

# Poor Decisions of the Past may Cost Cape its

## 'Living Gold'

*Imprudent introductions of invasive alien fish species in Western Cape waters may cost the country some of its most rare endemic fish species if no immediate action is taken.*

*This has emerged from the latest report on the State of Yellowfishes in South Africa.*

*Lani van Vuuren reports.*

Referred to as the continent's 'living gold' African yellowfish are striking creatures well known and valued for their beauty and as a food source. According to Prof Paul Skelton, MD of the South African Institute of Aquatic Biodiversity, yellowfishes are endemic to Africa, and constitute a lineage of about 80 large cyprinid fish species with some well defined traits and characteristics.

The most outstanding feature of the African yellowfish lineage is the high number (about 150) of cell chromosomes – a fact only recently discovered (most cyprinid

species have around 50 chromosomes in each cell). The large size and fighting spirit of some species make them excellent game fish. There are adults that grow beyond 150 mm standard length, with larger species attaining a length of about a metre, and a mass as much as 30 kg.

These fish occur in all the larger rivers in sub-Saharan Africa, including the Nile, Congo, Zambezi, as well as in the Great Rift and other lakes of East Africa. They extend south as far as KwaZulu-Natal in the east and the Orange and Clanwilliam Olifants in the west.

The new report, compiled by the Yellowfish Working Group (YWG), was sponsored by the Department of Environmental Affairs & Tourism, the River Health Programme and the Water Research Commission. Assessing the state of the nine yellowfish species that occur in South Africa, the report highlights the plight of these indigenous fish, especially those found in the Western Cape, which are facing near extinction.

Of the nine South African yellowfish species, four are classified in the World Conservation Union Red Data list as 'threatened', while several others are not in a healthy state. As Bill Mincher, chair of the YWG points

out, "Considering that yellowfish take five to seven years to reach sexual maturity and the rate at which pollution is increasing, we simply do not have the time to allow matters to perpetuate."

### RARE OLIFANTS-DORING SPECIES DISAPPEARING

No other river system in South Africa has as many endemic fish as the Olifants-Doring River system and its tributaries. Eight of its ten indigenous fish species are endemic to the system, all of which are threatened, including the Clanwilliam yellowfish (*Labeobarbus capensis*) and the Clanwilliam sawfin (*Barbus serra*).

The Clanwilliam yellowfish is considered the Western Cape's premier freshwater game fish and South Africa's second-largest yellowfish, attaining 11 kg in weight. Unfortunately, few anglers have the pleasure nowadays of outwitting and landing this powerful fish as only a small number of adult Clanwilliam yellowfish are still present in the Olifants and Doring rivers and their first-order tributaries, reports Dean Impson, a freshwater fish scientist at CapeNature.

The population and distribution range of the Clanwilliam yellowfish have declined drastically over the last 50 years. It is said that up to the 1950s they provided excellent sport for anglers, and being excellent eating were a popular source of protein for farmers and their employees.

The Clanwilliam sawfin occur in large shoals, often in the company of Clanwilliam yellowfish. Like other yellowfish, sawfin are supremely adapted to life in rivers. They are found in a variety of aquatic habitats from fast shallow runs to deep pools, depending on free movement between these habitats for feeding, breeding or resting.

According to Bill Paxton, a freshwater ecologist based at the University of

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Cape Town's Research Unit, recent surveys have confirmed that sawfin numbers throughout the catchment are dangerously low and populations are few. Sawfin appear to have disappeared altogether from the main stem of the Olifants River within the last 30 to 40 years. "Perhaps one of the most disturbing findings is that there are neither young recruits in the Doring River main stem, nor for a considerable distance upstream of tributary confluences."

Legal and illegal introductions of alien fish to the Olifants-Doring River system have largely been blamed for the disappearance of the endemic fish species. Largemouth and smallmouth bass were introduced by anglers

between the 1930s and 1940s and, finding a ready source of food in the indigenous fry, they quickly spread through the rivers gradually replacing indigenous populations wherever habitat conditions proved suitable and their movements were not restricted by natural barriers.

These are not the only invasive alien fish to be found in the Olifants-Doring River system. Bluegill sunfish, carp, Mozambique tilapia, sharptooth catfish, banded tilapia, rainbow and brown trout have all been legally or illegally introduced.

