



PROPOSAL FOR THE REHABILITATION OF THE HENNOPS RIVER

Saving the primal freshwater
nature of human origin –
the Birthplace of Humankind



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The perennial Hennops River has its origins in the strong fountains of the Witwatersrand and is fed by numerous springs as it meanders for a hundred kilometres through the heart of Gauteng, South Africa's smallest province and economic powerhouse. Gauteng's unique grasslands are threatened by mining, industrialisation, urban expansion, agriculture and alien encroachment; very little original grassland remains and only a small percentage is protected.

The aims of the project introduced in this brochure is to create a wildlife sanctuary and to connect isolated reserves via a nature corridor that traverses the length of the Hennops River. The park will be a model for inter-boundary co-operation between municipal areas, as it will form a part of North-west province, Johannesburg, Ekurhuleni and Mogale City, with the largest section in Tshwane.

Until recently, the Hennops was Gauteng's cleanest river, but is now its most polluted. The park will help to safeguard the natural life in this threatened biome by restoring its biodiversity and making it flourish again by reversing the tide of pollution in the river and protecting its freshwater ecosystems. The project will save the habitat of endangered creatures like the rare spotted-necked otter still surviving there by rehabilitating the whole spectrum of freshwater life.

- **Declare** the entire Hennops River a nature reserve and biodiversity corridor that stretches from source to confluence and connects existing reserves. A large wildlife area is proposed along its lower flow, by expanding the new Crocodile River Reserve (through GDARD) at its core and incorporating a five to ten kilometre buffer zone that surrounds its five clusters.
- Consolidate and integrate the whole natural area to form a wildlife sanctuary of global importance. The area is adjacent to the Cradle of Humankind and contains an abundance of freshwater sources that nourished early humans.
- Protect cultural heritage sites and develop their potential for ecotourism.
- Conserve aquatic and terrestrial ecosystems by managing water resources in an ecologically sustainable way to benefit present and future generations.
- Safeguard our groundwater and Karst aquifers which store as much as 40% of South Africa's fresh water and are highly vulnerable to pollution.

A SHORT HISTORICAL PERSPECTIVE

Early Stone Age tools found along the Hennops River have been dated by the Origins Centre at the University of the Witwatersrand at 2.6 million years old and belong to the earliest Cradle periods. These remarkable tools demonstrate a high level of skill and prove that the area was occupied during the Middle and Late Stone Ages.

The Hennops cut deep gorges and cliffs into the bedrock. Riverside caves carved by the river when still young show evidence of the earliest habitation and sacred places of our species; their entrances were smoothed by the hands of ancestors – a safe haven close to a fresh water source for early hominids. They appear to have been places of veneration for succeeding ages, perhaps even as birthplace sites.

The stone walls associated with these groups of caves along the Hennops is consistent at different sites located along the river, which seems to indicate the presence of a homogenous group of people inhabiting these riverine valleys and joined by this waterway with sites stretching all the way upriver to the source. This freshwater source was perhaps regarded as sacred, with structures of communal veneration built near it.



Map of the area, green showing existing nature areas, yellow the proposed wildlife sanctuary connecting along the Hennops corridor.

To build a semi-circular structure that incorporates large blocks would have required a coordinated effort from many individuals and seems to have been of a communal spiritual function, built on a hill with crystalline outcrops. The red conglomerate rock type used appears to have held special significance for these people and is typically integrated with the same type of natural outcrops near the water. One structure on a hillock next to the Swartspruit tributary appears to have been a compact village with massive natural rocks serving as walls. All the structures were placed in strategic and scenic locations.

NATURAL FEATURES

The many rocks in the area originate from the fossilised sedimentary remains of an ancient seabed – a primal inland sea that existed here two to three billion years ago on one of the first micro-continents: the Kaapvaal Craton. The surface has changed very little and Stromatolite fossils – the first multicellular creatures – still lie beside early stone tools.

The area's extreme rockiness has spared it from the plough and preserved most of the grasslands and ancient plants. The animals found here still possess wild gene pools. To repopulate this area with original species would form a living museum of our earliest ages and allow us to step back into the world of our forefathers, where man and

animal can co-exist and endangered grassland species can multiply again as a nursery of animal life so that the veld can flourish.

