam in Gauteng resulting from persistent heavy rainfall. Photo by Department rains. With this increase, hopefully, the government has planned for water management measures to mitigate any flood threats. It has enhanced the Vaal Dam's storage capacity and stability, and hopefully, it will help relieve Gauteng's water issue. I have had a lot of experience in my prior accommodations in Pretoria Central and the Arcadia region, needing to move to other connected accommodations with water and purchasing water for consumption. I urge the government and relevant bodies to treat this subject seriously and let the rising water levels mark the downfall of Pretoria's and other regions' water crises. And as a reminder for people to use water in a responsible and controllable manner.

Image 4: Port St Johns' second beach illustrates the adage "happiness come in waves". Photo by Nosipho Makasi

Port St Johns' Second Beach is more than simply a lovely stretch of shoreline; it is my home beach, located between the impressive Umzimvubu River and the Wild Coast's hills in the Eastern Cape province. The salty breeze and smooth sand bring back memories of family trips in December. This beach is not only a cultural and spiritual treasure for the local African people, but it is also a nature peace and a place to unwind. I appreciate the work of the lifeguards, shark spotters, and maintenance workers in keeping our beach safe and clean, allowing us to continue enjoying our precious moments together. I hope it remains as lovely and ideal as it is today, as it is a vital aspect of the cycle of life.

Image 5: The forgotten river and erase of culture heritage, Lion Bridge located in Gauteng, Pretoria. Photo by Nosipho Makasi

As I frequently walk past the Lion Bridge, located on Helen Joseph Street in Arcadia, Pretoria, I am reminded of the devastating impact of pollution on our environment. The bridge, which spans the Apies River, has become an eyesore, with trash and debris accumulating beneath it. What's more alarming is that this bridge is, in fact, an old national monument and heritage site. The pollution has not only erased the cultural value of the bridge but also raised concerns about the safety of water utilization, particularly for agricultural activities. It’s disheartening to see the Lion Bridge's environmental beauty being destroyed. Despite previous investigations and evaluations, no tangible steps have been taken to address pollution, I urge authorities to take immediate action. As citizens, let's work together to restore the bridge to its former glory.

South Africa's diverse water landscapes are vital to its ecosystem, economy, and culture. They support rich biodiversity and provide essential resources. Prioritizing sustainable management and conservation is crucial for a resilient future for all South Africans.

I am Nosipho Makasi, environmental science student at Tshwane University of Technology. Growing up surrounded by nature, I developed a deep appreciation for the interconnectedness of our ecosystem. As an aspiring environmental scientist, I recognize and observe the importance of Mother Nature and its landscapes to the cycle of life. My focus is on South Africa's landscapes, and I thrive on honouring the elements and working to develop an integrated and sustainable ecosystem. Through my work, I aim to advocate for environmental stewardship and promote sustainable practices that prioritize the well-being of our planet.

The Apies River flowing through Pretoria, South Africa

Makuwa Lebo, Tshwane University of Technology

Pretoria, the administrative capital of South Africa, is a city steeped in history and natural beauty. One of its most treasured assets is the Apies River, a watercourse that flows through the heart of the city and has many educational opportunities.

History of the Apies River

The Apies River's name is derived from the Afrikaans word "apies," meaning "monkeys," which were once abundant in the area. Over time, the river has played a significant role in shaping the city's history and development.

In the early 19th century, the Apies River was a vital source of water for the local community. The river's waters were used for irrigation, drinking, and other domestic purposes. As the city grew, the river became an important landmark, with many buildings and roads constructed along its banks but today it is under appreciated and neglected.

Ecological Importance

Although the Apies River today runs through a concreted channel in parts of the city it remains an important ecological asset as it serves as a biological corridor linking islands of indigenous vegetation in Pretoria. The river is used by birds, genets, bush babies and on the odd occasion vervet monkeys may still use it. These animals feed on wild fruits such as figs and disperse these along the river and to other areas. Unfortunately, the river's water quality has been impacted by pollution from urban runoff, fertilisers and pesticides used in manicured gardens and frequently sewage might also end up in the water due to blockages or failing infrastructure. The river flows naturally through the National Zoological Gardens in Pretoria and this would be an excellent place to have a litter boom to remove polystyrene trays, plastic bags and other garbage that is collected by the Apies River.

Also this would be a good opportunity for SANBI the manager of the zoo to raise awareness around keeping rivers clean

The Apies River flowing through the National Zoological gardens in Pretoria could be very attractive if it was cleaned of litter.

