



Gavin Lawton

# LET THEM FLOW – new guidelines urge stronger action to protect urban rivers

*The Water Research Commission (WRC) is throwing its weight behind efforts to rehabilitate degraded rivers in South Africa by funding the development of various 'how to' guidelines, technical manuals and policy briefs. The latest set of tools, aimed at the country's urban rivers, was launched at a special event earlier this year. Article by Sue Matthews.*

Speaking at the launch of the guideline document *Tools to determine enforcement-driven rehabilitation objectives on urban river reaches*, WRC CEO Dhesigen Naidoo said: "What the WRC wants to do as our contribution are projects like this one, giving rise to support materials that can be used by

authorities and the rest of us who care about our rivers to fix them up in the right and responsible way."

He was addressing a gathering of people who had shown just how much they care about rivers by getting cold, wet and tired for the sake of raising awareness about the state of urban waterways. These were the intrepid souls who had taken part in this year's Peninsula Paddle on a day when the Cape of Storms was threatening to unleash galeforce winds and torrential rain. They had started out in pitch darkness at the mouth of Zandvlei, at Muizenberg on the False Bay coast, and had paddled, portaged or dragged their canoes across the Cape Peninsula to the mouth of the Salt River on the Table Bay coast. The full distance of the traverse is some 27 km, but a section had to be skipped this year due to the impending bad weather.

The event was held on 8 June – the Sunday after World Environment Day – and was organised by Dr Kevin Winter of the University of Cape Town’s Department of Environmental and Geographical Science. He was one of four people who undertook the first Peninsula Paddle in 2010, and has noticed the improved condition of some parts of the waterway network since then.

This can be attributed to the Kader Asmal River-Cleaning Project, launched by the City of Cape Town in 2011, which uses Expanded Public Works Programme funding to employ people to remove litter, control invasive weeds and plant indigenous vegetation. Civil society groups, such as the Zandvlei Trust, Princess Vlei Forum and Friends of the Liesbeek, are also actively involved in caring for the city’s waterways – hence the theme of Peninsula Paddle 2014: ‘celebrating citizen action’.

More than 70 people joined in to paddle some, or all, of the route this year, while others acted as support crew or supervised environmental education activities along the way. For the first time, the WRC also entered a team. Once off the water, the paddlers assembled at the nearby Milnerton Canoe Club, where they were able to have a hot shower and revive themselves with soup and sandwiches.

It was here that the launch of the urban river rehabilitation guidelines took place. Author Samantha (Sam) Braid, from consulting engineering firm Aurecon, explained that the guidelines are specifically focussed on enforced rehabilitation, when a regulatory body issues an Administrative Notice – such as a directive, compliance notice or court order – instructing a perpetrator to rehabilitate a river reach to remedy an illegal or non-compliant activity and the resulting disturbance. Often, the interaction doesn’t involve much more than that.

“A study done by the national Department of Environment Affairs found there’s a reluctance amongst the environmental authorities to give compliance advice to people who have been caught out in the enforcement process, because they’re scared of being held liable for inappropriate advice,” she said.

In terms of the Promotion of Administrative Justice Act (PAJA), enforcement officials are accountable for their decision-making, yet there is a bewildering array of legislation relating to watercourses, with numerous overlaps in the jurisdiction of different institutions and spheres of government. The officials only have a mandate to operate within the jurisdiction of their ‘own’ legislation, and their



Sue Matthews

*Peninsula Paddle organiser, Kevin Winter (in grey shirt) and other participants drag their canoes through a canal littered with discarded tyres and other rubbish.*

heavy caseload means that coordination with other enforcement institutions is severely lacking. Furthermore, many of the officials have a background in law rather than ecological sciences, so their capability of assessing the impacts of contraventions on ecosystem functioning is inadequate – and a high staff turnover results in the continual loss of knowledge and experience gained on the job.

“What this means is that when enforcement is done, it’s very limited to the actual administration,” said Braid. “You needed to get your EIA or water use licence or whatever approval was required before you proceeded with your activity, and that’s what the

*The WRC team who participated in the Peninsula Paddle are Reshmili Lutchman, Bonani Madikizela, Adriaan Taljaard, Sudhir Pillay, Inga Jacobs and Thobile Gebashe.*



Karen Watkins

*Natalie Newman (on the right) and friends pull their canoes through the Steenberg Canal, which passes through the poorest areas of the Peninsula Paddle route. Newman served on the steering committee for the WRC project on enforcement-driven rehabilitation of urban rivers, and helped test the guidelines during their development.*



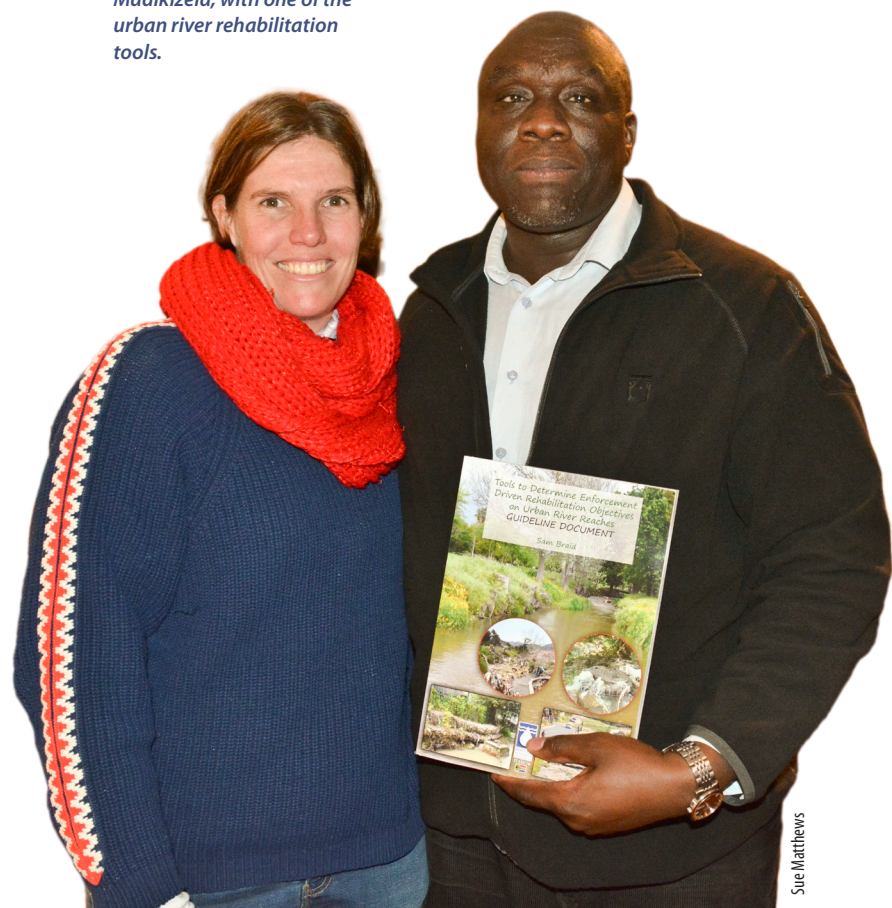
Sue Matthews

focus is on – never mind the ecological degradation that happens to our rivers as a result of those illegal activities.”

The new guidelines will help ensure that the enforcement process involves more than this ‘legal box-ticking’. As part of the research, which was conducted for her PhD, Braid developed three tools – a legislation search tool, a site assessment form and a dashboard tool, all available on a CD accompanying the comprehensive guideline document.

The first of these, the legislation search tool, is a searchable database of national environmental legislation related to rivers. It extracts other sections of legislation that may be relevant or overlap, and the institution responsible for that legislation. This will assist enforcement officials in identifying other stakeholders, especially other government departments, that need to be informed of the enforcement process,

*Project leader Samantha Braid and WRC Research Manager, Bonani Madikizela, with one of the urban river rehabilitation tools.*



Sue Matthews

and also ensure that the requirements of the enforcement action are compliant with adjacent legislation.

“The second tool – the site assessment form – is to help officials when they go out to do an inspection on site,” explained Braid. “It’s a little questionnaire system that helps keep a record of the site, especially if there are changes in personnel, but also so that when you go back to do a follow-up site inspection you can see if there have been any changes to the site, based on your original site assessment form.”

The form includes a checklist of listed activities that are observed or have taken place on the site, as well as a suite of indicators that must be considered for the active channel of the river and both flood banks. The indicators are grouped as follows:

- Site description – land use, ground cover, height of vertical banks, channel substrate description, riverine vegetation composition
- Site character – erosion on the site, percentage invasive vegetation, continuity of riverine zone, dumping in the river channel, litter in the river channel
- Erosion and armouring – macro-channel bank erosion, extent of erosion on s-bends, bank armouring, active channel bed erosion
- Hydrology indicators – state of discharge outlets, canalisation / channelling, levees / flood prevention banks, abstraction, impoundments, culverts and bridges, flood debris
- Water quality indicators – colour, odour, clarity, water temperature, foam, pH, oily sheen, nutrients, oxygen, indication of life
- Discharge quality – colour, odour, pH, temperature, foam, oily sheen.

The site assessment form contains simple measures and descriptions for each indicator. In the case of the indicator ‘active channel bed erosion’, for example, the choice is between none (no bed erosion), degradation (some incision of the active channel) or channelling (> 1m deep incision of the active channel). Any additional information, such as the site layout diagram, photos or notes can be attached to the form to provide a comprehensive record.

Once back in the office, the official enters all the information on the site assessment form into the spreadsheet of the dashboard tool – and *Voilà!* Displayed on the computer screen in front of them is a graphic representation of the impacts at the site. A summary graph shows the extent of negative impacts on seven riverine functions – flood attenuation, sediment trapping, habitat provision, carbon storage, water quality, aesthetic/recreational use and subsistence/cultural use

– for both the active channel and each bank. Below it is a colourful dashboard graph illustrating the degree to which these impacts on riverine functions can be attributed to alien infestation, site clearing, infilling/impeding/dumping, erosion/excavation, discharge, abstraction, impoundment, diverting, structures, channelling/levees and bank stabilising.

Using these results, the official can request a rehabilitation plan that is tailor-made to address the identified impacts at the site. The request should specify the riverine functions to be rehabilitated and any necessary specialist studies, as well as the need for an environmental management plan and monitoring programme.

The site assessment form and dashboard tool were tested in the field by enforcement officials in both Gauteng and the Western Cape, to allow their adjustment for the typical capability of enforcement officials and to ensure that they are suited to a range of site characteristics. These test exercises are included in the guideline document as case studies.

Natalie Newman, a senior environmental professional with the City of Cape Town, served on the reference committee for Braid's research project and was one of the officials who tested the tools. She feels that they provide a consistent approach to enforcement, and have a potentially wider application than their intended use.

“While these are enforcement tools, it was apparent on site that they could easily be adapted for use in determining what proactive actions are required when planning rehabilitation and restoration projects,” she said. “The legislative search tool is also incredibly useful as it not only allows an enforcer to determine applicable contraventions, but could also be used as a pre-planning tool. It can guide a person in determining what legislation needs to be investigated, based on the activities being undertaken.”

WRC Research Manager, Bonani Madikizela, noted that the guidelines draw on experiences across the globe, as Braid had consulted widely and made presentations at international workshops. “The next step will be to develop them further and make them policy,” he said. “We want to influence the policy for fixing our country's waterways as much as possible.”

He added that another WRC project currently underway will expand the scope of this research beyond the rehabilitation of urban rivers. Involving a number of researchers from different organisations, with Dr Liz Day as project leader, it will focus



Sue Matthews

primarily on physical interventions such as bank reshaping and erosion protection structures, but also address water quality improvement, implementation of appropriate flow regimes and the removal of invasive alien fish. The deliverables include a technical manual and a rehabilitation guideline, the aim of which is to guide decision-makers to make informed choices and consider options, trade-offs and consequences.

**WRC Executive Manager: Corporate Services, Reshmili Lutchman, on the highly polluted Black River approaching the end of the Peninsula Paddle, as storm clouds gather over Devil's Peak.**

The final slot on the programme for the launch of the urban river rehabilitation guidelines was reserved for Dr Andrew Gordon, representing the Department of Water Affairs.

“The launch of these guidelines gives me an opportunity to say that Water Affairs greatly appreciates the research that private organisations like consulting companies and institutions of higher learning undertake into the understanding and management of our water resources,” he said. “This research is very practical and useful in helping us do our job.”

“I'd also like to acknowledge the WRC in the excellent job they do in taking funding and channelling it into topics that feed into the department's mandate.”

- To order the guides, *Tools to determine enforcement driven objectives on urban river reaches main report (WRC Report No. TT 593/14)* and/or guideline document (TT 594/14) contact publications at Tel: (012) 330-0340, email: [orders@wrc.org.za](mailto:orders@wrc.org.za) or download a free copy at [www.wrc.org.za](http://www.wrc.org.za) 