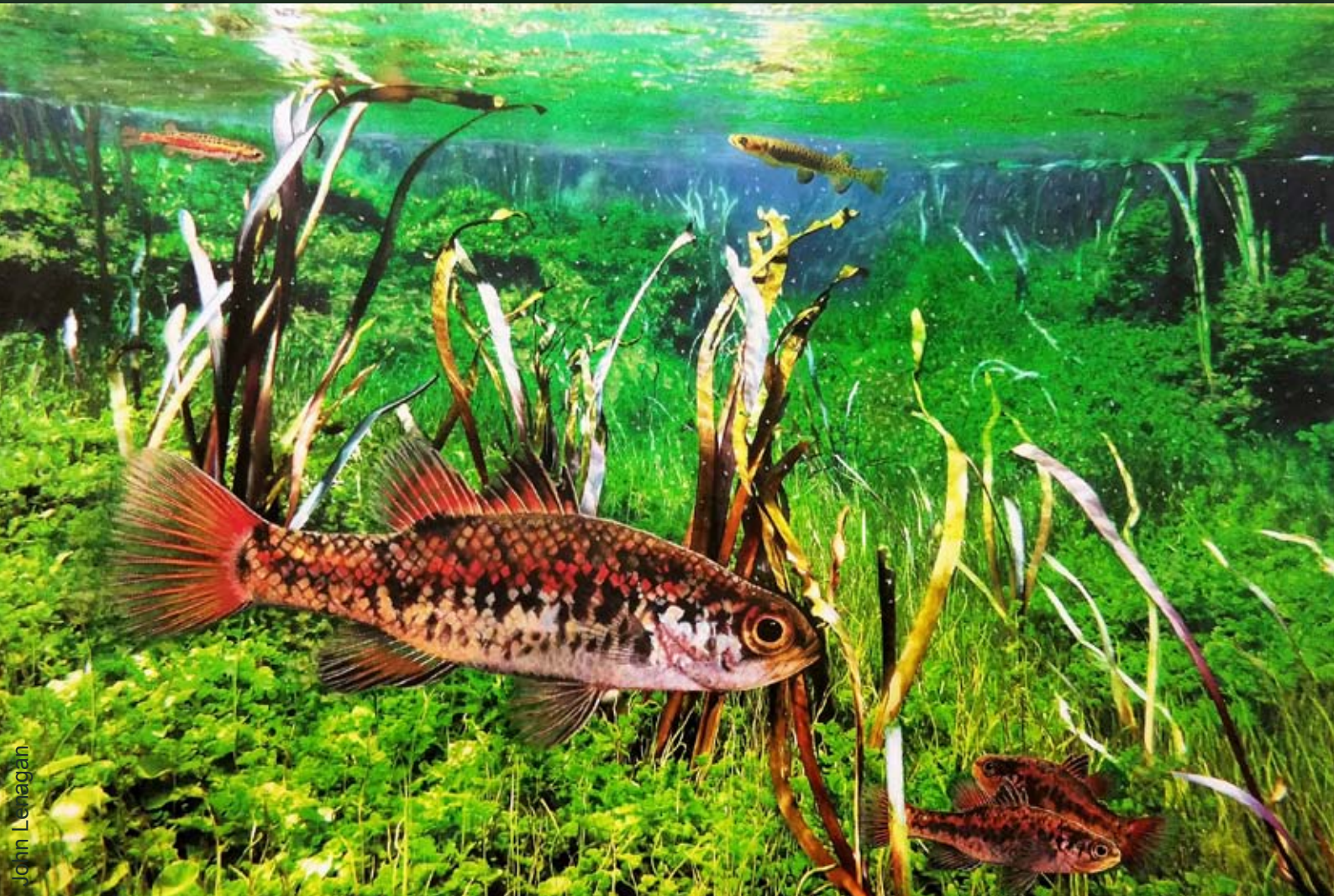


ANGFA



John Lenagan

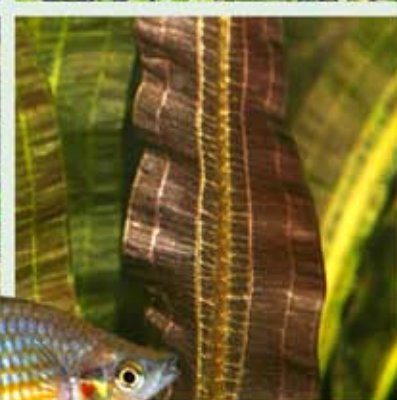
Australia New Guinea Fishes Association 2019 NATIONAL CONVENTION

MELBOURNE
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ANGFA VIC Organisers Statement



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WELCOME

Welcome to the 2019 ANGFA National Convention and an especially warm welcome to our international speakers who have travelled from Germany and the Netherlands to keep us informed on the aquarium scene in Europe.

Every two years ANGFA members representing a unique combination of hobbyists and scientists from across Australia and around the world come together to share their knowledge on the keeping, conservation and classification of the freshwater fishes of Australia and New Guinea. It's a fantastic opportunity to exchange information, and catch up with old and new friends. It's now been two years since ANGFA Qld hosted our last Convention in Currumbin, and this time it's ANGFA Vic's turn to host it here in Melbourne. Taking into account feedback from previous conventions, we have decided to slightly reduce the number of speakers, allow each of them a little more time for their presentation, and allow more time between sessions for socialising; after all, it's not often we all have the opportunity to catch up, and a lot happens in two years! In addition to our program of speakers we also have a trading table with a wonderful assortment of books, aquarium supplies, gifts etc where all the profits go back into ANGFA.

On Saturday afternoon you can look forward to some furious bidding at our mega auction where a range of beautiful and hard to come by species will be available. We extend our special thanks to Brian Andrews, Trevor Coombes, Rick Datodi, Bruce Hansen and Gary Moores for their donations.

Our sponsors for this convention include: Livefish, Aquarium Industries, Aqua One, Aquagreen, Aquasonic, Ausyfish, Guyra, Amazonas, Subscape Aquarium, Studio H₂O Aquarium, Aquariums by Design and Corrcon. You will see their ads throughout this book and we ask that you help support them with your patronage as their support has been essential in helping to make this convention possible.

On Monday following the convention, we have organised an excursion to Mainstream – Australia's largest commercial Barramundi farm, located near Werribee. It's limited to 20 persons, so please let us know in advance. Enjoy the 2019 ANGFA National Convention!