The grasses of the highveld are mineral rich from growing on the limestone base and would have attracted many grazers to fertilise the thin soil and help stimulate the right types of grasses while propagating plant species. The grasslands need grazing animals to survive and flourish, great herds could once again roam freely to form a premier wildlife park, similar in size and scenic beauty to the Pilanesberg Park.

The park would also reunite this ancient riverine valley with the Schurweberg, one of the world's oldest mountain ranges, which consists of solid sedimentary rock built up over eons in this ancient sea of first life.

A RIVERINE RESERVE

The park would be situated at the confluence of the Jukskei, Hennops and Crocodile Rivers bordered by four large roads along which a perimeter can be demarcated and game-fenced. The internal fencing would be removed to allow free movement of wildlife.

A scenic route meandering through can be made along the one bisecting road by reducing the speed limit to 60kmph on this winding,



Detailed map of the whole Hennops River with the proposed river sanctuary outlined in yellow.

spectacular road through the Hennops-river-valley, making it possible for animals to cross.

Tourism can be concentrated along this road to become a game drive near the city with stopping areas to admire the scenery. Controlled eco-tourism can be spread over the whole area to lessen its impact.

The area is sparsely populated and residents will benefit from the added security, a rise in property values as well as the magic of living surrounded by wildlife. Most of the existing properties are large – 20ha or more – and residents only use 5%, often with a camp around the house when keeping dogs, the rest could be designated to conservation and wild life to the benefit of all; in the very rich transitional veld types between Grassland and Bushveld.

BENEFITS

- Uplifting the whole area as well as the bordering communities like Attridgeville which could have their own entrance gate and lodge, while providing tourist accommodation and an authentic experience of colourful township life in this vibrant community.
- Neighbouring areas like Diepsloot situated on the other side of the highway would

benefit from the many sustainable job opportunities in fields like tourism, game ranging and nature restoration, as well as increased wealth of the area and access to a relaxing game drive and Park.

- Educational opportunities to the larger surrounding urban areas as a central Park with guided walking trails, birding and canoe rides to experience the rich history of the area as the shared birthplace of our kind, to unite and bring pride in our place of origin.
- Further jobs will be provided in the restoration of the Rivers and their wetlands - replanting of indigenous trees, alien clearing and the large amount of timber coming out which could also form sustainable industries for planks, furniture and fire-wood.

THE HENNOPS RIVER RESERVE

The reserve would consist of a riverine biodiversity corridor stretching from the Birthplace nature Sanctuary of its lower flow to connect upriver with the remaining natural areas along the banks, with the river as its spine.

Incorporating a large farm next to Erasmia with a strong fountain that used to supply the town with water and ancient trees, currently tied up in an estate but should be purchased for



Ancient semi-circular stone wall next to the Hennops River with the Schurweberg in the background, perhaps the remains of our first connected ancestral culture.



The timeless Hennops River nourished by numerous springs keeping its constant level, now permanently foam-covered from raw sewage.



Fresh tracks from a rare Spot-necked otter still surviving in the lower part of the Hennops River.



Leaking sewerage mains in Ivory Park into the Kaalspruit, one of the Hennops tributaries.



Rubbish dumping next to a bridge in Ivory Park into the wetlands of the Kaalspruit that is washed down when flooding.



Blocked and overflowing sewerage main in Ivory Park running into the Kaalspruit.

the Reserve and developed as reserve area for tourism.

A connecting link to complete the corridor, bordering on the Swartkops reserve situated in the middle. Around the Rietvlei reserve at its top fountain sources some areas have already been designated for conservation and this Reserve could be expanded and connected with the bio- corridor. These two reserves both with wild-life populations are isolated and the corridor will allow for the healthy exchange of gene-pools to avoid inbreeding. The river banks in between are still mostly natural and many parts are fenced off park areas forming an already existing corridor. Where it flows through Centurion, urban development and housing make a mostly enclosed path preserving the 100-year flood line, estates and the Golf courses can be integrated to form a path of wilderness through the human world. It is proposed that this whole stretch become a riverine reserve and fenced off, with gates where needed to create a safe zone so that grazing animals can migrate through and maintain the riverbanks. Crime can be controlled, allowing for recreational activities such as walking trails, canoeing, picnic areas and observing of and enjoyment animals and bird-life in a tranquil natural setting that will become one of the greatest natural features of Tshwane and Gauteng.