Lions Bridge: A spectacular landmark

One of the most iconic landmarks along the Apies River is the Lions Bridge, located near the Tshwane University of Technology Science campus where I have class. The bridge was built in the early 20th century and features four majestic lion statues. The Lions Bridge offers a view of the Apies River and water birds can often been seen there. It is also used by homeless people for bathing and is a stark reminder that life can be very hard. Despite its ecological importance and potential for recreation the Apies River faces several challenges, including pollution, the spread of invasive plant species.

I am Makuwa Lebo, born and raised in Tafelkop, a beautiful village in the Limpopo province in South Africa. I'm a passionate third year Environmental Science student studying at the Tshwane University of Technology, driven to understand and mitigate the impact of human activities on the environment. Eager to apply knowledge and skills to promote sustainability and environmental stewardship.

University of Louisville, Louisville, USA

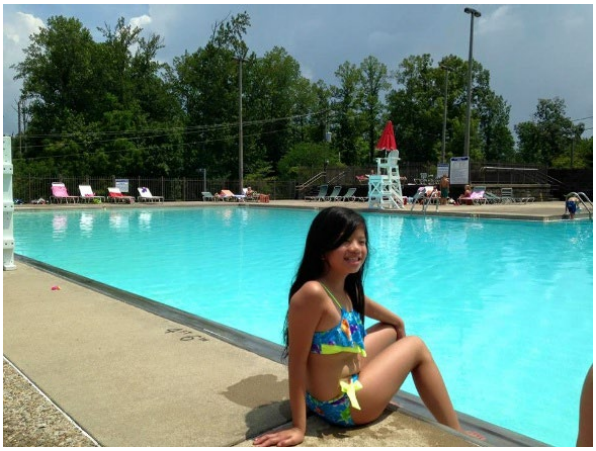
The students from the University of Louisville involved in the Ripple Effects project were taking the "Texts and Technology" course. This is a capstone course for the undergraduate major that focuses on explorations of ways in which materials, culture, and genre shape the way we read and write. The course explores both the history of writing and technology – including disruptions and innovations – as well as current issues shaping our lives and how we can respond to these in creative and critical ways. The 15 students in class were from all three undergraduate major concentrations – Creative Writing, Literature, and Professional and Public Writing. In addition to the Ripple Effects project the students produce a major research project and several other writing projects. The class was taught by Dr. Bronwyn Williams https://bronwynlwilliams.com/

What Water Can Do – What Can We Do?

Hannah Topper, University of Louisville

Leadville has the best tap water was something I always heard my parents say in passing. We lived in Colorado, at the time. The Springs. Which is where my parents relocated before adopting me. But they would always tell me stories from when they lived in the small city where everybody knew each other by first name, when my dad was still prosecuting. And in my twenty years of living, I've never been. I've never tried the tap water so famous among my family.

We made the move to Kentucky a few weeks before my birthday. I would turn eleven. Start middle school in a brand-new state. My dad spent the summer looking for a job and, in the meantime, took me to the pool, belonging to our neighborhood, every day. We walked in the high-noon humidity so we could cool our bodies in the communal bath until it was time to go home to eat. In my sixth-grade yearbook photo, my complexion is the tannest it has ever been.



Bottled water we have at the ready for students to take if they're thirsty. Don't worry, there's more in the fridge – not pictured.

I now study Philosophy at University of Louisville. I have yet to leave Kentucky; and it hadn't occurred to me that water was a privilege until I started my studies. Growing up in the States, water was all around me. Even inside, such substance was always present. Constantly running through the pipes of buildings. Offered in the bottled, sparkling, or tap variety. Put on-display, even. A certain medium some artists subscribe to.

I no longer bring a re-usable water bottle with me to school. Not when there are tens, hundreds, millions of pre-packaged ones waiting for me for free. I take one from work whenever I please. Grab another, just in case. But don't worry, I stash them in my apartment's fridge; fill them up in the sink because in Louisville, a water filter is not needed. Sometimes I'll stop by a water fountain and let the stream of liquid splashing against the plastic carcass mesmerize me. And when I'm in the mood for a fresh one to crack open, I recycle the emptied vessel (*with the lid attached*) into a blue bin that seems to be placed in every corner of the building I'm in.

I realize not everyone, even those who live in areas where water is readily available, has the luxury of treating such, like me, as a disposable means. There are families who take baths – one after the other – without changing the water because that is the most they can afford on top of other expenses they must budget for. Women farmers in Ghana rely on the climate's natural rainfall in order to tend to their crops and, in turn, feed their husbands, sons, daughters. And while this disparity in the earth's natural, recurring resource seems absurd, it is not enough for me to recognize this injustice solely in an essay I'm writing. Fundamental change, allowing access to clean water across the globe, starts at the level of legislation. But perhaps putting these concerns into words can be a starting point.