ANGFA

Over the last 37 years, the Australia New Guinea Fishes Association has brought together people with common interests in understanding more about the freshwater fishes and aquatic habitats of the Australian and New Guinea region.

ANGFA's objectives are to promote the conservation, study, keeping and propagation of native freshwater fish species from Australia and New Guinea, and to provide a forum for the exchange of information.

ANGFA members come from diverse backgrounds and walks of life. Members include people with a curiosity about what's in their local creek or lake, aquarists keen to maintain and culture fish, non-government organisations, volunteer conservation groups, and university and government scientists, just to mention a few.

ANGFA produces a quarterly publication called Fishes of Sahul (FOS) which is available to all members as a free digital download. It contains articles on a wide range of topics, including descriptions of new species, field trips to the wilds of New Guinea, articles on fish keeping, breeding and conservation. Every year a beautiful hardcopy compilation of the year's 4 issues is made available for members to purchase.

In addition to FOS, ANGFA produces a quarterly newsletter about what's happening around the country with news from each of our member organisations

CONVENTION ORGANISERS

The 2019 ANGFA national convention has been brought to you by ANGFA Victoria. The organising committee includes ANGFA Vic committee members John Lenagan, Greg Martin, Chris Lamin, Glenn Briggs, Paul Byham, Rod Wubben, Greg Wallis and John Cousins. ANGFA National has assisted with taking booking payments for the Convention and advertising, Glenn Briggs has organised sponsorship and done the leg work organising fish for our mega auction.

Thanks to John Lenagan, Greg Wallis and Greg Martin for providing underwater video footage which will be shown on the big screen during session breaks.

ANGFA Vic holds meetings every two months at the Victorian Field Naturalist's Hall in Blackburn and welcomes visitors and new members. There are also regular field trips to survey creeks and rivers in and around the Melbourne area.

The support of all ANGFA clubs and their committees, our sponsors, and all attending or interested members deserves special mention. All of that put together is what makes a great ANGFA Convention.

PUBLICATION

Special mention and thanks to John Lenagan for painting the Southern Pygmy Perch against the backdrop of Ewens Ponds, which features on the cover and will be auctioned during the convention. Also, a big thank you to Gunther Schmida, and acknowledged members for allowing us to use their photographs throughout this publication.

This publication has been designed and produced by Greg Wallis with assistance from the ANGFA Publications Committee, and has been themed to showcase some of our wonderful Victorian species. It has been printed and bound by Jossimo Print here in Melbourne.



Greg Martin
President
ANGFA Victoria

PHOTO GUNTHER SCHMIDA



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	QLD Keith Martin	NSW Richard Blake
	ACT Michael Jones	ACT Karl Moy
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Dr Gerald Allen
Rick Datodi

PUBLICATIONS COMMITTEE

Fishes of Sahul is produced by the Publications Committee

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David Shoesmith	Greg Wallis
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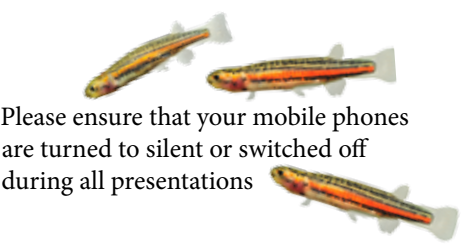
OTHER OVERSEAS GROUPS

Europe	International Rainbowfish Group (IRG)
	www.irg-online.de
President	Harro Hieronimus Postfach 170209 D-42624 Solingen Germany hh@irg-online.de
Secretary	Andreas Deutrich Rather Str. 53 D-52353 Duren Germany





PHOTOS: GUNTHER SCHMIDA, NEIL ARMSTONG, JOHN LENAGAN & GREG WALLIS



Please ensure that your mobile phones are turned to silent or switched off during all presentations

Convention Program

2019 ANGFA National Convention



FRIDAY 11 October

- 18:00 – 21:00 Registration
- 19:30 ANGFA Annual General Meeting
- 21:00 – 22:00 Happy Hour

SATURDAY 12 October

- 08:00 – 09:00 Registration and storage of auction items
- 09:00 – 09:15 **Greg Martin**
Welcome and program overview

SESSION 1 Chair Greg Martin

- 09:20 – 10:20 **International guest speaker #1**
Frans-Peter Müllenholz p 7
Top ten of the International Rain
bowfish Group (IRG)
- 10:20 – 11:00 Morning tea 30 minutes

SESSION 2 Chair Greg Martin

- 11:00 – 11:45 **Keith Martin** p 8
In search of the Daintree Rainbowfish
- 11:45 – 12:30 **Michael Hammer** p 9
Surprising *Pseudogobius*: new species
of Australian Snubnose Gobies
- 12:30 – 13:30 Lunch 1 hour

SESSION 3 Chair John Cousins

- 13:30 – 14:30 **International guest speaker #2**
Wim Heemskerk p 12
A passion for Blue-eyes
- 14:30 – 15:30 **Greg Martin** p 13
Tarkine tigers and other adventures
in Van Diemen's land
- 15:30 – 16:00 Afternoon tea 30 minutes

MEGA AUCTION Glenn Briggs

- 16:00 – 16:10 Auction set-up
- 16:10 – 19:00 Auction
- 19:00 – 19:30 Free time
- 19:30 – 21:00 **Convention Dinner**
Dinner Guests only

SUNDAY 13 October

- 07:30 – 08:30 Arrival and auction fish water changes

SESSION 4 Chair John Lenagan

- 09:00 – 10:00 **Tim Curmi** p 17
Bringing back the endangered
Macquarie Perch
- 10:00 – 10:30 Morning tea 30 minutes

SESSION 5 Chair John Lenagan

- 10:30 – 11:30 **Philip Littlejohn** p 20
A microscopic guide to fish parasites
- 11:30 – 12:30 **Peter Unmack** p 21
Meet the Rainbowfishes who've met
other Rainbowfishes: patterns of
hybridisation in southeastern Australia
- 12:30 – 13:30 Lunch 1 hour

SESSION 6 Chair Glenn Briggs

- 13:30 – 14:20 **Alison King** p 24
Teasing out the importance of flows
for fish in northern Australia's rivers
- 14:20 – 15:20 **Tarmo Raadik** p 25
Continuing the passion: further insights
and progress on galaxiid taxonomy in
south-eastern Australia
- 15:20 – 15:50 Afternoon tea 30 minutes

SESSION 7 Chair Chris Lamin

- 15:50 – 17:00 **Wim Heemskerk**
In search of new genes: New Guinea
- 17:10 – 17:30 **Greg Martin**
Closing address and handover
for next ANGFA convention
- 17:30 – Depart venue
- 17:30 – 19:30 Convention pack up
volunteers needed



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Franz-Peter Müllenholz

Top ten of the International Rainbowfish Group (IRG)

Last year ANGFA Vic President Greg Martin asked me by mail if I could come to Melbourne for this year's ANGFA Convention and give a presentation with video interviews about other fish breeders of the IRG.

