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# WATER STEWARDSHIP IN ACTION: A MINNOWS TALE



YORK TIMBERS



FORESTRY EXPLAINED: OUR *WATER* LEGACY

# Rescuing a river to save a minnow

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## ENDEMIC FISH TEETERING ON THE BRINK

The threat of extinction is a dark cloud hanging over many of South Africa's endemic fish species. Due to their limited distributions and confinement to small, localised areas means any extinction-causing events (the river drying up, a pollution incident, the introduction of an alien species, etc.) could potentially result in the whole species being wiped out in one go.



Unlike their charismatic mammalian counterparts, endemic fish species don't evoke the same level of interest and as a result far less is known about them. Funding can also be a major issue when it comes to research and efficient and effective conservation plans.

As a result South Africa's endemic fish species are some of its most threatened and have required out of the box thinking and the combined efforts of private enterprises and conservation agencies to ensure their survival.



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# A MINNOW'S TALE

The Treur River Barb (*Barbus treurensis*) is a small, dull and easily overlooked fish, but one with an exceptional story to tell.

This survival against the odds tale started in 1957 with its discovery in a pool near Bourke's Luck on the Treur River, in Mpumalanga. Since then this tiny fish has ensured those trying to conserve it experience a rollercoaster of emotions.

Less than 10 years after its discovery, conservationists feared the "river of sorrow" had lived up to its name when they failed to find a single Treur River Barb in subsequent surveys and the species was written off as extinct. It was believed that the culprits were two alien fish - the rainbow trout (*Oncorhynchus mykiss*) and large-mouth bass (*Micropterus salmoides*) - were responsible for the barb's demise.

## HOPING FOR A HAPPY ENDING

Thankfully for the Treur River Barb, the Blyde river had come to their rescue. The Blyde's upper reaches provided for their refuge, ensuring a small population clung onto existence. A population that would in the future prove to be a lifeline for the species on more than one occasion.

Bound by two waterfalls, at Christmas Pools, the Blyde population may have been protected from its two main predators, but not from other threats. By 1977, only 500 fish in one deep pool remained.

This population crash highlighted the need for urgent action and spurred on the creation of a sanctuary for the Treur River Barb on the Blyde River. This gave conservationists some breathing space, but didn't change the fact that a single population is very vulnerable.



It became clear that if the Treur River Barb was to be saved, an “innovative” conservation approach was needed. A plan was hatched to relocate fish from the Blyde back into the Treur, which at first glance seemed an obvious solution, but it wasn't without its opposition.

Concerns arose around the plan to release the relocated fish further upstream than any Treur River Barb had ever been naturally found (above the New Chum waterfall). Releasing them outside their natural range changed a conservation staple – a translocation, into a ‘conservation no-go’, introduction of a species to a new area. Yet the gravity of the situation left conservationists with no other option.

In 1978 the first Treur River Barb relocation was done. Seventy fish caught with electric fishing gear were carefully transported 30km from the Blyde River to the Treur, where they were released without incident. For the first time in over a decade there were two viable populations. Since then several other translocations of fish between the two populations have been undertaken.



