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Burdekin Rainbowfish on the verge of disappearing from Running River!

Peter J. Unmack & Michael P. Hammer

With golden to green bodies, bright red fins and distinctive black zig-zag lines on their flanks, aquarists have long recognized the rainbowfish from Running River in the Burdekin catchment of northern Queensland as unique. The population has also been somewhat enigmatic due to uncertainty surrounding its taxonomy. The issue of whether they represent an undescribed species, or an unusual colour variety of Eastern Rainbowfish *Melanotaenia splendida* remains unresolved. Names in common use for this fish include Burdekin Rainbowfish, Running River Rainbowfish, Hidden Valley Rainbowfish or Zig Zag Rainbowfish (the latter is also sometimes used for *Glossolepis dorityi* too). The term Burdekin Rainbowfish can be equally applied to unusual looking fish found in various parts of the broader Burdekin River system, but the latter three names are specific to the Running River fish, and here we use the name Burdekin Rainbowfish as that is the historical name used for this fish.

In the next issue of Fishes of Sahul there will be a comprehensive article reviewing information on the Burdekin Rainbowfish. In the meantime we recently (August 2015) sampled various Rainbowfish populations across the Burdekin drainage and have come across some unusual findings concerning Running River, and by contrasting our data with previous knowledge from ANGFA members, an alarming pattern has emerged with strong conservation implications.

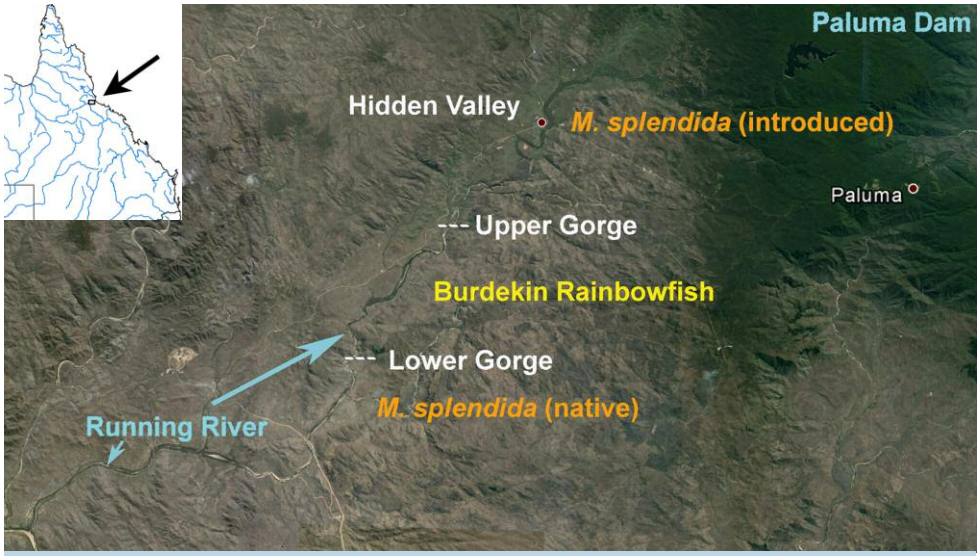

Fig. 1. Map showing location of various locations mentioned in the text. Map data provided by the following sources: Google, CNES/Astrium, DigitalGlobe and CNES/Spot Image

Two gorges appear to promote natural patterns of rainbowfish distribution in Running River, resulting in three distinct zones (Figure 1). The Burdekin Rainbowfish is largely limited to the middle reaches of the river. The lowermost section of Running River is dominated by typical looking Eastern Rainbowfish, and there appears to be barriers in the downstream gorge section that prevents these from moving upstream. There is the occasional observation of Burdekin Rainbowfish lower down, but this seems to be seasonal or episodic (e.g. relating to large flow events), as per our recent visit where only Eastern Rainbowfish were encountered. The upstream limit of Burdekin Rainbowfish aligns to another gorge just below the township of Hidden Valley. No Rainbowfish are considered native upstream of this gorge. Some however, are thought to have been released into Birthday Creek in the upper Running River,

Burdekin Rainbowfish from the mid section of Running River. M.H.

but could not be found at the release site when it was sampled earlier in 2015 (Keith Martin pers. comm.). In addition, typical Eastern Rainbowfish have also been seen in Paluma Dam since 2004, but not downstream of the dam (Jason Shaffer pers. comm.). Surprisingly we just found large numbers of Eastern Rainbowfish in the upper Running River at Hidden Valley at the main road crossing. No rainbowfish had ever been reported at Hidden Valley at least up until 2013. We also noticed a few Eastern Rainbowfish extending further downstream in the Burdekin Rainbowfish population (Figure 2).

