



AUSTRALIAN TROUT FOUNDATION

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NEWSLETTER

JUNE 2019

From The Editor

Welcome to the June 2019 edition. In this issue we have a report on the inaugural Ovens River Challenge which was held on the weekend of the 6th and 7th of April. I attended this event and had a lot of fun and caught some fine fish.

There is also a report on what is known about heat tolerance and adaptation in trout and other members of the salmonid family from around the world. Is there some hope for the future prospects of our trout fisheries here in Australia as the climate becomes warmer and drier?

Our National Secretary Paul Stolz has completed a review of how we have progressed against the Key Performance Indicators set out in our Strategic Plan developed last year. We have made progress but there is still much to do. We also have updates on our projects including the Delatite, Buckland Rivers and Mitta Mitta Rivers where we are working with a range of partners to enhance and repair in-stream habitats. Lastly there are details of the recent formal election of a state branch committee in WA....exciting times ahead!

The Ovens River Challenge

by Terry George

The Ovens River Challenge Event organized by The Australian Trout Foundation and Native Fish Australia was held on April 6 & 7 at Myrtleford.

The main purpose of the Challenge was to encourage more people to enjoy fishing. It was sponsored by the Victorian Fisheries Authority Target One Million Program and enabled recreational anglers the opportunity to discuss the future plans for our fisheries with Fisheries managers and the ATF & NFA Representatives.

The weekend began with a little bit of rain Friday evening but the weather was fine for the weekend with quite clear skies. The river was low, cold and clear with some reasonable flow through many of the riffles.



Quite a number of the 70 anglers who registered caught fish. The anglers came from nine angling clubs and it was great to welcome a good number of female and junior anglers.



The longest Murray cod was a magnificent fish of 70 cm caught by Shaun Reynolds in the Buffalo River, and a fine specimen of 60 cm was landed by Kristie Brown in the Ovens River.



Not an ATF Member?

Come and join with the rest of us to protect, rebuild and promote Australia's trout fishing heritage.

Membership is open to any person or association with an interest in trout fishing, whether you fish with fly, lure or bait.

It only costs \$25.00 per year to be an individual member and you will be helping to ensure that trout fishing in Australia remains alive and well for future generations to come.

To apply for membership or refinance your subscription go to: <http://www.atfonline.com.au/home/page/membership>

The longest Rainbow trout was a 35 cm fish caught by Damian Mitchell in the Ovens River at Smoko, and a 30cm fish landed by Terry George in the Ovens at Bright.

The longest Brown trout was a 37 cm fish caught by Kris Leckie in the Ovens River at Smoko, and a 41 cm brownie landed by Terry George in the Ovens at Bright.



All fish were caught, measured, photographed and released.

The Challenge was wound up on the Sunday afternoon with the presentation of awards and prizes followed by a magnificent BBQ lunch for all who were there.



The ATF & NFA thanks all the volunteers who helped in running this successful and popular event; and our thanks also to the Victorian Fisheries Authority for its support. Stay tuned for next year's event.



Heat Adaptation in Trout

by Russell Hanley

In the last issue I mentioned some evidence of heat adaptation developing in rainbow trout reared in the Pemberton Hatchery in Western Australia. Fisheries scientists ran an experiment where they tested the temperature tolerance of a sample of fish from the hatchery against a sample of fish from one of the water supply dams. The hatchery fish are all descendants of stock established more than 50 years ago with no new genetic stock since 1975. The fish from Serpentine Reservoir are descendants of fish regularly stocked into the Serpentine River up to the 1950's at which time the river was dammed for public water supply and stocking ceased. The hatchery fish have suffered through two periods of extreme mortality (>90%) when summer water temperatures rose above 25° C. The fish in Serpentine Reservoir are a small population that has persisted since the construction of the dam. They are able to retreat to deeper cooler layers of water in the reservoir during the summer months and therefore have not been exposed to the elevated water temperatures that killed fish at the hatchery.

The experiment placed fish of both strains in water held at 27°C and observed how long it took for the fish in each batch to die. Trout derived from the reservoir strain began to die after 3hrs and after 7 hours all were dead. By contrast the hatchery fish began to die after 6-7hrs and some fish survived for up to 19hrs. It appears the mortality of most of the hatchery stock during episodes of temperatures above 25°C has passively selected for higher heat tolerance in the survivors. It is important to note that the hatchery fish, although they survived for a longer period at the elevated temperature did all eventually die as well. While the hatchery fish may not be able to survive high temperatures for protracted periods of time, the extra few hours before heat stress leads to mortality could give the fish more time to find a suitable refuge. These results suggest there has been a shift in temperature tolerance in response to a couple of natural events at the hatchery.