My desk after a long night of studying. See how hydrated I've been keeping?

Hannah is a senior at the University of Louisville studying Philosophy and English.

Ripple Effects Photo Essay

Talia Ruiz Sarmiento, University of Louisville

These pictures reflect different messages and aesthetics connected to water. They don't contain the same message as a whole, but I wanted to take pictures in which each of them has a different message or aesthetic to them. These are abstract ideas, meaning you have to see the picture and interpret how you view it/feel about it. I want my audience to view these images from a deep- minded and aesthetic point of view. These images reflect ideas I thought of while thinking of issues within the water as a whole or just going about my day, taking pictures of things I found interesting. I would say these ideas and images mean a lot; I reflected a lot after taking these pictures. The picture taken on March 1st, which looks as though metal is frozen within the ice, represents metal or lead in water. I wanted a way to take a picture of that reality, but because I live in a place where there isn't lead in water, I decided to create a more abstract concept of that reality within my means. It doesn't take away from the real problem but yet emphasizes it by freezing that reality. In the second photo, taken on March 3, I tried representing the idea of polar bears and how their ice is melting because of climate change. It's an issue that is happening right now, where polar bears are losing their ice, their place of living. These images impact my life because of change. These images don't reflect one single problem within my area; these problems are everywhere. I tried to reflect on these issues of water relating to issues that I think about in my life. Even if I'm not surrounded by the issue, it doesn't mean they don't exist. I hope for the future to look better. I hope for understanding of fear within my fear of these issues.

Selfishly, I hope to never have to go through water issues in my future life. I hope there isn't any lead in my water in the future. I want my audience to know these images are ones I thought about in moments or ideas. However, it doesn't take away from the issues at hand. I didn't take these pictures with the thought of "Oh, they're pretty or cool looking," I took them with the idea of what water issues surround us and affect us. Not all my pictures reflect a deep message, but that doesn't take away from the aspect of the image or better ones out there. If I can capture images not in the area of the issues, it doesn't mean that these ideas aren't reflected in images. You can take pictures like these, too.

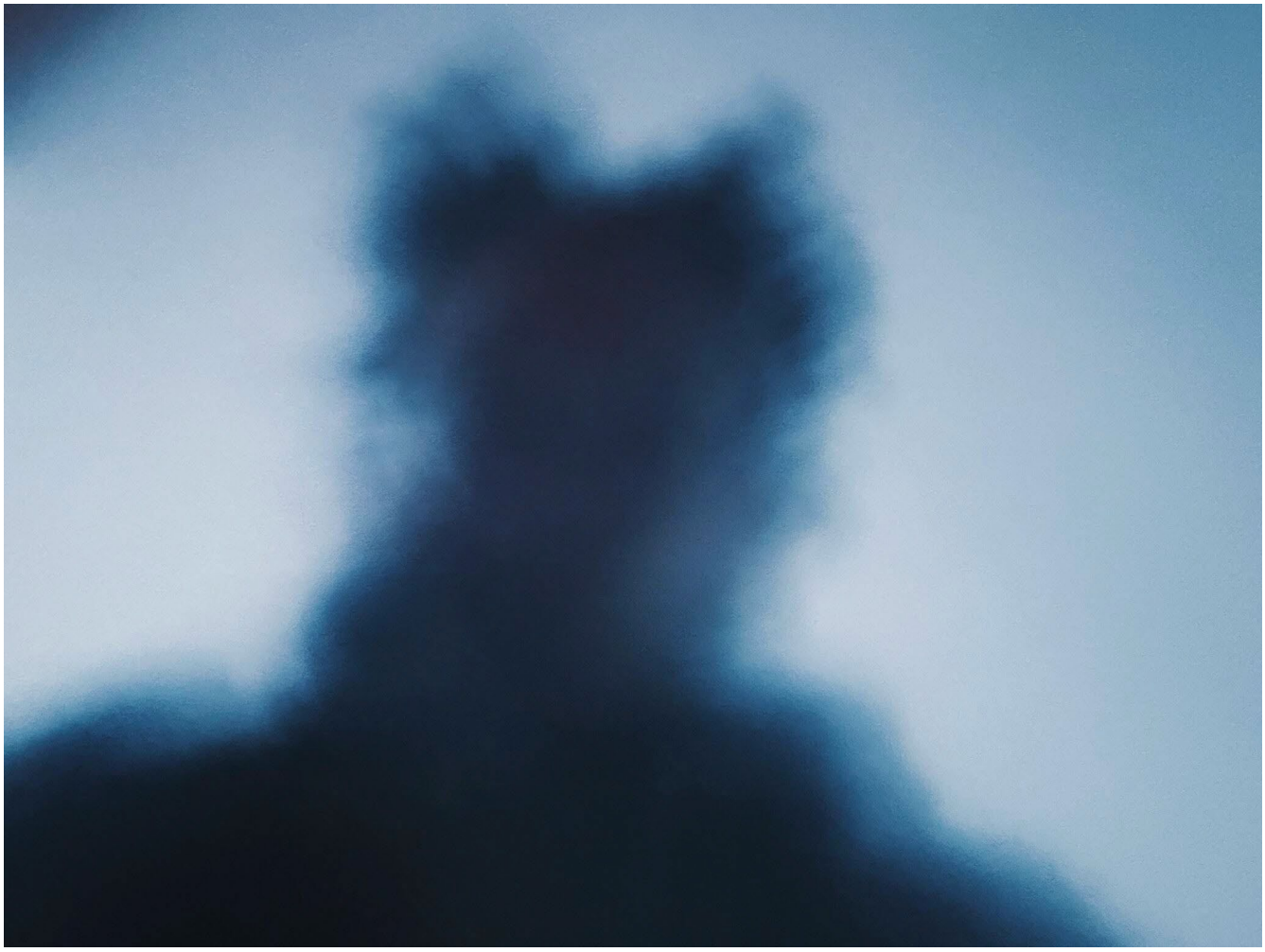
Lead or metal in water as a frozen reality. Taken by: Talia Ruiz Sarmiento March 3. 2025 Louisville, KY

