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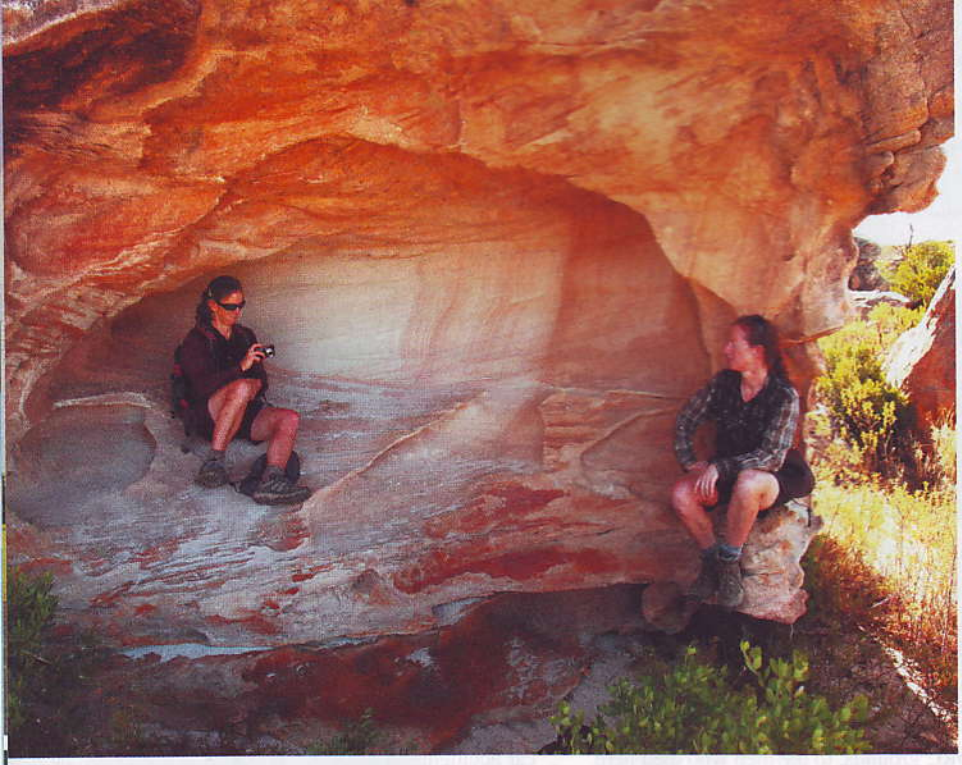


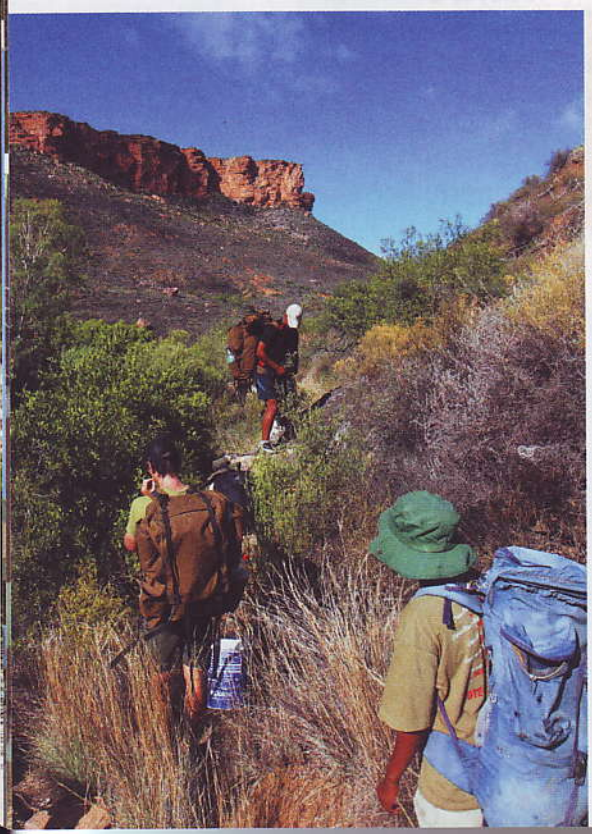
Gone Fishing

On a fish survey along the rugged Oorlogskloof River outside Nieuwoudtville STEVE MOSELEY discovers that small fish do count