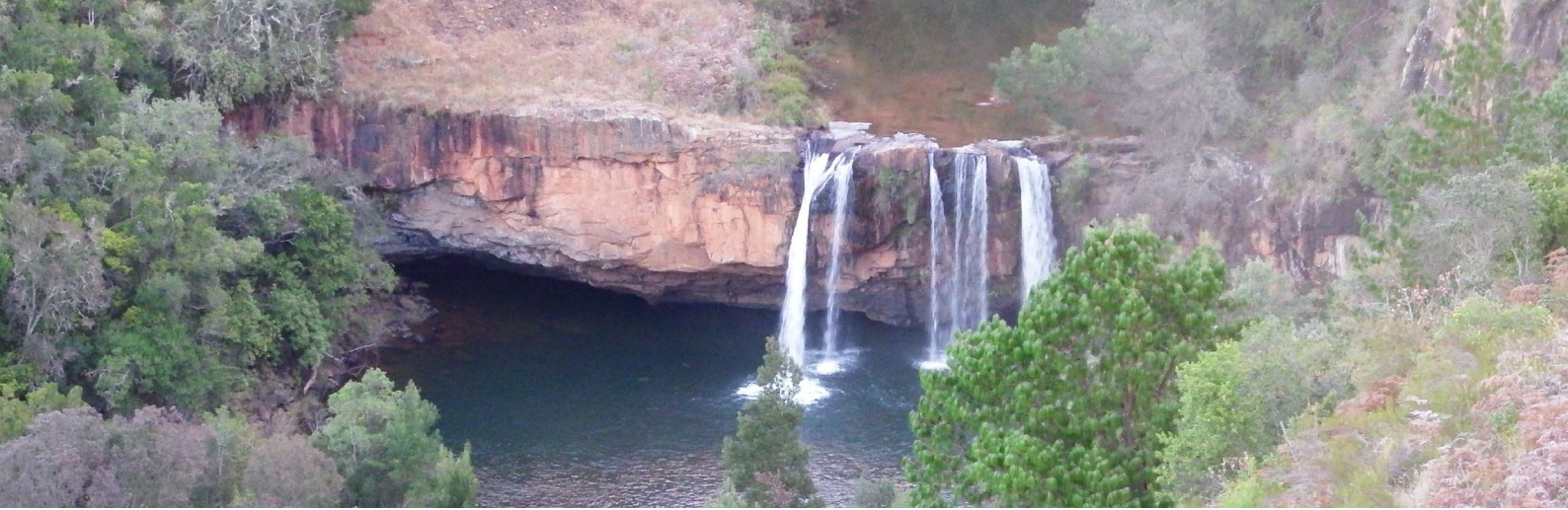
# FORESTRY'S ROLE

## FISH & FORESTRY A LASTING PARTNERSHIP

If the minnow's tale were to be made into a film, the South African forestry industry would have a lead role. It was the forestry and paper group Mondi which initially chose conservation over recreation and established the Blyde River nature reserve that allowed the last pocket of Treur River Barb to avoid extinction. They were also deeply involved in the 1978 relocation, working alongside Mpumalanga Tourism and Parks Agency in a private company/conservation agency partnership that was unusual at that time.



Fast forward 40 years and it is York Timbers which has become the champions of this little fish. Their plantations bordering the Blyde and Treur Rivers are home to both populations making York Timbers the proud custodians of these fish. It's a role the company is taking seriously, which is why a study was initiated to uncover the state of both populations almost four decades on.



## THE NEXT CHAPTER

The big question now is how healthy is the population?

Armed with nets and gum boots, York Timber researchers will be retracing the footsteps of the initial Treur River Barb conservationists to answer this, hoping that this time they will find to thriving populations.

Used in the rapids the electro-fishing gear will stun the minnows without harming them, so they float to the surface where the researchers can take measurements and get a handle on the population. The deeper pools however will pose more of a challenge, requiring the researchers to submerge themselves into the bracing waters of the Treur and Blyde.

The data from both rivers will allow the scientists to determine the status of this International Union for Conservation of Nature (IUCN) red-listed species based on abundance and the population structure, the amount of juveniles, sub-adults and adults. Only then will they know whether the minnow's tale has had a happy ending.



# Saving more than simply fish

A second species, the vulnerable Harlequin Sprite dragonfly (*Pseudagrion newtonii*), will also be surveyed although not at the same time. This is another species whose existence is threatened by a very limited distribution, with the Blyde River being the only place in Mpumalanga where the species has been recorded.

During both sampling periods the riparian zones and their adjacent buffer zones will also be monitored and the degree of weed infestation detailed. This information will help York Timbers develop plans to manage these important areas.

Managing and maintaining the banks of both rivers is crucial in ensuring the health of both terrestrial (land-based) and river systems. Water quality and quantity can be severely affected by alien species that reduce the flow of water from land into the river, adding sediments (small soil particles) to the river system which reduces the visibility and oxygen. These zones also play an important role in both land and water-based food webs, making them rich in biodiversity as long as the diversity of natural plant species is not compromised by alien species.



## The future?

Until the first surveys are done a huge question mark remains over the future of the Treur River minnow, a fish that has evaded extinction not once but twice in two separate rivers. The data from the survey will give a first proper snapshot of how this Mpumalanga minnow is doing, which is essential if a conservation plan is going to be formulated to sustain this species.