"Yes – I can" – I will introduce you to 4 more European fish breeders with more than 10 aquariums each. And this is not only about rainbow fish :-)

Maybe there will also be a reunion with an 'old friend' from Austria, who has further extended his aquarium system.

And as a special encore some nice pictures of the 'masterpiece' of the Japanese Takashi Amano from the aquarium in Lisbon, who unfortunately died too early.

... and at the end there will also be a small homage about my 2nd home Australia (!!!) to be seen, because I was last year over 2

months for the first time completely alone in Australia on the way.

From Perth via Broome, Gibb River Road, Darwin to the Red Center – Alice Springs and Ayers Rock – with the most beautiful pictures of this tour.

'I survived the tour :-)'



Biography – age 67, married, retired. Hobbies include:

- Fishkeeping (Guppies, Rainbows and water plants), since the age of 14
- currently 4 aquariums (300l, 3 x 50l)
- Fish-trips all over the world – but mostly in Australia
- Photographing since the age of 21 – always with my beloved Nikon Cameras
- PowerPoint and video presentations about our trips, fish and their habitats in Australia
- My nickname in Australia was created by Bruce Hansen who coined me the 'European Boomerang'
- Now 25 trips to Australia in the past 30 years – most of them together with my wife Ulli

Over the years you have seen some of my presentations at ANGFA Conventions. But this talk will probably be my last one. After

25 trips to my 2nd home country Australia and at an age of 67 years the end of my wanderlust is slowly coming.

My personal highlight in Australia was last year, when I was travelling alone for more than 2 months with a 4wd Camper – the wheelchair for adventurers. About 12000 km on Australia's roads – from Perth, along the west coast to Broome, further over the Gibb River Road to Kununurra, then east to Katherine and Darwin. Here I spent 10 very nice days with my dear 'old' friends Robyn and Dave Wilson before driving through Kakadu National Park, Mataranka, and on to Alice Springs and Uluru.

... and you can't believe it, I didn't catch any fish or look for water plants on this tour, but just looked at the beautiful areas 'on the road' in peace and quiet and photographed a lot. To have time or to take time for this wonderful seemingly endless

country. But also say goodbye to long, long overland trips and endless rough dirt roads.

Now there have been enough adventures for me in the outback, but it is not yet a final farewell from Australia.

We – my wife Ulli and I – still have one or more 'age-appropriate' goals in Australia.

Not driving much 'overland', but flying as much as possible, visiting 'old' friends like last year here in Melbourne – just enjoying your/our Australia together.



PHOTOS FRANZ-PETER AND ULLI MÜLLENHOLZ

Keith Martin

In search of the Daintree Rainbowfish

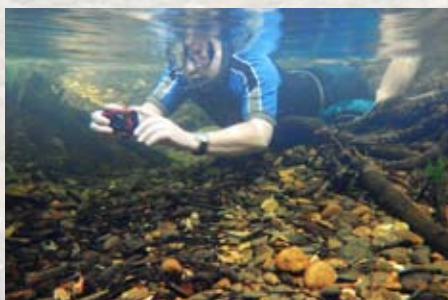
The Daintree Rainbowfish (*Cairnsichthys bitaeniatus*) is Australia's newest rainbowfish species, being discovered in 2012 and formally described in 2018. In this presentation, Keith will describe how the fish was first discovered in the streams of the beautiful Daintree Rainforests of North Queensland, and the initial search to locate specimens and determine the extent of populations. Following confirmation that this form was indeed a new species, it became clear that the species was extremely rare and threatened, prompting a push for formal recognition as a Threatened species. Keith will describe the results of further searches in the area, which have located new populations and shed light on the specialised ecological niche that the species prefers. One population is being monitored following a severe natural change in environmental conditions.

The Daintree Rainforest streams are a

fantastic place for exploring and snorkelling, and Keith will complete the presentation with a video compilation that showcases the various other fish and wildlife species encountered during the surveys.



Biography Keith Martin is a retired Environmental Scientist who has lived and worked in tropical Australia for over 40 years, firstly in the Northern Territory then in Cairns, North Queensland since 1995. He is particularly interested in the rainbowfishes of the region and spends much of his time with partner Susan exploring the backblocks of north Queensland, looking for unusual rainbowfish forms and trying to determine their current distribution and habitat preferences. This study has developed into a more formal project in collaboration with scientists from the University of Canberra and the Northern Territory Museum. He is an active member of the Australian New Guinea Fishes Association (ANGFA), contributing many articles to the journal 'Fishes of Sahul', and is also an ANGFA National committee member. He



is the author of numerous papers and consultancy reports on the ecology of northern Australia and Indonesia and is co-author of the NT Museum handbook 'Freshwater Fishes of the Northern Territory'.



PHOTOS SUPPLIED BY MICHAEL HAMMER, JOHN LENAGAN AND GABRIELLE LYONS

Michael Hammer

Surprising *Pseudogobius*: new species of Australian Snubnose Gobies

We often think of species discovery as occurring in some remote, idyllic unexplored location, and it's great to learn and dream of these possibilities. The tale of species discovery in *Pseudogobius* however, involved a journey across and between major Australian cities, where thigh-deep anoxic mud would seem like a paradise to but only the very keen puddle pirates, and of course goby taxonomists. Discoveries were not limited to the field, with much time spent keenly looking through jars for gems among museums species, and one significant discovery made during a visit to a fish room in Melbourne! Collective work with a range of collaborators has revealed several species new to science in both temperate and tropical Australia.

Pseudogobius are a common and widely distributed group, and chances are if you live near the Australian coast, your local coastal stream, estuary or mangroves will have a population of one species or another, and often multiple living together. Yet the group is pretty poorly known, other than the Bluespot Goby in southern Australia, a name linked to the Swan River Goby

Pseudogobius olorum (but even this species is a complex story). Admittedly at first glance they are relatively obscure being small, grey and bullet shaped. Once cleared of mud and settled into clean water they are neatly marked, being bold and hardy aquarium fish. Paying close attention to dots at the base of the tail, stripes on the body, and colour patterns in the fins is key to telling various species apart.