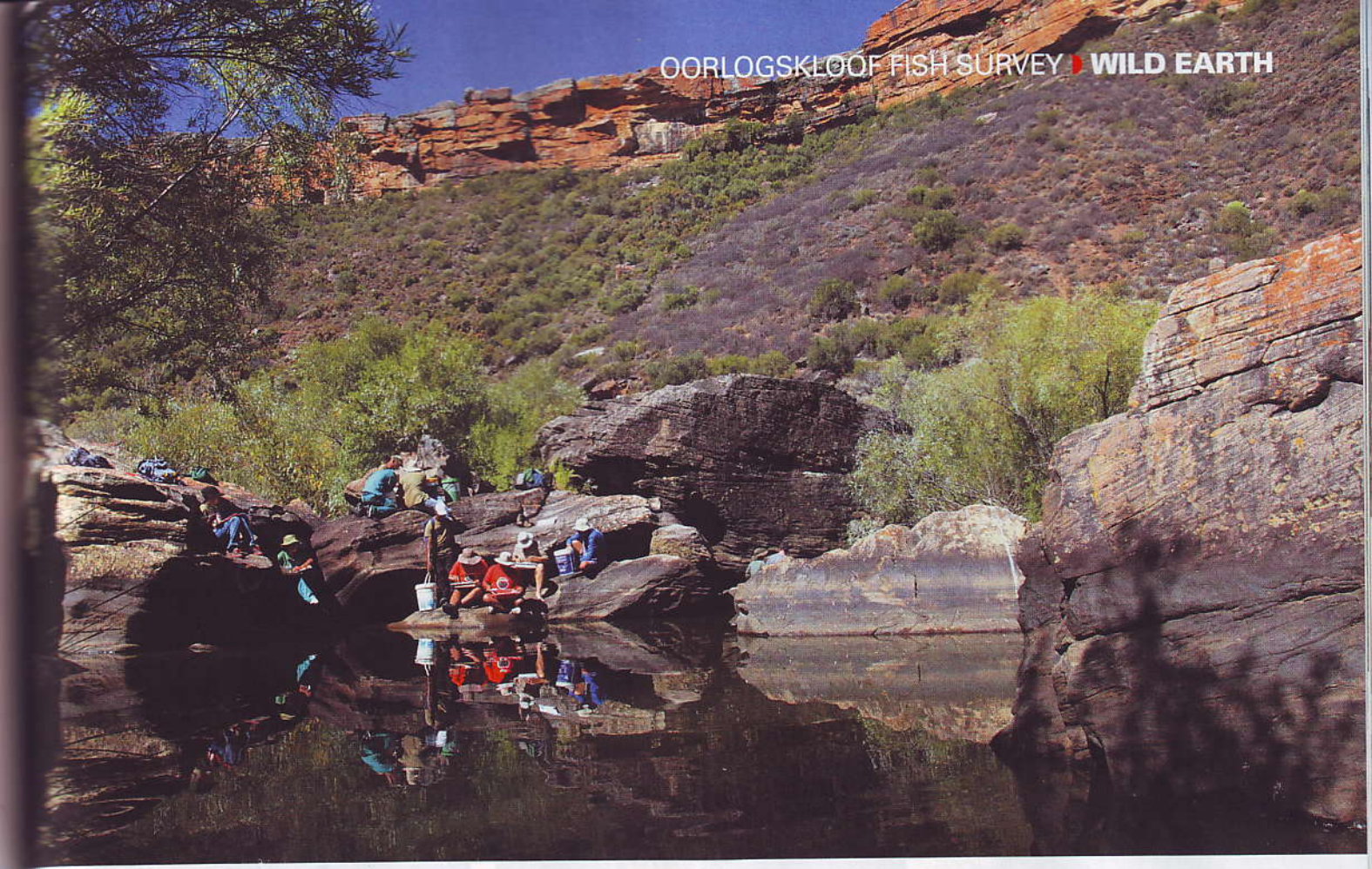
On a patch of river sand, I sat with my feet jutting into the cool water of the rock pool and waited patiently with my temporary colleagues. In the depths, the crew manning the net trawled it through the water, bringing the leading edges together to encircle what we all hoped would be a decent catch. Giant boulders spilled along the course of the river, and baboon talk echoed from the steep slopes and burnt-orange cliffs fringing each side of the kloof.

Soon buckets of small fish were being carried ashore and it was time to get down to business. With my tray, ruler and new knowledge on fish identification, I set to work measuring. A task easier said than done. It required a delicate touch, first to grasp each slippery individual between thumb and fingers and try to line it up on the ruler.

No matter how small, the fish seemed to have the uncanny ability to know just when I had them positioned to lock on a measurement, and they'd wriggle free and I had to start the process again. My colleagues were soon rattling off data for the scribes to record while I, with my unpractised skills, felt a little like a fish out of water.