Essentially, Running River Rainbowfish is about to get genetically swamped out of existence by these newly arrived Eastern Rainbowfish and the genetic dilution has probably already started. This is because the two species are quite closely related and it is highly unlikely they will be able to co-occur and maintain separate gene pools. Naturally co-occurring Rainbowfishes are virtually always from very different Rainbowfish lineages-species such as the Splendida, Trifasciata, Nigrans and Maccullochi groups, which are all quite unrelated to each other, however, different species within those groups never co-occur. Thus it is paramount for anyone who has Burdekin Rainbowfish to take good care of them. Earlier collections are more likely to represent the original fish than what is swimming in the river today, so please contact us if you have any known origin Burdekin Rainbowfish. So far we have determined that Bruce Hansen and Keith Martin have breeding colonies from a collection made in 2012, Peter Eggler has some from 2010, and Peter Ford has some too. Both ourselves and Peter Eggler also have fish collected in 2015.
There are other populations of Burdekin Rainbowfish in different Burdekin tributaries, but they are poorly documented and remain essentially unstudied genetically or morphologically. We are initiating some genetic work on them shortly to try and sort out their taxonomic status. In addition, it will be necessary to get some captive breeding going for Burdekin Rainbowfish and

Fig. 2. Adult male rainbowfishes from Running River sampled for genetic and taxonomic evaluation; top – Burdekin form, mid reaches, and bottom – standard Eastern Rainbowfish from lower section. M.H.

Habitat of the Burdekin Rainbowfish, the mid section of Running River. M.H.

to make people aware of what is occurring, as another example of the dangers of translocating fish to areas where they don't naturally occur irrespective if they are considered an Australian native species or not. The Burdekin Rainbowfish is an attractive and interesting fish and it would be a shame to lose it completely.

We have established a "crowd funding" webpage in an effort to raise money ($3500+) for a genetic study. This will compare wild (1997 and 2015 samples) and captive fish from various sources, to devise the best mix of fish to setup a captive stock with and to be sure there is no genetic contamination in those broodstock. These stocks can then be distributed to commercial breeders like Ausyfish, Aquagreen and Guyra to try and ensure a larger population is established in captivity which can then be spread more widely to native fish enthusiasts. Stay tuned

Habitat of the Burdekin Rainbowfish, the mid section of Running River. M.H.

to Fishes of Sahul and the ANGFA webpage or Facebook page for more updates. Please consider making a donation, 100% of your donation goes to the project and donations are tax deductible.
http://www.canberra.edu.au/about-uc/uc-foundation/what-can-i-support/research/running-river-rainbow-fish-fund or http://bit.ly/1RZUMht

Unusual Coloured Galaxias

By David Shoesmith

Galaxias olidus (Mountain Galaxias), are amongst my favourite fish to keep and make friends with. I enjoy other Galaxiids, and have kept a few other species including huge *G. maculatus* (Common Galaxias) and *G. truttaceus* (Spotted Galaxias), but *G. olidus* are just a little more endearing to me. It seems that I'll have to be prepared to expand my interests though, as Tarmo Raadik has published the latest research on populations that were all previously classified as *G. olidus* (Raadik 2014), increasing the number of species to 15 in total with 12 of them new!

Galaxias ornatus with yellow, so bright you can see it from across the room, clearly showing at the base of the fins and on the head. D.S.

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Elizabeth Springs Goby *Chlamydogobius micropterus*, male. G.S.

Burdekin River Rainbowfish N.A.

Main features in this issue: