Rivers and people

Refusing to DUC(T) for cover – how one organisation is making a difference to KZN's rivers

The multi-award winning Duzi uMgeni Conservation Trust (DUCT) is illustrating that South African citizens need not sit back and be silent witnesses to the degradation of the catchments in which they live, but can in fact play in a significant, active role, in reversing this condition. All it takes is some patience, commitment and perseverance.

Article compiled by Lani van Vuuren.

The non-governmental organisation, DUCT, is becoming known to South African households, and not only those that live in the uMngeni and uMsunduzi catchments where the organisation is active. In 2014 DUCT was the winner of the *Mail & Guardian* newspaper's Greening the Future Award in the Community Conservation category. Later that year, the organisation went on to win an Eco-Logic Award in the Water Conservation category.

It is the Dusi Canoe Marathon (which holds to the old fashioned spelling of that river's name) that indirectly inspired the establishment of DUCT. South Africa's premier canoeing event, the Dusi attracts 1 600 paddlers every year with their seconds and supporters and has become part of the culture of the region. Over the years the Dusi has been a crucible for South Africa's top paddlers, several of whom have brought honour to the country by winning titles at the annual World Marathon Canoeing championships, including five times men's winner and reigning champion Hank McGregor.

But it was concern over the deteriorating quality of the uMngeni and uMsunduzi rivers that led a small group of paddlers to establish DUCT ten years ago. "Since the formation of DUCT in 2005 and its official registration in 2006, the organisation has grown to include those who are passionate about river health in this region, not only those with the inclination to mess about in boats," notes DUCT Chair, David Still. Apart from Still the core group of volunteers that founded DUCT and continues to steer its activities includes several water professionals who are well known members of the water research community, including Dr Mark Graham and Professor Colin Everson. Today the organisation has over 300 people on the payroll. In a country where unemployment verges on a national crisis, this is something of which the DUCT board is very proud.

According to Still, rivers reflect a great deal about our values as a society - "Rivers do not lie. If your city does not have a functional waste management system and if too many people do not care what happens to their waste, then

far too much of that waste is going to end up in the river. If your city is not spending enough on the construction, operation and management of its sewage systems, then too much sewage is going to end up in the river. If your landowners – public and private – do not make an active effort to stem and defeat the tide of alien vegetation invading their land, then fairly soon the indigenous vegetation will disappear, with all the attendant consequences."

DUCT functions in different ways. The organisation lobbies for higher priority to be given to any actions and programmes which will improve river health, such as the removal and control of invasive alien plants, the improvement of waste management systems and the implementation of the environmental flow provisions of the National Water Act of 1998. In many instances, it provides skills and manpower to give the effect to those actions and programmes, particularly where there is something new that needs to be tried out or demonstrated.

Further DUCT monitors matters which have a direct bearing on river health, such as sewage pollution, uncontrolled sand mining operations and illegal dumping. The organisation works on raising the public awareness of river health issues through the education of school groups, public campaigns and the use of the media.

Finally, DUCT provides access to a network of highly experienced professionals with relevant skills, and uses these skills to formulate proposals and to manage programmes which are making a difference. The *Water Wheel* highlights four of the organisation's programmes.

River care and alien weed control

One of DUCT's first actions following its establishment was to form a number of River Care Teams to physically clean up the uMngeni and uMsunduzi rivers. A river care team is a group of well trained, well equipped and motivated workers who are based on a particular stretch of river (about 10 km long).

On this stretch their work includes control of invasive alien vegetation, trash collection and removal, prevention of illegal dumping and reporting and sewage or industrial pollution. The number of teams depends a lot on funding, and typically varies between 6 and 14.

A big part of DUCT's current work is controlling alien invasive plants. Aquatic weeds, in particular, spread amazingly fast, doubling the area they infect in as little as ten days (depending on the temperature and nutrient levels in the river). Hyacinth, water lettuce, Kariba weed, azolla, ludgigia and parrots feather are some of the more common aquatic weeds found in the uMngeni and uMsunduzi rivers.

Lotto funding from 2010 to 2013 enabled River Care Teams to make significant inroads with alien invasive plant control over a 100 km zone. With support from the Department of Environmental Affairs DUCT is able to access herbicide for both terrestrial and aquatic work, and has been loaned boats for spraying the aquatic weeds. DUCT further liaises with the South African National Biodiversity Institute (SANBI) to treat emerging weeds, such as Mauritius hemp and Pompom weed.

Invasive alien plants, such as water hyacinth, is a significant challenge in the rivers under DUCT's care.

Since 2006 citizens from all walks of life and hundreds of school children have joined DUCT in removing solid waste from the banks of the uMngeni and Msunduz rivers.

"The organisation has grown to include those who are passionate about river health in this region, not only those with the inclination to mess about in boats."

DUCT is working with authorities to eliminate illegal sand-mining from the catchment.

The confluence of the uMngeni (left) and uMsunduzi rivers.

DUCT's activities also stretch away from the banks of the rivers. It has initiated a pilot programme to improve land care and prevent soil erosion in the upper uMsunduzi catchment, while implementing erosion control measures along other sections of the river. This is done to reduce siltation of the rivers and dams in the catchment.

Monitoring sand mining

Sand for construction will always be needed to feed the growing cities of Pietermaritzburg and Durban, and sand mining is an important party of the valley economy. However, the industry is very poorly regulated and managed and there are many illegal operators. The responsible authorities have to cover the whole province and cannot be everywhere at once.