Several investigations have confirmed the hatchery fish are less genetically diverse when compared to rainbow trout from Victoria and NSW and all these fish stocks had a common origin. It might be possible to begin actively selecting for more heat tolerant fish. Deliberately exposing some stocks to higher temperatures could develop a line of fish with increased heat tolerance over successive generations.



Rainbows in WA tolerate high water temperatures

A research project in Japan has actively selected for tolerance of higher water temperatures in rainbow trout over 15 generations and have produced a strain of fish with a higher temperature tolerance of up to 27°C and the ability to survive short periods (minutes) at 30-35°C. As yet they have not been able to identify the genetic basis of the improved survival at high temperatures. There is a lot of interest in determining the mechanisms whereby heat tolerance can be developed in rainbow trout because it is a very valuable aquaculture species in many countries where rising temperatures (forecast and observed) are likely to have a significant impact on the industry in the future. Much of the research is focussed on the role of Heat Shock Proteins (HSPs). These are complex molecules which are produced when the many different molecules

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(mostly proteins) responsible for cellular functions are subject to temperatures approaching the maximum limit at which they operate effectively. HSPs appear to 'chaperone' other proteins and provide protection from elevated temperatures. HSPs were first observed in fruit flies and are known to occur in virtually all the species on our planet. If selection does produce higher temperature tolerance via the presence and functions of some HSPs then the presence of HSPs in all fish species suggests that increased temperature tolerance could be developed in any species. We have self sustaining populations of both rainbow and brown trout in all Australian states where trout are present. Is there any evidence that populations of trout in waters where temperatures regularly approach or exceed 25-30°C have developed a higher tolerance? I have not been able to find any information on this topic for Australian trout, but there are documented examples elsewhere in the world. Rainbow trout in North America have a natural range which extends from the subarctic climate region of the Bering Sea to the Mediterranean climate region of Northern Baja California.



Rainbow trout are native to the warm waters of California

Recent studies of the temperature tolerance of fish from the southern end of the range have shown the fish can maintain all critical functions at a temperature of 25°C which is much higher than other populations of this species from further north. Another example of apparent adaptation to high temperatures has been reported from South America. Rainbow trout were first introduced to Patagonia in 1904 and a hatchery established. The Valcheta stream with thermal headwaters (20-26°C) was stocked with fish from the hatchery in 1941. While the headwaters of this stream have high

temperatures the lower reaches are 8-10°C so the population of rainbow trout could simply remain in the lower reaches. Their main prey item however is a small fish which swims upstream to the warmer thermal waters in winter and the distribution of trout over time has been observed to extend upstream much further than it used to. Recent investigations have shown that the fish from the Valcheta stream now have a higher temperature tolerance than fish from the hatchery.

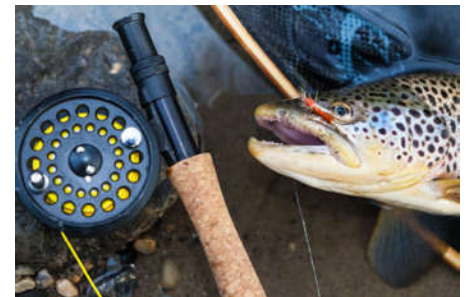
These examples show that there is some latent capacity in rainbow trout to develop higher temperature tolerances. While I could not find Australian examples of heat tolerance developing in trout in the wild I believe it is likely to have occurred here as well. There are several small brooks here in WA for example where self sustaining populations of rainbow trout exist. During summer water temperatures in most of those brooks would equal or exceed temperatures that stress trout. I am not certain of the situation with brown trout in WA but there are frequent reports of brown trout being caught from waters which have not been stocked for many years. So it is possible there are some self-sustaining stocks and therefore some possibility these stocks have developed a higher temperature tolerance. Self-sustaining populations of brown and rainbow trout in some Victorian and NSW streams would have certainly experienced thermal stress during recent decades and likely have developed a higher tolerance of high water temperatures.