Other factors contributing to the demise of indigenous fish in the catchment include increased



*Smallmouth bass have devastated Western Cape yellowfishes.*



*Rainbow trout have severely affected whitefish in several Western Cape rivers.*



## ALIEN SPECIES FOUND IN WESTERN CAPE RIVERS

Species	Scientific name	Approx date introduced	Legal introduction?	Impact on indigenous biota
Banded tilapia	<i>Tilapia sparmani</i>	1960	Yes	Primary competitor
Bluegill	<i>Lepomis macrochirus</i>	1950	Yes	Predator and competitor
Brown trout	<i>Salmo trutta</i>	1910	Yes	Predator
Carp	<i>Cyprinus carpio</i>	2000	No	Competitor, degrades habitat
Largemouth bass	<i>Micropterus salmoides</i>	1940	Yes	Predator
Mosquito fish	<i>Gambusia affinis</i>	1950	Yes	Competitor
Mozambique tilapia	<i>Oreochromis mossambicus</i>	2000	No	Primary competitor
Rainbow trout	<i>Oncorhynchus mykiss</i>	1910	Yes	Predator
Sharptooth catfish	<i>Clarias gariepinus</i>	2000	No	Predator and competitor
Smallmouth bass	<i>Micropterus dolomieu</i>	1940	Yes	Predator

Source: RHP: State-of-the-Rivers-Report Olifants/Doring and Sandveld Rivers

water abstraction, and habitat destruction. Dams that have been constructed to store surplus winter water mainly for irrigation purposes hamper spawning migrations of Clanwilliam yellowfish and sawfin while benefiting alien fish. In addition, irresponsible farming practices, such as bulldozing and farming within the floodplain, have led to the wholesale destruction of the riverine habitat and the introduction of

fertilisers and pesticides to the detriment of all wildlife.

## THE ASSASSINATION OF THE WITVIS

The contemptuous actions of past authorities against indigenous fish in the Berg-Breede River system have cost South Africa dearly. In the 1930s, the Groot Drakenstein Angling Society recommended to

the then Jonkershoek division of the Cape Department of Inland Fisheries that smallmouth bass should be introduced into the river to get rid of the 'witvis pest' so that rainbow trout (introduced 30 years earlier) would have less competition for food.

Ironically, the powerfully built bronze Berg-Breede whitefish (*Barbus adrewi*) or witvis provided excellent sport for anglers and fly fishers up



Clanwilliam yellowfish habitat.

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to the 1950s. Coloured communities next to Paarl, particularly enjoyed eating whitefish and caught large quantities when the fish were gathering for spawning or when the river was very low and shallow in late summer.

Within 70 years these once abundant fish have been reduced to an endangered species. Impson reports that historically, this whitefish occurred as two separate populations in the Berg and Breede rivers respectively. However, the Berg River population is now regarded as extinct as no fish have been caught in the river since 1996. “Whitefish in the Breede River catchment are also likely to become extinct within the next 30 years if no corrective action is taken.”

## CORRECTING PAST MISTAKES

Stakeholders interested in yellowfish conservation in the Western Cape catchments will have to work hard to turn the clock back even just a little, maintains Impson. While there are no conservancies targeting specific indigenous yellowfish in the area, some measures are being taken to halt dwindling numbers.

An ambitious project aimed at removing alien fish (mainly bass) from priority streams (including Rondegat, Krom and Suurvlei rivers) while restoring the habitat and breeding areas of indigenous fish in the Olifants-Doring River system was launched a few



*Modifying riverbeds without written permission from the appropriate authorities is illegal.*



*Endangered sawfin being released.*

years ago. The project is supported by the Western Cape Bass Anglers Association and the Cape Piscatorial Society.

It is further hoped that indigenous fish will benefit from the recent formation of the Greater Cederberg Biodiversity Corridor; a major internationally funded conservation initiative to better conserve the area.

Farmers and fly fishers have shown increased interest in introducing

whitefish into their dams. Whitefish are said to breed well in dams that have appropriate gravel and rock beds for spawning areas. CapeNature has stocked specimens in about ten dams in the Berg and Breede catchments since 1980.

- To order the report, **State of Yellowfishes in South Africa 2007 (WRC Report No TT 302/07)** contact Publications at Tel: (012) 330-0340; Fax: (012) 331-3565; E-mail: [orders@wrc.org.za](mailto:orders@wrc.org.za) 