The issue polar bears are facing with their home melting. Taken by: Talia Ruiz Sarmiento, March 3. 2025 Louisville, KY

A day of rain/ tsunami, Taken by: Talia Ruiz Sarmiento March 3. 2025 Louisville, KY

The darkness of a rainy day, Taken by: Talia Ruiz Sarmiento March 3. 2025 Louisville, KY

A1 refers to a high-quality rating. Used to analyze and indicate that a water sample meets high standards for purity and safety. Taken by: Talia Ruiz Sarmiento March 3. 2025 Louisville, KY



My fear of Drowning, Taken by Talia Ruiz Sarmiento, March 3, 2025, Louisville, KY

Talia Ruiz Sarmiento undertakes a photo essay focusing on aesthetics and water issues from another perspective. A visual approach, all taken in Louisville, Kentucky. Allows for you as a viewer to interpret the message in your way.

Ripple Effect: People, Animals, and Water

Catarina Biek, University of Louisville

Testing the Waters One Paw at a Time. Catarina Biek. Louisville, KY

Hydration is Not a Luxury. Catarina Biek. Louisville, KY

Bath Time: Exploring the Mysteries of Moving Water, Catarina Biek. Lo

Transforming Water into into Liquid Motivation, Catarina Biek, Louis

Soap and Water: The Perfect Pair, Catarina Biek, Lo

Water is a fundamental part of life, shaping not only the environment, but also our daily routines, emotions, and experiences. It can be something that we take for granted despite its crucial role in our lives. For my photo essay, I chose to explore how both humans and animals interact with water. When taking my photos, I wanted to show that water is not just a resource for survival, but also a source of curiosity, habit, and even joy.

My photo essay features pictures of my boyfriend and my cat interacting with water in simple yet meaningful ways. The essay compares and contrasts how people and animals use water. When focusing on my cat, I wanted to highlight her innocent and curious approach to water, as opposed to my boyfriend's who was more intentional and routine. His photos included him drinking water, pouring water into the coffee-maker, and washing his hands. I thought these were interesting because while drinking water is universal across animals, making coffee and washing hands are intentional interactions with water that only human beings partake in. My cat's photos featured her experimentally batting at a bowl of water and reaching towards the running bath water. Watching her investigate the water without the intention of using it to hydrate or clean herself, but simply just to explore it, made me appreciate animals' natural curiosity. While a human being would take a shower or a bath and not think twice, an animal wouldn't think to use water in this way.

The photo of my boyfriend drinking water was one of the ways to create my commentary on one of the ways in which we all universally interact with water. Unfortunately, my cat was not the easiest model to work with, so I was unable to acquire a picture of her also drinking water, but I think that the singular photo still helps to create the balance in my essay between necessity and play when looking at relationships with water. I think that viewers will be able to piece together that drinking water is a universal experience between people and animals.

With this project, I wanted my audience to see the role that water plays in humans' and animals' lives in ways that may sometimes be overlooked. Water is something that connects us all to the world around us, no matter how different those interactions may look, whether it's a cat curious about the bathtub or someone making their morning coffee. My goal for this photo essay was to encourage viewers to think about water as more than a necessary resource and see the fun, joy, and even curiosity that an animal may find in it. For me personally, creating this photo essay made me appreciate how much we share with animals when it comes to resources like water. In conclusion, I hope that this project highlights how water can unite all of us.

My name is Catarina Biek, and I am graduating from UofL this semester (Spring 2025) as a Public and Professional Writing major with an English Honors degree.

Slice-of-(Aquatic) Life on the Ohio River

Sophia Lyons, University of Louisville

The proximity of the Ohio River structured the lives of Indigenous Americans prior to European colonization in America and has dictated economy and industry since the area was colonized as Louisville, Kentucky in 1778. Although it does serve as a historical metaphor and functional resource for vitality in this area, the most prominent modern perceptions of the Ohio River are often juxtaposed: it is convenient for recreation in the otherwise land-locked region of the Midwest, but it is hardly fit for human consumption.

Since childhood, many locals throughout the area will see or travel on the Belle of Louisville, the last authentic steamboat from its era. Built in 1914, the Belle of Louisville has since been deemed a National Historic Landmark and sits on the section of the Ohio River closest to downtown Louisville. When walking along the pedestrian Big Four Bridge that connects Louisville to southern Indiana over the Ohio River, people on the bridge will see barges, jet-skis, speed boats, fishing boats, and the Belle cruising along the river. Pedestrians from the high vantage point the bridge provides can also see the shade of brown the water is that day, the amount of debris in it, and the water level after storms.

Another understanding that locals have of the Ohio River is also instilled since childhood, conveyed by adults allegedly joking that “If you swim in the Ohio River, you’ll come out with an extra limb.” Swimming and floating in an inflatable tube in the Ohio River are controversial in this area, as some locals see it as a convenient bonus of living in the area, while others scorn the notion of submerging any part of your body in the river. The Ohio River, while also serving as a waterway for transport and travel, is a vessel that raw sewage and industrial pollutants get dumped into. This contributes to its murky, brown opaqueness and general stench.

So, it would be ironic that the most prominent seafood restaurants in the city are on the riverside. In Seattle, Pike Place Market is located on the shore of Puget Sound and sells freshly caught fish. In Louisville, customers could only hope that the fish they are eating are not caught in the Ohio River. The placement of a seafood restaurant on the edge of the Ohio River is questionably hilarious as it somehow implies proximity to water where fish, similar (?) to ones you may be eating at the restaurant, may come from, while also being a body of water that people have a largely visceral reaction to ingesting and touching. When thinking about the contradiction of food you desire next to water that isn’t even enticing to look at, one must wonder if the view supersedes the implications by providing a nice setting to enjoy a luxurious meal, or if the businesses would perform better downtown and away from the brown, unswimmable Ohio River.

The Belle of Louisville. 401 W River Rd, Louisville, KY. March 1st, 12pm. By Sophia Lyons

Seafood on the Shore (of the Ohio). Joe's Crab Shack. March 1st, 12:15pm. By Sophia Lyons

Walking on Water. Big Four Bridge in Louisville, KY. March 1st, 12:35pm. By Sophia Lyons

The Off Season. Restaurants on River Road in Louisville, KY. March 1st, 1pm. By Sophia Lyons

Would you like to sit inside or outside? Booth or flood debris? Kingfish in Louisville, KY. March 1st, 1:15pm. By Sophia Lyons

Sophia (she/her/) is a graduate teaching assistant at the University of Louisville. She earned her B.A. in rhetoric and composition with a minor in strategic communications at Ball State University and is currently pursuing her Master's in English at the University of Louisville. Her research seeks to emphasize classical rhetorical theories to explore the interweaving of modern epistemology, evolving social dynamics, and identity development.

Ripple Effects Multimodal Reflection

Jackson Consley, University of Louisville

Water is a part of the foundation that supports every life that exists now and every life that has existed previously. Every land dweller needs water circulating within its body to stay functional. Any sea creature would cease to live without water to swim or float through. But perhaps the most amazing thing about water is that despite being a core part of each of our existences, water is not just a single thing. Whether it's due to natural processes or human interference, there are many kinds of water scattered across the planet, each as unique from the rest as we are from one another.

It fills our ocean and crashes on our beaches. It provides living space for the smallest and largest creatures in our world. When these ocean waters reach our shores, they foam as they engage in a tug of war against the land. We fish from these waters, cross them in boats, swim in them, dive in them, walk parallel to them, or just sit and gaze at them. Ocean water not only supports our world, it makes up the majority of it. For many beings, it *is* the world.

Given the right conditions, water is also snow. It blankets everything in sight with seas of white that crunch beneath your feet. It hardens into ice, making both pedestrians and cars liable to find themselves in situations they'd rather not be in. It buries our sidewalks, driveways, and cars, but it's also a thing of beauty and recreation. It remembers where everyone who traversed it went, what path they took, how big their feet were, and it shows anyone who cares to look.

Water is also what we have made of it. It fills our pools that we pump full of chlorine. It fights us as we hyperfocus on controlling its pH levels. It has the displeasure of being popular with small children that are not quite mature enough to retire the swim diapers. It is trapped within our spectacular jail cells, forever severed from the other bodies of water no matter how close they may seem, and we find them terribly fun.

Water is also destruction, a cover-up, in cases both natural and unnatural. The twin lakes found in Kentucky, Lake Barkley and Kentucky Lake, were formed unnaturally by the construction of a reservoir. In the valley that these lakes now fill lies a ghost town by the name of Birmingham. An entire community was forced to relocate before the construction of the lakes, and though remnants of the town still remain, they are instead populated by fish and other freshwater inhabitants.

Water defines our world, sets us apart from other planets, allows us to be. The life it is supporting is so massively diverse that it perhaps makes sense for water to take so many forms. Its importance cannot be understated, not only because it is necessary for survival, but also because of its richness in beauty and its versatility. There's nothing else quite like it.

Consley – Lake Barkley – July 29, 2022

Consley – Okaloosa Island Beach – June 2019

Consley – Okaloosa Island Pool – June 2019

Water: Beautiful/Inconvenient

Michaela Brinker, University of Louisville

Water is often represented as something beautiful. Yet the occasional inconvenience of it (as someone with seemingly unlimited access to it) is in my personal interactions with it. As something beautiful, it is best to look at water during the day—the abyss that it presents at night too scary for me to fathom. These images represent my daytime interactions with different types of water (rain, snow, bodies of water) as its beauty is also shrouded in mess, mud, and obstacles. It also made me think about how, with just the right conditions, bad weather is followed by something beautiful (like a rainbow or the clouds revealing a sunset). The beauty within some of these moments cancels out in interesting ways.

Rain on glasses is not a good combination, told by me showing my glasses lens up to the light. There's the inconvenience of not being able to see and my unpreparedness for the weather.

Figure 1 University of Louisville Campus, March 5, Michaela Brinker

The path becomes muddied as a shortcut that people take to get from building to building. Its previous convenience, combined with the rain, makes it unusable.

Figure 2 University of Louisville Campus, March 5,

“The Great Flood Between Two Sidewalks” shows how campus infrastructure mixed with rain makes a path difficult and inaccessible. There’s the inconvenience of having to walk around it but also the possibility of getting splashed by a car waiting at the intersection.

Figure 3 University of Louisville walkway, Feb 15, Michaela Brinker

When campus finally experienced sunlight after the inches of snow from days previous the sky was my initial focal point. With the snow piled on the sides and cars parked far from the edge, there is still the need to wait for the snow to melt so life can continue normally, especially for commuters.

Figure 4 on University of Louisville campus, Jan 12, Michaela Brinker

It feels like plants and animals can thrive in this beautiful photo of Unzen National Park in Japan. However, the sulfur rich air and intermittent rain made me not able to fully enjoy my time as the smell was strong, the water was boiling hot, and the rain blocking my view.

Figure 5 Unzen National Park, Japan; April 5, 2024; Michaela Brinker

My name is Michaela Brinker and I was born in Lexington, Kentucky. I attend the University of Louisville in Louisville, Kentucky and graduated with a degree in Professional and Public Writing in May 2025. I love poetry, writing for social change, and learning Japanese.

Snow Disruptions

Summer Olmsted, University of Louisville

Louisville, KY. February 18, 2025. Summer Olmsted.

Louisville, KY. January 9, 2025. Summer Olmsted.

Louisville, KY. January 7, 2025. Summer Olmsted.