If so, this raises an interesting management dilemma. On streams where successive warm dry summers have led to high levels of stress and a significant reduction in the population size there is often a desire to 'top up' the water with a period of stocking with hatchery fish. An understandable response given that a sport fishery needs a reasonable head of fish to satisfy the expectations of anglers. However, continued dilution of the remnant self-sustaining stock that has developed some heat tolerance would likely hamper the further development and establishment of a heat tolerant stock.



Trout in small streams that heat up in summer may already be developing a higher tolerance to temperature

Perhaps some of the streams where the self-sustaining populations have shrunk in numbers and cannot support an effective fishery should not be stocked for a sustained period of time in the hope that further selection for heat tolerant fish may eventually produce a population recovery in those waters that can once more support a viable fishery. That is only my view of course, but I think it is becoming clear to many that if, as predicted, the climate continues to become warmer and drier in southern Australia we will need to explore a range of options including genetic selection both in hatcheries and in the field to ensure the future of our sports fishery for trout. What is encouraging is the solid evidence that both of our major trout angling species are likely to have an inherent capacity for thermal adaptation. If any of you are interested in more details of the evidence for the development of heat tolerance in trout then send me an email at: editor@atfonline.com.au and I will send you copies of the papers that I used for this article.



**ATF Strategic Plan Report
April 2018-19**

Progress against Key Performance Indicators

by Paul Stolz

In March 2018 the ATF held a workshop to develop a strategic plan for the organisation for the forthcoming three years mid 2018-2021 inclusive. ATF members were invited to attend and approximately 30 members attended. The four strategic focus areas the workshop developed comprised:

1. Providing the financial and human resources necessary Australia wide to match needs
2. Developing relevant partnerships Australia wide to ensure the ATF maintains input into important decision-making regarding wild trout sustainability
3. Working effectively with relevant partnerships to improve the trout fishery habitat for wild trout sustainability
4. Communicating effectively with members and others to engage and increase ATF membership and educating as many people as possible in the ways and means to sustain a wild trout fishery in Australia

These four areas were further distilled for quick reference into:

1. Resources
2. Partnerships
3. Habitat
4. Communication and Education.

Key performance indicators were developed to measure the ATF progress against the intentions of the strategic plan.

The table opposite indicates the achievements thus far of the ATF using a traffic light system of Green, Orange and Red. The strategic focus areas, the aims of each area and the KPI's are listed against performance to date.

While there remain a number of red alerts in the table, they mostly depend on administrative support and resources. The important 'on the ground' work of the ATF continues (see following reports from our President). A strategic plan is a guideline and can be changed in response to circumstances that present over the three-year cycle. Our current administrative and manpower limitations may continue to hamper achievement of some targets. Further assessment of the ability to achieve some of these targets within the three-year time frame is currently under review by the ATF Committee.

Strategic Focus Area	KPI	Green	Amber	Red	
1. Resources a) Increase Membership through:	i) Bimonthly Newsletter		more frequent		
	ii) Social Media		Patchy		
	iii) Regional Meetings	2 habitat workshops			
	iv) TV		one possible appearance		
	v) Flyers in targeted areas		WA flyer done		
	vi) New contacts added to data base	achieved			
1. Resources b) Increase financial Resources by increasing membership, gov. Support, corporate sponsorship and events	i) Min increase in membership by 25%YoY	Exceeded in 2018			
	ii) Three project grants + admin funds	Obtained 2018-19			
	iii) Sponsorship funds			Not achieved	
	iv) Two fundraising events			Not achieved	
1. Resources c) Develop succession planning for ATF Committee	i) Increase membership by 25%	Achieved			
	ii) Request assistance via email and newsletter minimum 6 volunteers			Not achieved	
	iii) Contact 30 Angling clubs via email and newsletter seeking delegates and extend invitation to join committee			Not achieved	
1. Partnerships a) Work to consolidate and establish partnerships with key stakeholders	i) Establish regular monthly contact with 8 key contact groups and 16 individual contacts		Unrealistic but probably achieved on an ad hoc basis		
	ii) Minimum 2 MoU's in place			Not Achieved	
	iii) Minimum 4 new partnerships established		Unsure		
	b) Consolidate ATF Chapter in WA and establish a Branch in SA and expand connections in Tas. and NSW	iv) Establishment of ATF in WA	Achieved		
	v) Establish Branch in SA			Not Achieved	
	vi) Expand Connections in Tas and NSW			Not Achieved	
3. Habitat a) Construct an approach to various habitat projects that encourages local initiatives with ATF knowledge and resourcing	i) Workshop on minimum of 4 approaches to driving projects			Not Achieved	
	ii) Minimum of five projects established utilising new approach	Achieved			
	iii) Minimum of 3 angling clubs and two local organisations participate in each project		Part achieved but unrealistic		
	iv) Monitor fish stock levels			Not Achieved	
4. Communications Improve angler awareness about trout conservation and ATF's charter through regular communication and feedback	i) Process for Newsletter distribution bi-monthly		more regular		
	ii) Website redevelopment by end 2018			Not Achieved	
	iii) Minimum two regional meetings per annum			Not Achieved	
	iv) 20% increase in 'rules and regulation' signs on major streams and lakes for all states			Not Achieved	
	v) Minimum 4 additional ATF reps recruited by Dec 2018			Not Achieved	
	vi) Operating guidelines drawn up for current delegates			Not Achieved	