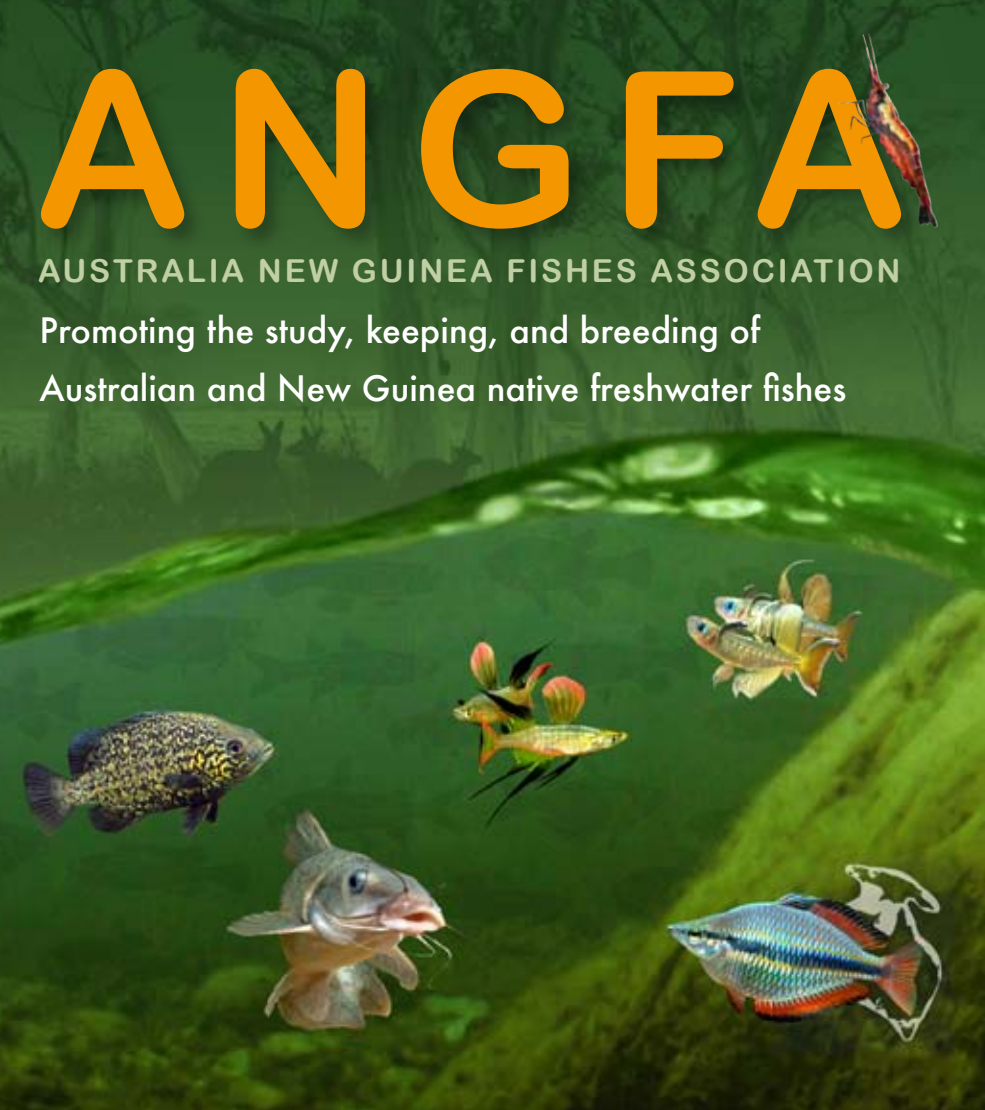
Biography Michael works as the Curator of Fishes at the Museum and Art Gallery of the Northern Territory in Darwin. His current work spans both freshwater, estuarine and marine environments with a major task involving cataloguing and describing the Northern Territory fauna (some 1500 species and ever growing!). His role involves field biodiversity surveys across northern Australia and New Guinea including local and remote areas, with follow up taxonomy and reporting to improve conservation and management outcomes. He has a strong focus on publication, science communication and public programs and is a keen supporter of citizen science and ANGFA.



ANGFA

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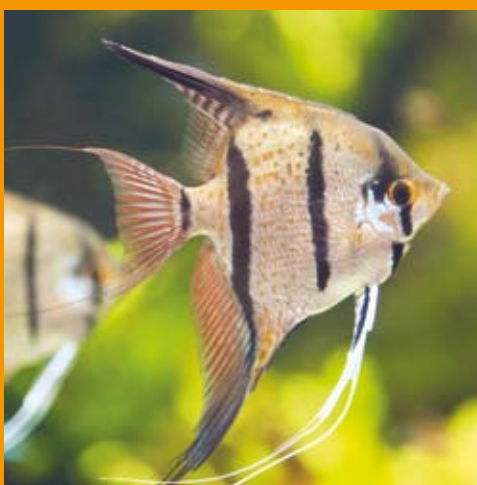
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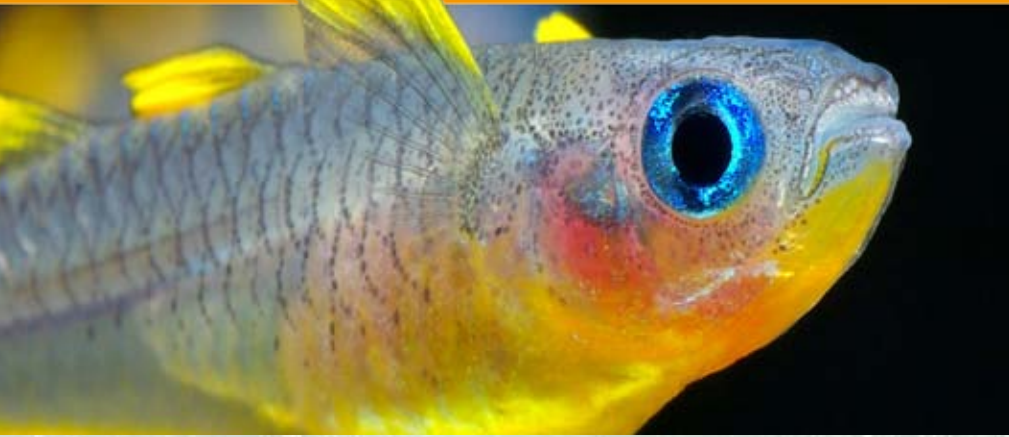
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Wim Heemskerk

A passion for Blue-eyes



A passion for blue-eyes is a presentation from Wim's 40 years' experience of keeping and breeding 'blue-eyes' from New Guinea and Australia. With lots of beautiful fish photo's he will take you through all varieties of blue eyes known to the European hobby with background information about distribution, care, water conditions and the (re)classification of species in the course of time. Starting from the *P. furcatus* which was discovered in 1953 by a fellow Dutchman to the species that still have to be classified with some Australian help.