Sewage solutions: Cleaning the effluent of the three wastewater treatment works (WWTWs) discharging into this system through biological solutions that are natural, sustainable and economical. By installing polishing plants and increasing retention time through passive cleaning by wetlands at all outlets to remove heavy metals, medical chemicals such as Anti-retro viral and micro-plastics that normal processes cannot remove, aerating the water and cutting out chlorine. This is especially needed upstream from the Rietvlei dam, a major source of drinking water spending large amounts cleaning the pure fountain water that is being polluted and resulting in toxic Blue-green algae blooms in the dam. WWTWs can be made more efficient by sourcing the right bacteria preserved through dehydration and using mostly aerobic types, breaking down toxins on a molecular level and converting Ammonia into Nitrates, to change the presently eutrophic state of our freshwater bodies into living systems. Effective Micro-organisms or EM can help change the putrefactive bacteria to a more effective range that is capable of reducing sludge and breaking down complex chemicals rendering them harmless. The correct

bacteria added into toilets will remove odours and the whole sewerage network will become extended treatment works when added directly into the sewerage pipes to pre-digest waste thereby increasing the effectiveness of cleaning and expand the capacity of WWTWs in a cost effective way while saving electricity. A bio-filter moat can be made to protect WWTWs such as Sunderland Ridge from the cable theft that has been debilitating them as well as to economically enlarge their capacity, thereby integrating them with the river reserve into which they discharge. Leaks and blockages in sewerage mains can be minimised by this bacterial action and the early detection and reporting of leaks, instilling a respect of the sewerage system. Once the clean spring-water and living rivers start benefitting all the people there will be a greater care and vigilance, this will also discourage spillages and dumping from industries, as well as from sucker trucks. Large companies near the river can become patrons of the Reserve as an environmental offset to their activities, thereby promoting a healthier natural world.

Solid Waste: Much plastic rubbish that is being washed down originates from improper dumping in Ivory Park that accumulates next to the wetlands and bridges of the Kaalspruit and its tributaries. By initiating recycling projects in these communities waste can become a source of income, building partnerships with businesses purchasing recyclables and providing financial incentives as well as proper disposal sites; education and awareness campaigns on the value of these streams to the community. Once they are clean becoming natural parklands to all, these wetland streams so close to their spring sources should be crystal clear and filled with natural life as tranquil natural spaces stretching through densely populated informal settlements. These wetlands are the key to uplifting whole neighbourhoods, once sewage leaks are stopped and life restored back to these streams communities will take ownership and protect them for the benefit of all. Stopping the dumping and taking pride in the spring filled natural wonder of their environment. Small scale Perma-culture farming can be taught to replace the vast Maize fields of low productivity that are destroying the natural wetland vegetation on the banks of the streams.

Restoration of life: Wetlands are some of the most productive and diverse ecosystems on earth and also our most endangered. Schools can become involved to learn about the fascinating creatures inhabiting them and help in the



LEFT: The height of the foam layer being churned up indicates the level of raw sewage in the water emanating from Wwtws and overflowing pipes. ABOVE: Sewage filled Kaalspruit tributary filled with rubbish, fountain streams that should be life enhancing, now depriving the people of their right to a healthy environment.

restoration of their natural life, studying their host of micro-organisms and their symbiotic behaviour; involving the communities in the introduction of bacterial life into these streams and seeing the magic of the intricate natural living systems returning. Once these top wetlands are alive again other creatures like frogs, crabs and molluscs can be re-seeded to settle downwards. Fish can once again reach their upriver spawning grounds - with the primary life re-established larger creatures such as otters, bird-life and buck can return again, making the whole interwoven web of freshwater life alive again to flourish.