Delatite River In-Stream Habitat Restoration Project

by Terry George

The Delatite River project is another perfect example of working together in partnerships to repair where fish live. The ATF once again acquired funding from the VFA Target One Million – Better Fishing Fund, this time to carry out Habitat Restoration Projects in the Delatite, Rubicon, Jamieson & Goulburn Rivers. Working together, Jim Castles & Geoff Brennan from Goulburn Broken CMA, and Matt Byrne & Terry George from the ATF, planned and completed the task of installing and pinning 24 huge trees in the river, plus 15 big boulders. These trees and boulders have been strategically placed so that high waters will gouge out silt and provide depth (cooler water), refuge and trout food; what's needed now is a wet winter – fingers crossed.



The riparian zones along the river banks at this location on Delatite Lane have already had their Trees for Trout Planting days (thanks to M&DFFC & GBCMA) and no further planting is required at this stage.

At our final inspection, in spite of the low water, we actually spotted a catchable trout swimming into one of the hollow trees – how good was that, it works!



We shall soon provide reports on the other projects on the Rubicon, Jamieson & Goulburn Rivers, which are currently underway and will be completed by end June this year.



Buckland River Habitat Restoration Project

by Terry George

Working together with Andrew Briggs (North East CMA), the ATF engaged an approved contractor for the next stage of instream works, which involves installing an additional 84 tonnes of boulders in the stream. This will complement the initial placement and pinning of 37 hardwood trees and 84 tonnes of boulders. These works were completed in the week commencing Monday 20th May.



On Saturday, June 15, a keen group of conservation minded trout fishers and Landcare enthusiasts planted 500 trees along the river banks adjacent to the instream habitat at Swamp Wallaby Track, Buckland Valley.

The volunteer tree planters came from near and far. There were members (ladies and gents and many young workers) from clubs in Mt Beauty, Harrietville, Bright, Myrtleford, Wangaratta, and the VFFA & CVFFC. It was also very pleasing to have members of Upper Ovens Landcare and Myrtleford Landcare there to lend a hand. The final group of habitat restorers gathering at the site numbered about 27; most being ATF Members and Supporters.



Working together, the event was organized by the Australian Trout Foundation, North East CMA, DELWP & the VFA. Much of the organisation for the day had been done by the ATF and Andrew Briggs from the North East CMA, & the Alpine Fly Fishers who put on a great BBQ lunch; we'll hire those chefs again (well done Andrew & Barrie Heafield).

The task for the day was to plant 500 Australian native trees & shrubs along a section of the river that had suffered from mining activities, bushfires and floods.



It was relatively easy work, digging in the sandy but stony river banks, and the eager planters had the 500 trees safely in the ground just in time to enjoy the BBQ and the normal friendly banter that usually takes place during and after these habitat restoration events. A great group of conservationists working together to restore the health of our waterways and fisheries; it was a great day, well spent and enjoyed by all.

Trees for Trout on the MacAlister - An Angler Riparian Partnership Project

by Terry George

Trees for Trout on the Macalister – An "Angler Riparian Partnership" Project. On Saturday, June 1, a keen contingent of concerned trout fishers made the long drive to the Macalister River near Licola. From Melbourne it was a good three hour drive, though in fact eager tree planters came from all over the region. There were members (ladies and gents) from clubs in Bairnsdale, Sale, Southern FF, Red Tag, & VFFA. The final group of habitat restorers gathering at the site numbered about 35; all being ATF Members and Supporters.