This is where DUCT can play a role and its support network have a strong presence on the ground, monitoring whether mining operations remain within the limits of their permits and whether in fact they even have permits. "DUCT would like to see the sand mining industry focusing its efforts on the headwaters of dams such as Inanda and Shongweni where sand deposits have accumulated and will further accumulate over time," says Still. "This sand could be designated as green sand, i.e. sand which has been harvested in an ecologically responsible manner, and we would like to see the major industry players insisting on the use of this sand."

DUCT is also lobbying for a special levy to be raised on all sand mining in the valley which will go towards community-based monitoring and rehabilitation work, thus helping to further support the valley economy while simultaneously protecting the environment.

Involving communities

Since 2006 citizens from all walks of life and hundreds of school children, supported by DUCT, have donned rubber gloves and filled countless numbers of bags with solid waste found in the uMngeni and uMsunduzi rivers. The events are timed to coincide with the International Coastal Cleanup day in September.

Initially the focus was on the uMsunduzi River, and partnerships were organised with local schools as well as interested and affected parties, including provincial and local government agencies. Later, the badly polluted tributaries of the Slangspruit and Wilgefontein started to be included, with residents of the historical black urban areas, Imbali and Edendale, participating too. The cleanup has been sponsored by aluminium supplier, Hulamin since its inception, and has grown to include some 40 schools collecting 8 000 bags of refuse.

DUCT also has a schools education programme aimed at raising environmental awareness among youth, facilitating youth action towards rehabilitation and restoration, and encouraging creative expression in caring for our environment, among others. The programme further encourages the concept of communities working together towards the goal of clean and healthy river systems and encourages collaboration with other schools.

> *"The world is run by those who show up. Our job is to show up for the sake of river health so that when the decisions are made and the resources allocated, issues affecting river health are not relegated to the bottom of the list."*

Older community members are also encouraged to participate in river conservation. For example, some people have volunteered their services as 'enviro champs' where they report local environment issues and developments, such as sewage spills, on a monthly basis. At the time of writing there were 20 of these enviro champs. They are paid a small stipend of airtime so they can phone in or SMS through the environmental problems they encounter.

This initiative has been so successful that a municipal decision has been taken to replace certain problem sewers. DUCT also reports that a respectful and cooperative relationship has also developed with the plumbers who repair the problems.

"As part of our turnaround strategy, we have identified credible institutions with whom we have partnered in our quest to pursue our common vision. DUCT fits within that category as we both want to protect and sustain the fragile ecological infrastructure within our area of jurisdiction. We are extremely grateful for this partnership model," notes Sbu Khuzwayo, municipal manager at uMgungundlovu District Municipality.

Sewage monitoring

Water testing in tributaries in the Pietermaritzburg area over the years has indicated ongoing pollution from sewage spills and leaks. In some areas, surcharging manholes have continued unabated for many months, spewing their contents into an already strained river system.

DUCT is about to conclude a three year partnership agreement with the Msunduzi Municipality whereby DUCT will provide an sewer inspection, mapping and monitoring service. Sewage manholes which could impact on the upper uMsunduzi River and its tributaries will be inspected several times each week by dedicated teams. These will be focused specifically on those areas where Umgeni Water's routine weekly sampling results indicate high E.coli counts.

Initially these manholes can be difficult to find, but constant vigilance and sleuthing has uncovered a number of surcharges in overgrown areas previously neglected. On many occasions it has been necessary to carry out house-to-house surveys to ascertain the origins of pollutants, especially when stormwater discharges are involved.

KwaZulu-Natal's main water utility, Umgeni Water, has praise for DUCT's work. "The work done by DUCT is clearly of benefit to our organisation as well as the environment and all those living in the area. We rely on water resources in the uMngeni and uMsunduzi river catchments, and having an independent, suitably skilled, knowledgeable and enthusiastic NGO working to protect those catchments and water resources is reducing risks and enhancing sustainability to those resources, in both quantity and quality," says Steve Terry, water quality scientist at Umgeni Water.

A more recently development has been DUCT's involvement in the Durban Green Corridor, a partnership with eThekwini Municipality. The programme seeks to integrate nature rehabilitation, conservation and environmental awareness, youth development and local economic growth through adventure sport and ecotourism within the uMngeni river valley. The programme is supported by the Department of Water and Sanitation as well as local businesses, sport and environmental organisations.

Despite all the obstacles, the organisation is seeing a difference. For example, as a result of DUCT's interventions serious budgets are being allocated by the relevant authorities for sewer upgrades and upgrades of sewage treatment plants, for invasive alien plant removal and for improved land care in general. The organisation is also seeing more attention being given to catchment health matters, as well as a growing public awareness of the value of South Africa's rivers to society.

"The task of turning around river health in a catchment is massive, for it touches on virtually every aspect of the way we manage our society," notes Still. "It is easy to become overwhelmed and wonder what difference one individual or one organisation – an NGO at that – can possibly make."

Still has a two-fold answer. "That old maxim holds true – the way to climb a mountain is one step at a time. Instead of bemoaning the magnitude of the task, rather get on with it and before long one will look back and see that substantial progress has been made."

The second part of his answer is this. "The world is run by those who show up. Our job is to show up for the sake of river health so that when the decisions are made and the resources allocated, issues affecting river health are not relegated to the bottom of the list."

The DUCT directors and management team snapped after a meeting in 2013.