Wim's interest in blue-eyes started with *P. connieae* shown at an aquarium exhibition in Antwerp, Belgium. The behaviour of the *Pseudomugil* was different to that of other rainbownfish and attracted his attention. After gaining more information about blue-eyes, an increasing interest in the species was soon born. In those days blue-eyes were pretty rare in Europe. In order to preserve the species in Europe it was inevitable to start breeding them. It turned out to be the start of a passion for blue-eyes.



Biography Born and raised in the Netherlands, Wim is a civil engineer, specialised in water management and for more than 55 years an planted aquarium enthusiast. Since the late 70's he started breeding Rainbows. At first the larger species and later specialising in blue-eyes. The fascination of seeing and discovering blue-eyes in their natural habitat lead to five fishing expeditions so far. Three to Australia and two to West Papua. Preservation of species, preferably in the wild or otherwise within the hobby, is one of Wim's primary goals.



PHOTOS SUPPLIED BY WIM HEEMSKERK
PHOTOS SUPPLIED BY GREG MARTIN & JOHN LENAGAN



Tarkine tigers and other adventures in Van Dieman's Land

The ancient Eucalypt/Beech Myrtle forests of Tasmania's north west – specifically a large area known as Tarkine/Tarkenya – are under threat from logging and mining leases. The north west is probably best known for being home to the world's largest Freshwater Crayfish *Astacopsis gouldi* also known as the 'Giant Freshwater Lobster'. The long-term success of this extraordinary animal and many others depends on suitable habitat being preserved.

Since 2015, the Bob Brown Foundation has organised an annual Bioblitz, an event where scientists, citizen scientists and volunteers gather over an intensive 4 day weekend to survey and record the mammals, birds, plants and freshwater aquatic species that live in the Tarkine region. The aim of the Bioblitz is to – by recording very detailed data on the fauna and flora of this sensitive

region – be able to add weight to the scientific case that is being built to recommend the long-term preservation of the Tarkine.

Since 2015 Greg Martin and other volunteers from ANGFA Victoria, have been leading the fishes and macroinvertebrate surveying at the annual Tarkine Bioblitz. In the last two years a second event, Wildblitz, has been added and this is run for the four days prior to Bioblitz; Greg will cover this too in his presentation.



Biography Greg Martin began keeping fish at age 9, starting with tetras and a few unusual catfish. A few years later a friend showed him his first Rainbowfish which he remembers as most likely being a female *Melanotaenia splendida* as it was very large and showed only a little colour. This single fish sparked an ongoing interest in native fish.

In 2004 Greg was introduced to ANGFA by a friend. After attending lots of field trips and several conventions, he has become increasingly involved in ANGFA Victoria where he is the current president. As well as organising field trips, helping on the committee and being editor of ANGFA's flagship publication *Fishes of Sahul*, Greg also runs his own business – Aquariums by Design.



AQUARIUMS

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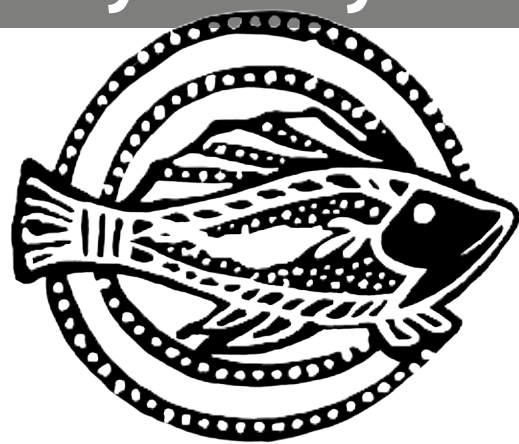
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Mega Auction

Glenn Briggs and Steve Brooks

An integral part of each ANGFA convention, the ANGFA Convention Mega-Auction is always an exciting highlight for anyone passionate about keeping aquarium fishes native to Australia and New Guinea.

Carrying on the standard of recent conventions, the Mega-auction promises to have a great representation of aquarium fishes from Australia and New Guinea, including rare rainbowfish, interesting oddball species, Australian native shrimps, native aquatic plants and also books relating to Australian and New Guinea fishes!

The auction fulfills several important roles: as a fund raiser for ANGFA's operating costs for the convention and other activities, and as a means of providing rare species

to keen native fish aquarists. This is your best opportunity to source a wide array of Australian and New Guinea fishes and other aquatic species that are rarely (or virtually never) available in the aquarium hobby.

The wide array of species presented at the auction is thanks to a network of ANGFA supporters and members from all parts of Australia. (Special thanks to Aquarium Industries, Steve Brooks, Bruce Hansen, Alan and Bruce Sambell, Dave and Robyn Wilson for their support with the auction.) We'd also like to especially thank ANGFA member Gary Moores who now resides in Cairns. Gary has spent many hours in recent weeks, tracking down various oddball species such as Mangrove Jacks, to donate

for the auction. Drought conditions did not help, but he kept persisting, well done Gary!

And for interstate attendees, thanks to Alan Sambell at Livefish.com.au, we can freight your auction purchases direct to your door! Please note fish will be dispatched on the Monday morning after the convention and delivered the following day (Tuesday Oct 15). Cost is \$20 per 5kg box (WA \$25 per box) – a 5kg box typically holds 6–8 adult rainbowfish.



Important information for auction bidders

- Convention attendees will be given a bidder number when they register at the convention.
- ANGFA members who are *only* attending the auction can register for a bidder card prior to the auction commencing.
- Where possible, a photo of the relevant species being sold will be screened.
- Payment for all items bought will be settled immediately after the auction concludes. Credit cards accepted.
- Bidders who are staying at the venue must care for their acquisitions for the remainder of the weekend. Spare aged water will be available for water changes.
- Anyone wanting to have their fish shipped home by Livefish.com.au – please see Alan Sambell during the convention to make arrangements (Alan will ship on Monday Oct 14).



Macquarie Perch *Macquaria australasica*
Photo: Gunther Schmida



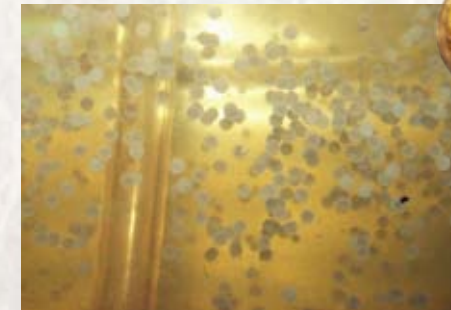
Murray Cod *Maccullochella peelii*
Photo: Gunther Schmida



Tim Curmi

Bringing back the endangered Macquarie perch

PHOTOS SUPPLIED BY TIM CURMI AND GREG MARTIN



The Macquarie Perch (*Macquaria australasica*) was once the most common large-bodied native fish in the Southern Murray Darling river basin. Since European settlement most fish have disappeared and there are now only a handful of waterways where viable populations remain.

In this presentation I will introduce my organization, Native Fish Australia (Vic), and then talk about the ecology of Macquarie Perch, reasons for its decline, and an overview of efforts being made by Native Fish Australia (Vic) to breed this endangered species. I will then talk about the difficulties in the artificial propagation of this iconic species, and what needs to be done to try and solve the mystery, and allow successful breeding of fish kept in captivity.



Biography Tim is a freshwater ecologist and currently is president of Native Fish Australia (Vic). After completing an Aquatic Science degree at Deakin University in the early 1990s, he went on to complete an Honours degree studying native fish ecology through La Trobe University.

Since then he has worked for various organisations including La Trobe University Wodonga and the Environment Protection Authority where he carried out river health assessments across Victoria.

He is particularly interested in the ecology of and restoration of endangered native fish populations to their former levels, and in engaging and empowering the community in ways to protect and promote native fish and preserve and improve river health.



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Philip Littlejohn

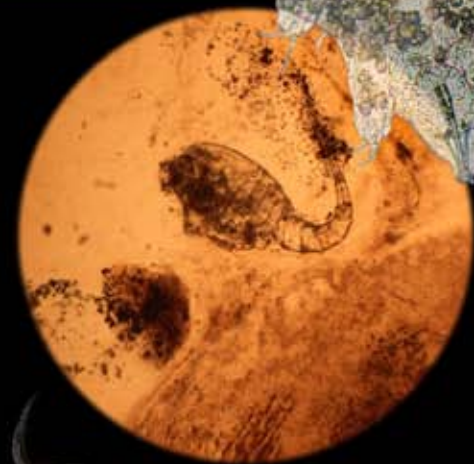
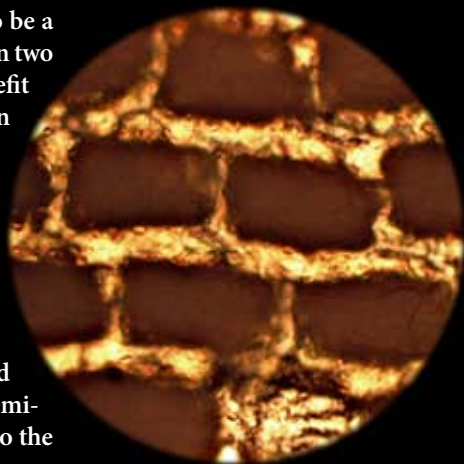
A microscopic guide to fish parasites: observations and identification

The definition of a parasite is said to be a type of symbiotic relationship between two species where the parasite gains benefit at the expense of the host, or simply in the Greek meaning 'Parasitos'. 'One who eats at the table of another'.

There can be some confusion at recognising what actually is a parasite. Harmless 'free living organisms' can naturally occur on the skin, gills or even within the intestine (eg having been recently consumed) and can lead to misdiagnosis and unnecessary chemical treatments. It is of great benefit to the aquarist to be able to differentiate between free living creatures and harmful parasites.

Parasites have evolved ways to evade the fish host's immune response until equilibrium is reached in most situations, although with some they rely on the death of the fish to liberate spores. There is some concern with foreign parasites already in our waterways that our native species have not evolved strategies to counter exotic parasitisation.

Phil's presentation will be a microscopic guide to some of the different parasites encountered from imported, farmed and native freshwater fish. Phil will share some of his personal observations, explain various parasite life cycles, and provide tips for identification and treatment.



Biography I have a passion for nature and I especially focus on all freshwater life. I consider myself very lucky to work in the aquarium industry, working with a wide range of ornamental and native fishes.

My special interests of course include discovering and observing freshwater life, but I also enjoy collecting books on the above, and in particular literature that includes identification on all forms of crustaceans, mussels, snails, leeches and worms.

Trying to learn the dichotomous terminology to the different fauna is challenging, with any spare time spent studying. At the moment I'm homing in on parasites of our freshwater native fish where literature is greatly lacking on our endemic parasites compared to overseas studies.

I've come to the conclusion that the more you learn, the less you know!



