

Urban river fighters

Various species of fish need a lot less litter and chemical spills from us to survive in the Duzi

LEO QUAYLE

THE Duzi River's source is in the misty hills of Vulindlela above Taylor's Halt. It flows down the Edendale valley, through the Pietermaritzburg CBD, ultimately to confluence with the Umgeni River below Nagle Dam.

Along this course, and particularly in the urbanised reaches of PMB, it is a highly impacted ecosystem. All aquatic creatures present are forced to contend with overwhelmingly challenging living conditions in this urban environment.

The river's degraded upper catchment with poor vegetation cover loads the river with sediment and results in murky, muddy water; a poorly functioning urban sewer network results in high microbial counts, extreme nutrient loading and blooms of potentially toxic algae; dams and weirs break the river continuum and obstruct migrations; solid waste and plastics in particular, are pervasive and persistent.

Interestingly, solid waste is not always seen as a major threat to aquatic ecosystems — that space is usually reserved for chemical or microbial contamination.

Solid waste is, however, a present and increasing threat to aquatic life.

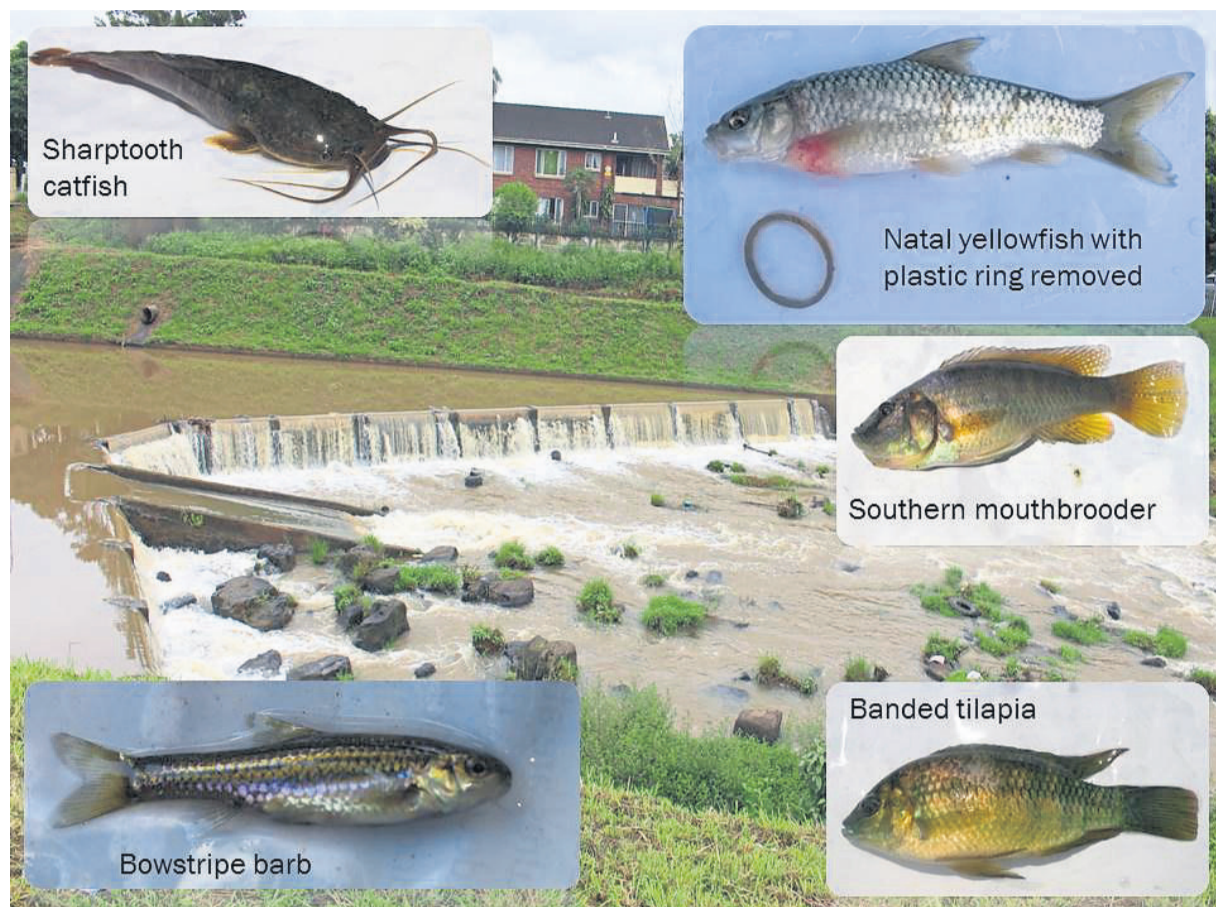
Incredibly though, despite these conditions, various species of fish still choose to make the different habitats of this urban river their home.

The sharp-toothed catfish (*Clarius gariepinus*) is renowned for its ability to survive in poor water conditions and it is no surprise to find this predator and scavenger hanging out in the pools of the Duzi.

Perhaps a little more surprising is the presence of large numbers of Natal yellowfish (*Laboobarbus natalensis*). This athletic migratory species is a well-known angling species and inhabits the pools as well as the faster-flowing rapid sections where it eats algae, invertebrates and other small fish.

Barriers such as weirs and dams can prevent this species from moving to optimal breeding areas.

The banded tilapia (*Tilapia sparrmannii*) is a beautiful fish and prefers the quieter eddies on the peripheries of the fast-



The heavily impacted urban reaches of the Msunduzi River support myriad fascinating species. PHOTO: LEO QUAYLE

er sections and larger pools. The bow-stripe barb (*Enteromius viviparus*) also prefers the quieter, more vegetated sections, particularly in the smaller tributaries where it is often found together with the southern mouthbrooder (*Pseudocrenilabrus philander*). The females of this species protect their young from danger by engulfing them in their mouths!

The amazing longfin eel (*Anguilla mossambica*) makes an almost unbelievable journey to us from its spawning grounds in the Indian Ocean off the coast of Madagascar. As a tiny elver, it travels up the Umgeni River, over various obstacles, including the immense Inan-

da Dam wall, to take up residence in the Duzi, the Dorpspruit and their tributaries. I have even found it in the tiny Bellies Stream in Roberts Road.

It is remarkable that all these species are present and, indeed, sometimes even abundant in the midst of the filth. This group of resilient urban river fighters battle daily against threats and stresses imposed by our urban lifestyles.

This is evident in the fact that some of the more sensitive and specialist fish species are absent — a clear sign that the fight for survival in this system is a fierce one that not all species win.

What brought this fight home for me was a recent fish sampling exercise at the

Commercial Road weir which produced a "collared" Natal yellowfish. This unfortunate fish was sporting a plastic necklace fashioned from a plastic bottle safety seal ring. The ring had become lodged behind its bony gill covers, constricting its gills and pectoral fins.

Aside from giving me the satisfaction of relieving the fish of its packaging and releasing it to fight another day, the event highlighted for me the extent to which our throw-away society is continuously impacting our environment.

I appreciated the symbolism of this fish bearing the burden of our carelessness. We are fortunate to have a remarkably resilient (albeit degraded) ecosystem

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under our noses, supporting myriad fascinating species, but it is one which we abuse on a daily basis.

If PMB is to remain the City of Choice of these tenacious fighters and indeed of our society at large, it is vital that the management of our waste (in all its forms) receives a lot more attention than it currently does. We all have a responsibility to take more care with our waste and to "Reduce, Reuse and Recycle".

Ultimately, our action and innovation or lack thereof will be reflected in the lives of our urban river fighters.

Leo Quayle is a principle scientist at the Institute of Natural Resources.

No truly wild horses left

IT may come as a disappointment to equine enthusiasts, but a new genetic study has found that no truly wild horses still exist and that a population inhabiting Mongolian grasslands actually is a feral descendant of the earliest-known domesticated horses.

Przewalski's horse, now numbering roughly 2 000 in Mongolia, was long thought to be the last wild horse — meaning no history of domestication — unlike other free-roaming horses like the mustangs that descended from steeds brought to North America centuries ago by Spaniards.

But researchers said recently an examination of the genomes of dozens of ancient and modern horses concluded that Przewalski's horse, saved from extinction in the 20th century, descended from horses domesticated in northern Kazakhstan some 5 500 years ago by people in what is called the Botai culture. The research showed that the Botai culture offers the earliest-known evidence for horse domestication, but that their horses were not the ancestors of modern domesticated breeds.

"The world lost truly wild horses perhaps hundreds, if not thousands of years ago, but we are only just now learning this fact, with the results of this research," said University of Kansas zooarchaeologist

Sandra Olsen, one of the researchers.

The history of people and horses has been intertwined for millennia.

"Horse domestication was a critical innovation," said archaeologist Alan Outram of the University of Exeter in England, who helped lead the study.

"Horse riding was the fastest form of transport for thousands of years, from the Copper Age over 5 000 years ago until the steam train. Even then it was really only the motor car that replaced it on a wide scale. Horses revolutionised human mobility, trade and modes of warfare," Outram added.

Przewalski's horse, named for a Russian who described them in the 19th century, is relatively small and stocky. Like horses depicted in prehistoric cave paintings, it is dun-colored with a dark erect mane. The current population is descended from 15 individuals caught a century ago, with Przewalski's horse later reintroduced into the wild.

Some horses from the domesticated Botai herds escaped and became the feral Przewalski's horse, the researchers said.

"This means that we must continue the search for the true ancestors of modern breeds by gathering samples from places like Ukraine, western Russia, Hungary, Poland and that region," Olsen added.

— Reuters.



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