TOP: After a day of counting fish in the Oorlogskloof River, the late-afternoon climb out is a test of everyone's endurance. LEFT: Below the orange cliffs, participants carry all their equipment and supplies as they make their own trail from pool to pool. BELOW: Accessible space for the team to operate on is often limited and sometimes confined to small sandy patches or a slight clearing in the surrounding thicket. OPPOSITE: Surrounded by the beauty of the pristine environment in the kloof, the survey team spreads out on the rocks at one of the permanent pools, to tackle the counting of catch.



I had joined a group of dedicated men and women who set out for five days each year to monitor fish populations. It all takes place along a 25km stretch of the seasonal Oorlogskloof River in the Oorlogskloof Nature Reserve outside Nieuwoudtville in the Northern Cape. The survey forms part of the Cape Critical Rivers Project, a partnership between the Northern Cape Department of Environment and Nature Conservation (DENC), CapeNature, and the Endangered Wildlife Trust.

Early each morning we met at reserve manager Wessel Pretorius's house – we stayed in various B&Bs and guest houses in the Nieuwoudtville area – for the drive to our drop-off point. Here the group would hike into the kloof and move down river surveying pools until the exit point. Each day ended with a steep climb out.

"Volunteers only ever come on the survey once," Wessel informed me when I first introduced myself to the motley crew. I soon found out why, during our first physically gruelling descent into the kloof through the rugged terrain.

The section of the Oorlogskloof River that runs through the 5 000-hectare reserve is home to some pretty important indigenous fish species. Its most important inhabitants are the endangered Clanwilliam sandfish (*Labeo seeberi*) and the endangered Clanwilliam sawfin (*Barbus serra*).

"The surveys here are important because the Oorlogskloof River is home to the last viable population of Clanwilliam sandfish, and it's the only river in which this species is successfully breeding and recruiting," says Alwyn Lubbe, field officer for the Cape Critical Rivers Project. "Through long-term monitoring we aim to capture the changes in fish populations over time, and also the trends of aliens in proportion to indigenous species. Basically we assess what's happening, why it's happening and then how to manage for survival and risks."

The survey involves netting 36 permanent pools along this stretch of river, which were initially identified in the 1990s. At each pool the routine was the same and, once the catch had been retrieved from the 10-metre-long seine net, the fish were identified, checked for parasites and measured, before being released.

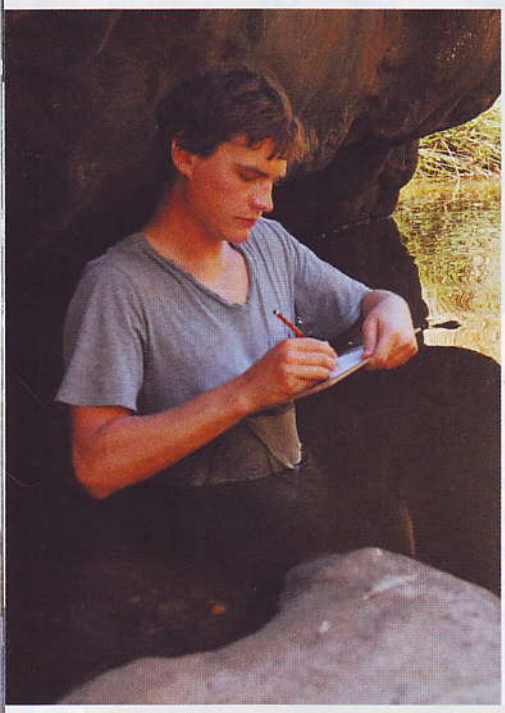
The time spent at each pool was to a large extent dependent on the number of fish caught, which was always just a sample of the numbers surviving there. At times, catches turned up more than 1 000 slippery small fry, none of which would get anywhere near the exaggerated size of 'the one that got away'. However, they were small – a good sign that the populations were intact and breeding.

As the survey progressed, good numbers of sawfin and sandfish were recorded as well as chubbyhead barb (*Barbus anoplus*), and Clanwilliam yellowfish (*Labeobarbus capensis*) further downstream. An unwelcome alien fish recorded in many of the pools was the banded tilapia (*Tilapia sparrmanii*).