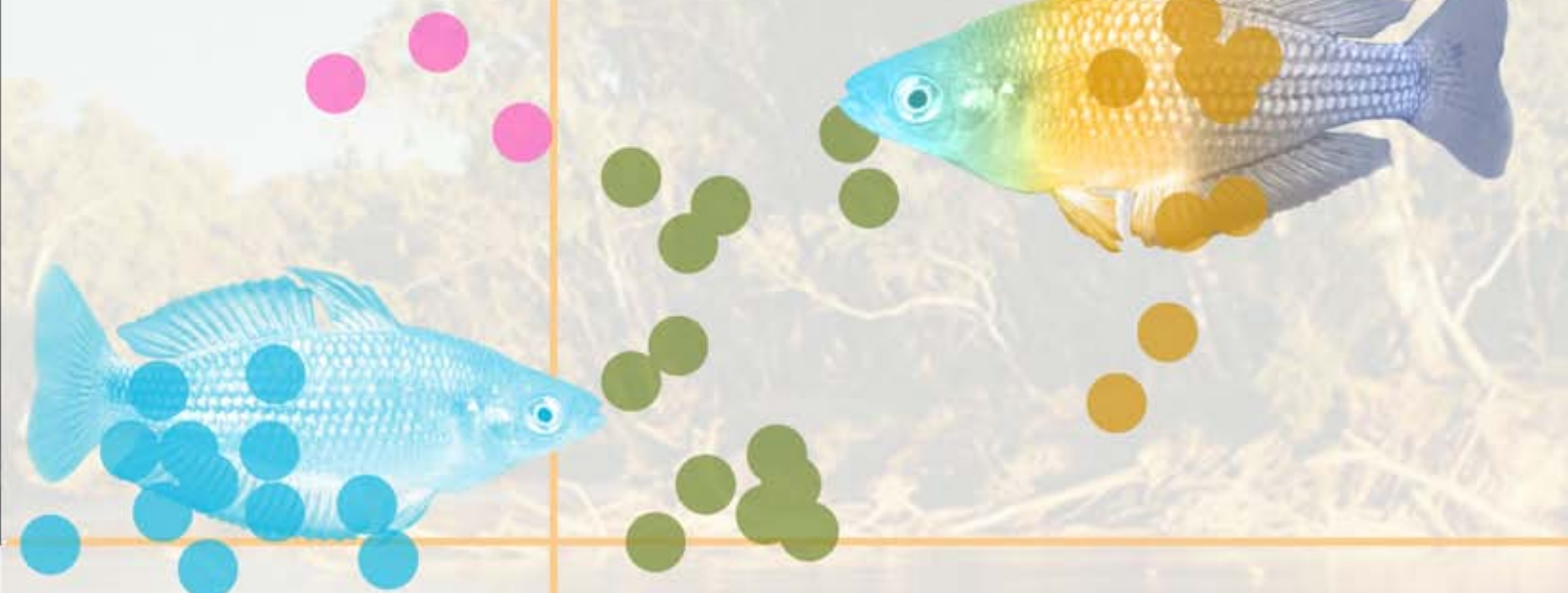
PHOTOS SUPPLIED BY PHILIP LITTLEJOHN, JOHN LENAGAN AND NICOLE ANDERSON

Meet the Rainbowfishes who've met other Rainbowfishes: Peter Unmack

patterns of hybridisation in southeastern Australia

Aside from being the group of Sahul fishes most loved around the world by fish hobbyists, Rainbowfishes also represent the most diverse family of fishes in Sahul with 110 described species. Their next rivals, gobies and gudgeons, each have around 100 species. Thus, these three groups (out of about 35 fish families) make up approximately 50% of Sahul's fishes! Rainbowfishes numerically dominate fish communities and they are found in virtually every river system in the warmer parts of Sahul. As a result, closely related species occurring in adjacent rivers are likely to regularly contact each other over evolutionary time scales. Here I explore the biogeography and distribution patterns in southeastern Australian Rainbowfishes.

The patterns are complex due to multiple mixing zones between species such as Desert Rainbowfish (*Melanotaenia splendida tatei*) and Murray Rainbowfish (*M. fluviatilis*), Duboulay's Rainbowfish (*M. duboulayi*) and Murray Rainbowfish as well as Duboulay's Rainbowfish and Eastern Rainbowfish (*M. s. splendida*). We have now clarified where each of these hybrid zones are located. This information leads us to speculate that Eastern Rainbowfish are slowly expanding their distribution south and gradually replacing Duboulay's Rainbowfish over biogeographic time scales (100,000–500,000 years).



Biography Peter's fascination with fishes began with the purchase of his first fish tank when he was 7 years old. He soon obtained additional aquariums until he filled the two sheds in his parents backyard with fish tanks. Since 1985, Peter has kept a large range of Australian native freshwater fishes, most of which he collected from various travels. Peter has collected fishes extensively throughout much of mainland Australia as well as other parts of the world including Papua New Guinea, North America and southern South America.

Peter was fortunate to be able to turn his fish hobby into an academic career. His interests include just about anything to do with freshwater fishes, but especially fish biogeography, conservation and desert springs. He changed hemispheres in 1994: moved to California, then onto

Arizona State University to complete his doctoral degree on the biogeography of Australian freshwater fishes. He went on to do research at Brigham Young University in Utah on the biogeography of southern South America and western North America fishes, followed by another project at the National Evolutionary Synthesis Centre in North Carolina working on developing GIS models to predict biogeographic patterns in freshwater organisms. Peter moved back to his homeland Australia in 2013 and is currently at the University of Canberra working on fish conservation projects, which include trying to decipher hemi-clonal unisexual carp gudgeons and examining biogeographic patterns in Australian fishes. www.peter.unmack.net





Murray River Rainbowfish *Melanotaenia fluviatilis*
Photo: Gunther Schmida



Little Galaxias *Galaxiella toourtkoourt*
Photo: Gunther Schmida



Southern Pygmy Perch *Nannoperca australis*
Photo: Gunther Schmida



Twospine Blackfish *Gadopsis bispinosus*
Photo: Gunther Schmida

Alison King

Teasing out the importance of flows for fish in northern Australia's rivers

The rivers of northern Australia are some of the most unimpacted river systems in the world. These rivers support Australia's most species rich freshwater fish assemblages, however basic biological knowledge of many species is limited. Furthermore, recent calls to develop the water resources of northern Australia potentially place these rivers and their biota under profound and immediate threat. Although the fish fauna is adapted to the highly seasonal, extreme flow regimes of the wet-dry tropics, will they be resilient to any change in the natural flow regime?

I will provide an overview of recent research efforts in the Northern Territory to understand the importance of flows in the life cycle of freshwater fishes. Much of the research focuses on the Daly River catchment, NT that supports a highly diverse native freshwater fish fauna, important

recreational and commercial fisheries, and provides significant cultural value to its Indigenous people.

The research has examined life history and trait variations, reproduction and recruitment, habitat use requirements and food webs in both wet and dry season flow periods. This research is providing valuable evidence to inform water allocation planning, fisheries, conservation and water management in the region.

The research is part of large collaborative research projects funded under the NESP Northern Australia Environmental Research Hub, the ARC Linkage Program, and FRDC. I also acknowledge the large list of collaborators and colleagues who contributed to these projects, and the Traditional Owners of the land and water in which we work.



Biography Alison King is an Associate Professor at Charles Darwin University, specialising in Aquatic Ecology. Her research interests particularly focus on the ecology of floodplain rivers, flow-ecology relationships and particularly in fish ecology, early life history of fish, life history adaptations and environmental flows. Alison is a well cited, international researcher, with over 50 scientific publications, who has won numerous professional awards. She has experience in working collaboratively with a range of stakeholders and policy makers to ensure improved management of waterways.