Working together, the event was organized by the Australian Trout Foundation, West Gippsland CMA, the Arthur Rylah Institute & DELWP. Much of the organisation for the day had been done by Matt Bowler from the West Gippsland CMA, Sale FF & the ATF.

We gathered at 9:30am on a gorgeous stretch of the Macalister on the Glenfalloch Station, 3 km south of Licola.



Special thanks to the Landowners of Glenfalloch who wanted to attend but had a previous family commitment. However, they were ably represented by Karen, their environmental manager, who also briefed the group on the conservation works already undertaken including previous tree planting activities. Glenfalloch has river frontage of approx. 50 k's (includes riverbanks on both sides). The Station Owners have generously provided access for conservation minded anglers which is greatly appreciated.



The task for the day was to plant 500 Australian native trees, shrubs and grasses along a section of the river that had suffered from bushfires and floods. It was easy work, as the holes where the trees were to be planted had been dug the previous day, and the eager planters had the 500 trees safely interred in no time at all. Matt Bowler's daughter, Rosie, planted 21 trees; well done Rosie. The group then gathered on the banks of the Macalister when Renae Ayres & Matt Bowler gave informative talks and led discussion on the benefits of installing snags back in the river and planting trees on the river banks.



Then the barbecue lunch arrived – towed in behind a large 4WD. Steak and

sausages and salad on plates with cutlery and plenty of buttered bread, along with drink and sweets – these CMAs know how to feed the volunteers. A fantastic group of conservationist anglers working together to restore the health of our waterways and fisheries. It doesn't get much better than that; it was a great day, well spent.

Lake Eildon Trout Stocking

by Terry George

In early June in arctic conditions a group of hardy volunteers, from Mansfield & District Fly Fishers and the Australian Trout Foundation, assisted Vic Fisheries Officers in releasing a truck load of yearling brown & rainbow trout into Lake Eildon.



These volunteers launched two of their own boats to ferry the trout to various inlets for release into the lake.



This, plus future planned trout stockings, will enhance the Lake Eildon trout fishery and anglers should enjoy the benefits in future years. Thank you M&DFF and ATF volunteers, and of course, the Victorian Fisheries Authority Officers for a job well done.



Fish Habitat Workshop in Traralgon

Another of the highly successful Fish Habitat Workshops is scheduled for Traralgon on Saturday 13th July 2019. The Workshop will be hosted by the West Gippsland & East Gippsland Catchment Management Authorities, Australian Trout Foundation, Native Fish Australia, Victorian Fisheries Authority, DELWP and the Arthur Rylah Institute. If you are interested in enhancing the health of our waterways and fisheries, please come along and join in the discussions on how we can all work together to achieve that common goal. Registering to attend is so easy; just email your name & contact details to: habitat@atfonline.com.au OR renae.ayres@delwp.vic.gov.au

FISH HABITAT WORKSHOP
SATURDAY 13TH JULY - TRARALGON

AT: WEST GIPPSLAND CMA OFFICES
16 HOTHAM ST. TRARALGON, VIC.
10:00 AM - 3:30 PM (CHECK IN 9:30 AM)

IF YOU'RE PASSIONATE ABOUT RESTORING RIVER HEALTH AND FISHERIES, COME ALONG AND FIND OUT HOW TO GET INVOLVED

FREE EVENT
RSVP BY 1ST JULY

CATERED LUNCH FOR ALL VISITORS
(REGISTRATION ESSENTIAL FOR CATERING)

REGISTER AT:
MAIL: habitat@atfonline.com.au
OR
EMAIL: renae.ayres@delwp.vic.gov.au
PLEASE LEAVE YOUR NAME, CONTACT DETAILS AND NUMBER OF PEOPLE ATTENDING

SEATING IS LIMITED - PLEASE REGISTER EARLY

This Habitat Workshop is supported by the 'The Victorian Freshwater Fish Habitat & Flows Roundtable'



State Reports Needed

A request from the Editor
The ATF is well established in Victoria and now has a branch in WA. Our aim in the future is to unite all anglers in Australia who are interested in the objectives of promoting and protecting our trout fisheries. Ultimately there will be state branches in NSW, SA, ACT and Tasmania. In the meantime we are looking for current ATF members in those states who would be willing to pen a few paragraphs from time to time to let us know what the issues are in your state in regards to the status and management of your fisheries. Contributions to: editor@atfonline.com.au

Cheetah Trout!