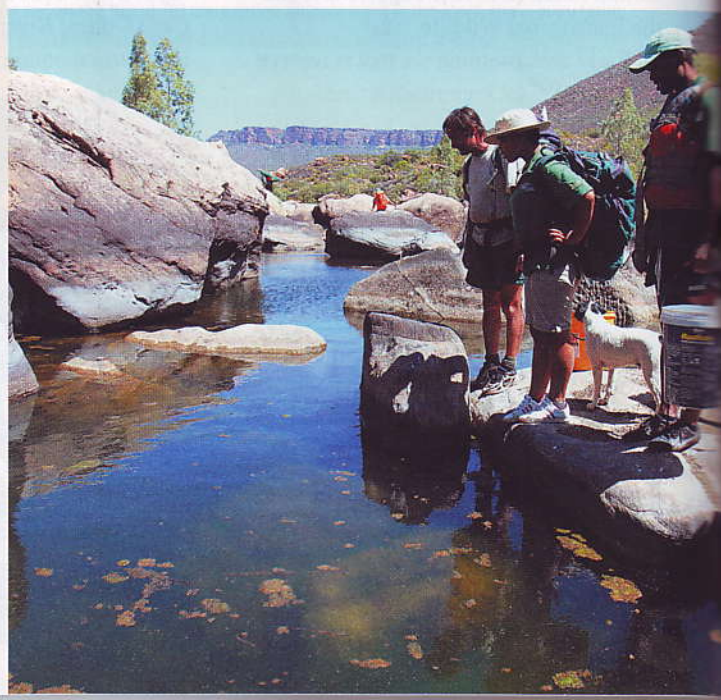
According to Mandy Schumann of DENC, river systems are prone to outside influences such as sewage and pesticides brought in by flood waters, which can threaten water quality. However, what many don't realise is that a real threat here is the alien fish. "Alien fish can be broken down into two categories," explains Mandy. "The first includes those introduced from outside our borders for recreational fishing such as bass and bluegill sunfish.

"Then there are indigenous species, such

LEFT: After a successful trawl the catch is scooped into buckets that are transferred into trays for counting. ABOVE: A good specimen of Clanwilliam sandfish being measured before being released back into its pool. BELOW LEFT: At each pool Alwyn Lubbe, Cape Critical Rivers Project field officer, carries out habitat assessments and water-quality readings. CENTRE: Along the kloof interesting plants like March lilies grow. RIGHT: Bonnie Schumann of the EWT Drylands Conservation Programme with a fine Clanwilliam sandfish.



BELOW: Due to a number of factors the appearance of pools can change so a photo record is used to monitor physical changes at each site.
RIGHT: Oorlogskloof Nature Reserve manager Wessel Pretorius (left) together with Annamarie Witbooi and Andries Fortuin survey an algae-infested pool where alien fish have decimated the indigenous species.



as banded tilapia, which have been moved to systems where they don't naturally occur. In both cases, the aliens outcompete the indigenous fish for food and also predate on the young. Other aliens are bottom feeders, stirring up the mud and making the water murky, which negatively affects the habitat of clear-water-loving indigenous species."

Downstream, from pool 34 to 36, things suddenly changed for the worse. Gone were the clear water and indigenous fish, to be replaced by furry rocks, thick algae scum and just a few alien bass and bluegill sunfish lurking in the depths, waiting to make a meal of the next hapless insect. "I call this a water desert," says Mandy.

"There's no life in these pools except for these few alien fish."

According to Mandy the drastic change in the water quality in the last three pools is a direct result of the eradication of indigenous species by predatory alien fish. The ecology of the system is destroyed when both the indigenous fish and the invertebrate populations that feed on the algae, and maintain good water quality, are removed.

Mandy points out a natural rock barrier spanning the river. "We believe this is protecting the river upstream by stopping the alien fish from getting any further and causing more damage," she explains. "Without it the story of this river would be a very different one."

After five days, I had a new respect for those who dedicate their lives to saving our natural heritage. The daily treks into and out of the plunging kloof were characterised by lots of slipping and sliding, stumbling and clamouring, blood and sweat. But through it all the team's good nature and enthusiasm endured.

Most would be back next year to do it all again, but I think I'll stick to my rod and reel and a nice flat beach when I next tell my friends I've gone fishing. ■

Map reference E2 see inside back cover

Cape Critical Rivers Project

- The project aims to conserve endangered fish in the Cape Floristic Region (Western- and Northern Cape).
- It implements conservation actions outlined by the Biodiversity Species Management Plans for the endangered Clanwilliam sandfish and the critically endangered Barrydale redfin (*Pseudobarbus burchelli*).
- Once gazetted these will be the first legally binding management plans for any freshwater species in South Africa.
- The project is supported by the International Union for Conservation of Nature Save Our Species Fund, and private funds.
- This survey shows good representation through the age classes of the endangered sandfish and sawfin, which indicates recruitment is still good. Banded tilapia is still the only alien fish species present in the reserve and will continue to be monitored.
- For further information www.ewt.org.za/programmes/RRP/river.html

ABOVE LEFT: These freshwater mussels were an unexpected find at some of the pools and are the first live specimens recorded here. BELOW LEFT: Some volunteers only join the survey once because of the energy-sapping hikes in and out of the kloof over steep and rugged terrain. BELOW: The motley crew of staff, scientists and volunteers who took part in the survey.