Alison is currently the Vice-President of the Australian Society for Fish Biology. In her spare time, she can be found running around after her two kids, gardening and getting outside camping and bushwalking.

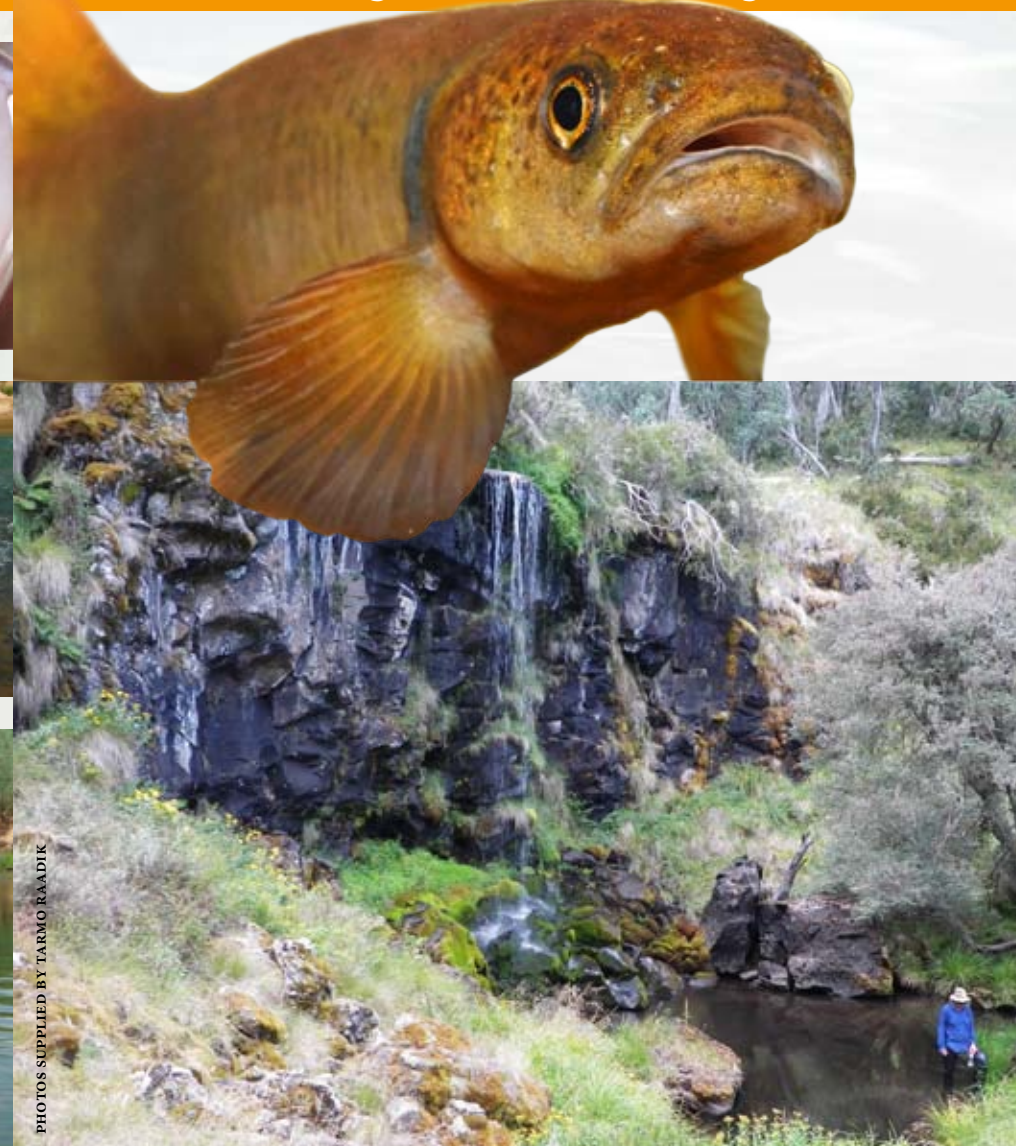


PHOTOS SUPPLIED BY ALISON KING & GREG WALLIS

Continuing the passion: – Tarmo Raadik

Further insights and progress on galaxiid taxonomy in south-eastern Australia

Like mining for gold, Tarmo has struck a rich vein with his taxonomic work on the now infamous Mountain Galaxias (*Galaxias olidus*) species complex – 15 species from one! But, like any good mining story, it is now one of continuing but diminishing returns. Hear more about new discoveries as the remote areas left to explore for Mountain Galaxias dwindle. Also ponder why he would then seek to repeat all that effort and tackle a new challenge – resolving the Climbing Galaxias (*Galaxias brevipinnis*) complex. See images of wild areas and new, as yet, undescribed species, listen to novel theories and insights, and be amazed at further hidden biological treasures in the supposedly well explored south-eastern corner of our ancient continent – it may not be as exciting as the Amazon, but it's close!



Biography Tarmo Raadik is a field-based Senior Research Scientist at the Arthur Rylah Institute for Environmental Research with the Victorian Department of Environment, Land, Water and Planning. He has spent his career working on the diversity, biology and conservation of smaller native fish species, including freshwater crayfish, and more recently, freshwater mussels.

He is also a member of a (now) rare breed: a taxonomist. Instead of starting his taxonomic work slowly, Tarmo dove head first into the complex world of galaxiids, in which he still dabbles (struggles?). He is also collaborating on revisions of many other fish species, is describing a new yabby, and a new species of mussel is in the pipeline.



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Wim Heemskerk

In search of new genes: New Guinea

This presentation is about the 2017 expedition to West-Papua that Wim undertook together with Gary Lange, Johannes Graf, Henni Ohe and Marten Luther Salarosa. During the 20 day expedition my goal was at least to find *Pseudomugil reticulatus*. The presentation includes photographs and movies of the exploration of the rainforest, streams and creeks of the Vogelkop, Lake Ayamaru area and around Bintuni which lead to the discovery of several possible new species of *Melanotaenia*. With the help of the local people it was also possible to rediscover *P. reticulatus* and thus get new genes into the hobby.

PHOTOS: WIM HEEMSKERK, GARY LANGE AND JOHANNES GRAF



Spotted Galaxias *Galaxias truttaceus*
Photo: Gunther Schmida



Flathead Galaxias *Galaxias rostratus*
Photo: Gunther Schmida



Ewens Pygmy Perch *Nannoperca variegata*
Photo: Gunther Schmida

Notes





PHOTOS: GUNTHER SCHMIDA & GREG WALLIS