Cheetah Trout are hybrids produced by crossing brook trout with rainbow trout. They grow to a large size and are reputed to be quite aggressive feeders so are exciting to catch.



The Victorian Fisheries Authority (VFA) will be stocking a batch of Cheetah trout into Lake Purrumbete at **13:30 on Wednesday 3rd of July**. Stocking will take place at the Purrumbete Caravan Park boat ramp. This is the first stocking of its kind in the state and the VFA invites any interested angler to attend to help celebrate this momentous occasion.

The VFA has plans to repeat the stocking next year and to add some tiger trout as well. Tiger Trout are hybrids produced by crossing brook trout with brown trout.

A Trout's Eyesight

by Russell Hanley

Like everybody I have periods of introspection where I spend considerable time thinking about the eyesight of trout.

These periods are often just after I have been astonished by how that fish I was stalking suddenly became aware of my presence and disappeared from view. Short of disguising myself as a tree (it has been done!) it's hard to know what I might have done better?

I have also spent quite a bit of time looking through books and on the web to gain a better understanding of how and what a trout sees from its low vantage point in the water. A lot has been written about this subject but I recently came across a very good explanation of what the world looks like to a trout.

<https://thefishingadvice.com/the-brown-trouts-eyesight/>

WA Branch of the ATF

by Russell Hanley

The WA Branch is now formally established with the election of the following Committee members:

Branch President - Russell Hanley
 Branch Vice President - Terry Goodlich
 Branch Treasurer - Liam Surridge
 Branch Secretary - Mick Small
 Committee Member - Stewart King
 Committee Member - Peter Taylor
 We have held a couple of meetings and are busy with setting our priorities for activities.

Among the first projects identified is the production of a brochure on where and how to fish for trout in the Harvey- Waroona district. This region has 4 irrigation reservoirs which are stocked with trout annually. These are the most family friendly freshwater fisheries we have and there is virtually no information available on access, the rules, bag limits, fish stocks, techniques and so on. The intention is to have the brochure ready for distribution at Troutfest 2019 which will be held on August 31st at Lake Moyanup, one of the 4 irrigation reservoirs which are regularly stocked with fish. The event which is hosted by RecFishWest and Fisheries (Department of Primary Industries and Regional Development) has proven to be very popular with the public and is very much a family outing.



FFRG

The Freshwater Fisheries Reference Group has recently resolved to work with RecfishWest representatives to revise the outdated Five Year Trout Stocking Management Strategy for WA. The Strategy was due for revision by 2016 but budget issues has meant Fisheries has been unable to devote the necessary resources. Russell Hanley is one of three ATF representatives on the FFRG and will assist RecFishWest with the revision.

Clubs and Communities 2019

by Russell Hanley

RecFishWest hosted a Clubs and Communities Conference for recreational angling clubs and organisations. I attended as a representative of the ATF and Stewart King was also there as a representative of both the ATF and WATFAA.

The event was highly informative comprising two days of presentations and discussions. Topics included Fisheries Management, How to deliver high quality recreational fishing experiences, what Fisheries Research is being undertaken in WA, Funding Opportunities, Digital Communications, Habitat and Stock Enhancement, Governance and Finance for Not for Profit Organisations, and maintaining a Social Licence.

A key take home point for me was recognition that freshwater angling is the poor cousin in WA in terms of the level of effort expended in the management of the fisheries. This is directly related to the fact that since the introduction of a licence for fishing from a boat in marine waters more than 230,000 marine fisheries licences are issued each year and by contrast there are about 22,000 marron and freshwater fishing licences combined. Not surprisingly most of the management effort is focussed where most of the money is being spent by the public.

That said it is also clear that more can be done to promote freshwater angling in WA.



Russell Hanley and Matt Gillett (RecFishWest)

Another very informative presentation was on how to develop a better presence in the digital era and I came away with a much better understanding of what works and what does not when it comes to online communications. The ATF and WATFAA are small compared to some of the marine angling clubs but it was interesting to hear we are all often faced with similar challenges around finding people to serve on committees and succession planning.