Rehabilitation: Due to high levels of sewerage and solid waste pollution the river area has become a dangerous and forgotten no-man's land. To restore and bring it back life with the use of Micro-organisms and beneficial Bacteria to form the basis of regenerating the river life, reintroducing plants, fish, crabs and mammals. Making fish ladders at weirs to allow upriver spawning of fish, even constructing one in the canal next to the Hartebeespoort Dam wall to reconnect the Lower Crocodile and Limpopo rivers to their sources and stimulate life in the Dam, becoming a great tourist attraction. Giving free movement to fish, Monitor lizards and Water-mongoose; reviving the whole host of freshwater life to flourish again in this riverine corridor. To bring people back to their rivers with clean drinking quality fountain water as a great attraction, while providing tranquil natural spaces meandering through communities to be enjoyed and protected by all, returning our largest

recreational areas to the people and animals that they rightfully belong to.

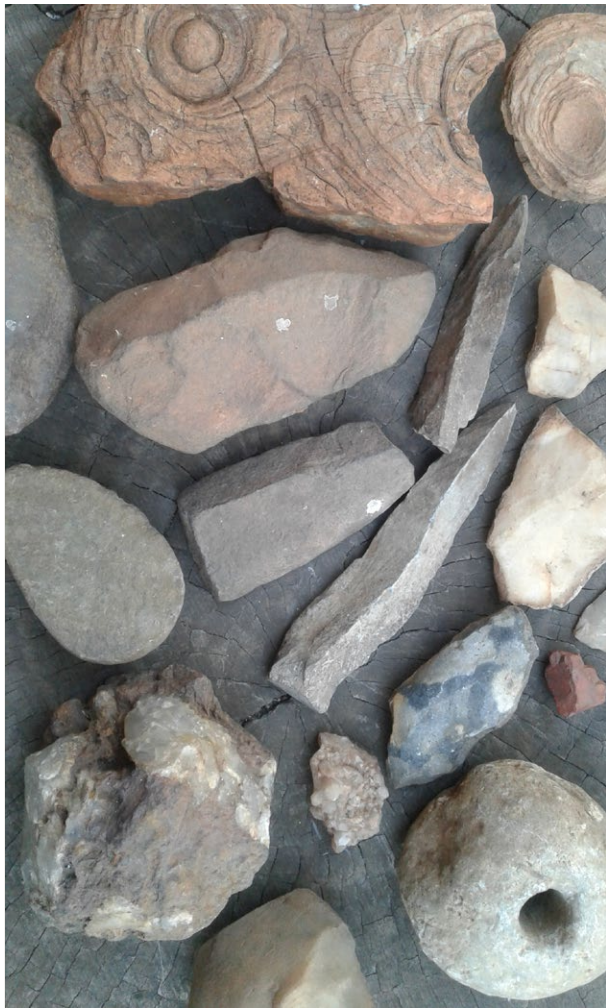
Uplifting of our lives: The benefits to our communal health are numerous. Living rivers will become highly effective bio-filters meandering through our world, their numerous filtering and digesting creatures cleansing and restoring the environment on which we all depend upon. Breaking down and removing harmful chemicals from the water, as the life-blood of our world, functioning in a similarly crucial way as our own circulatory systems. With all the plants and trees flourishing again in this long green belt which will be producing oxygen as well as releasing ozone from the flowing river, cleaning our ambient air - the lungs of nature, so that we can breathe freely again and live long and healthy lives in this ancestral place that nourished the birth of our kind. The Birthplace Park will become a symbol for the world-wide restoration of our precious freshwater resources as well as reviving our eternal bond with the natural world that gave life and sustained our species over the long aeons of our past - to ensure our future survival on Earth, supported by the whole host bio-diversity that underpins our fragile and freshwater dependant nature.

Thank you for any help you can provide to save these ecosystems and realize this project.

Willem Snyman, (082 395 3312) : FRESH.NGO founder, director; ARMOUR committee member; Crocodile River Reserve Representative for Hennops River; nature artist and activist.



A praying mantis on the river bank, symbol of hope for the resurrection of riverine life.



ABOVE: Stone-age shrine next to the Hennops, the gap exactly the same size as a human head with flaked stones behind it.

LEFT: From the Hennopsriver Valley,(left to right) Stromatolites, Early, middle and late stone age tools, note curved shapes on upper left.