Snow Disruptions Reflection

Over the course of this winter in Louisville, Kentucky, there has been more snow and days below freezing than I've seen in the city. The snow has been beautiful to see and I've overall enjoyed having a snowy winter, but it has disrupted the environment around me. These photos represent both the beautiful and intruding nature of snow. All of these photos are taken within walking distance of my apartment because on the days when it snowed so heavily, it was dangerous to drive my car. Louisville did not have the infrastructure to salt roads and sidewalks, so one of these photos shows a sidewalk covered in ice and snow. You can see how people have flattened the snow where the sidewalk is, but this turned into ice as the snow melted during the day and refroze at night. This made it difficult to walk on, but I thought it was interesting how people carved the sidewalk out of the snow with their path. Other photos represent less consequential impacts of snow, such as the fountain not working and the pool cover having a layer of ice and snow on it. This reminded me of how in a few months, this will change as the weather warms, but for now, they are both nonfunctional. The tables and chairs in the last photo would be difficult and uncomfortable to use because of the thick layer of snow. While these things are not essential, it was strange to see the seating area rendered useless because of the winter weather. As climate change progresses, we may not see this amount of

snow in Louisville again, or the winters may get even more intense. I hope that the world can work together to reverse climate change so we don't see either of these extremes.

Summer Olmsted is an English student from Louisville, Kentucky, USA. She intends to enter the publishing field or work as an editor after she graduates from the University of Louisville in 2026. She has previously worked with the literary magazine Miracle Monocle and as an environmental research intern at the Christina Lee Brown Envirome Institute.

Ripple Effects Photo Essay

Derek DeBurger, University of Louisville

All five of the photos taken for this photo essay were taken on or around days when no local or national meteorologists predicted snow. While it was mostly an inconvenience when it came to travelling to campus for my classes (I actually missed a class because I didn't know I needed to wake up early enough to clear off my car and the driveway at my house), it actually afforded me a great opportunity to capture what are likely really unique photos for this essay. The problem with taking several pictures of snowy landscapes is that snow is all one color, and the snow that varies in color is very visually unappealing. I tried my best to break up all the inherent white space with color elsewhere in the frame, but most of that other color just ends up being brown.

Another problem with striking while the iron was hot is that I didn't really have an idea/goal of an intended theme or message when I was taking the pictures. I had to retroactively apply an intent when I compiled all the photos that I thought were good enough to use in my photo essay. The theme that I settled on was climate change, because it feels like not only the most pressing but the most fitting. Because of the successful campaign by Bush-era republicans, the term "climate change" usurped the term "global warming" in the social lexicon when referring to the damage that humans are doing upon the environment. While climate change won the word-war, the use of global warming has stuck in many people's minds and it has created a not uncommon belief that anytime it gets abnormally cold that it's proof that global warming is a hoax. Donald Trump even said as much during the polar vortex in 2019, asking how it could be so cold if the world is experiencing global warming.

While I do think the throughline of the snow is interesting, I'm curious is any of the photos run together and make the overall experience less memorable. I think as a whole it'll be memorable because it will be different than other photo essays that focus on water in the liquid form (as opposed to my focusing on the solid form), but on a macro level do the photos bleed together.

Feb. 17

While I find the sky very pretty in this picture, it does remind me that much of the pretty sights of golden hour are a direct result of man-made gasses circulating in the air. That somewhat yellowish tint in the background of the photo in the clouds is an example of just that. While somewhat pretty, it is just the gasses that fill the air in larger than normal proportions that create the colored sky that is different than the blue skies that man people remember from childhood.

Feb. 22

I’ve never had a pool myself, but I always swam in neighbors’ or friends’ pools growing up. I live extremely close to a water source, the Ohio River, but it is too dirty to swim in. And the lake that used to be near Louisville—Lake Louisvilla—was a manmade lake that later had to be destroyed because the dam was a ticking time bomb of an environmental disaster.

Feb. 22

This is probably the busiest of all the photos I took, and I don’t think it’s a coincidence that it is nearest to a house. I think the light not only adds much needed color to the collection, but it’s interesting to focus and see the beehive inside of the fixture. I can only speak anecdotally, but I’ve never seen a bee or wasps hive anywhere other than on a man-made structure. It just seems the way that they have adapted over time, knowing instinctually that these structures are more stable than more natural options.

Feb. 22

This is a section of the yard is a combination of natural foliage and unnatural objects placed there for aesthetic purposes. It offers some level of conservation, but no wild plants grow here and no animals spend time here. This is a section of the yard where nature is allowed to grow but only as far as the homeowners allow it.

Feb. 22

This final picture actually contains the least amount of man-made objects, with a fence being barely visible and out of focus in the background. The grass is browned and frozen, but it will come to life again as soon as spring comes. The world hasn't hit the point of no return, but spring is not guaranteed.

Derek is an American student at the University of Louisville. He is from Louisville, Kentucky.

Ripple Effects Essay

Madeline Myers, University of Louisville

Photos taken by Madeline Myers on 3/11/25 in Mt. Washington, KY

My photoessay aims to convey the prevalence and interconnectedness of water in human lives and the resulting devastation of water's subjugation to the environmental crisis and pollution. As my photos demonstrate, we use water for a number of practical purposes everyday beyond drinking; we are interacting with it constantly whether we realize it or not. This forms a kind of innate connection between humans and water, a connection I aimed to symbolize with the direct contact of the human hand and water in every picture. Water sustains biological life itself but also the daily, man-made lives consisting of all the routine activities we've deemed as necessary, like showering, washing our hands, and cooking. It is vital to the sustenance of both our natural and social lives.

Something so central to human life and the constancy of their everyday lives demands standards of high quality—of cleanliness, safety, and the protection of human health (or at least the lack of threat to human health). As an even more obvious point, something interacting directly with the human body, even going inside of it, of mingling with the very biology of the human body through either the skin to the bloodstream or the mouth, should not be something that poses a threat to the human body and its health. Drinking water in particular is supposed to be the ultimate act of improving or at least preventatively maintaining your health (When you're sick or feel bad what's always the go-to response? "Drink lots of water".), not the vehicle of health destruction and even death. All in all, every human being is entitled to clean, safe water for drinking and other purposes. And yet, human beings experience a massive disparity in terms of the cleanliness and safety of their water. Western, developed, "first world" countries enjoy the privilege of generally safe and filtered, detoxified water while third-world, undeveloped nations flounder in the highly polluted water that dominates their landscape, already having claimed the lives of many and posing significant health threats to still more. This is one way in which our earth's current environmental crisis demonstrates its ability to affect different parts of the globe to different degrees of severity and to exploit the more vulnerable, economically disadvantaged populations, making environmental repercussions even more catastrophic for them. At this point, because of how prevalent and unrelenting environmentally damaging practices have become, every part of the world can feel the effects of environmental destruction and climate

change in one way or another and to some degree or another. But some parts of the globe, namely the undeveloped and economically disadvantaged parts of the world, lack the economic resources to cope with and combat repercussions of the environmental crisis, making their experience of it much more severe, immediate, and relevant.

No matter how much our modern world has been conditioned to recognize the dangers of climate change and pollution and our environmental destruction as a whole, privileged nations like here in the U.S. don't have to confront this reality nearly as directly or see the environmental crisis as an urgent situation. We don't have to be in a constant fight-or-flight state of alarm at the life-threatening propositions of water pollution like those in third-world countries. Because while in America the public is overall becoming more aware and educated regarding the environmental crisis, our economic privilege and ability to do things like clean polluted water prevents the environmental crisis from causing immediate, direct, conscious, and life-threatening effects here short of experiencing a natural disaster on the coast (at least for right now, which is very likely to change in the future). The lack of immediate, grave repercussions makes the crisis as a whole feel less urgent and sinks us further into idleness. This allows us to live in a constant state of blissful ignorance as to the severity and threat posed by the environmental crisis, while those in third-world nations with dangerously polluted drinking water are forced to remain acutely aware of the seriousness of the issue. Blissful ignorance and the idleness of not having to actively seek out solutions for water pollution and the environmental crisis is in itself a privilege, just as access to clean drinking water is.

I strived to capture the overall privilege and its counterparts of ignorance and entitlement experienced by first-world countries like the U.S. in my photoessay. The essay depicts our interaction with clean, safe water in a variety of water-use scenarios. Everyday we go about such mundane activities, interacting with clean water yet not consciously thinking about or appreciating our high privilege of being able to engage with water in this clean condition. We are ignorant of what the alternative could be—relying on a substance for survival that consistently boasts of its ability to cause illness, long-term health effects, and death. As many have said for a long time, here in America and other first-world countries we truly do take things for granted, so accustomed to being privileged and having things like clean water that we forget we're even privileged and that things could be so much worse. A little conscious awareness and gratitude for our privilege(s) in this part of the globe, at the very least, would come a long way.

My name is Madeline Myers. I'm a college student in the U.S. majoring in English on a Professional and Public Writing track. It follows that I love to read and write.