

WILD TROUT MYTHS BUSTED

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Target One Million
More Victorians fishing, more often

Wild trout (trout that breed in rivers), albeit introduced 150+ years ago from the northern hemisphere, are a key part of Victoria's fishing landscape. They are revered by a passionate following of fishers who throw fly's, soft and hard lures and live bait. Trout fishing helps the regional economy as fishers travel far and wide seeking a wild trout adventure.

Over the last 5 years, more than \$1.5 million-dollars of research and extension has been invested into wild trout through recreational fishing licence grants and under the Victorian State Government's Target One Million plan. This work, called the Wild Trout Fisheries Management Program uses an evidence-based and partnership approach. Trout fishers, fisheries managers and researchers are all working together to better understand what drives the performance of our wild trout fisheries. So, after five years of work, it's time to reflect on what have we

learned, what myths can we dispel and, how we can best manage these fisheries into the future. Let's start with some commonly held wild trout myths.

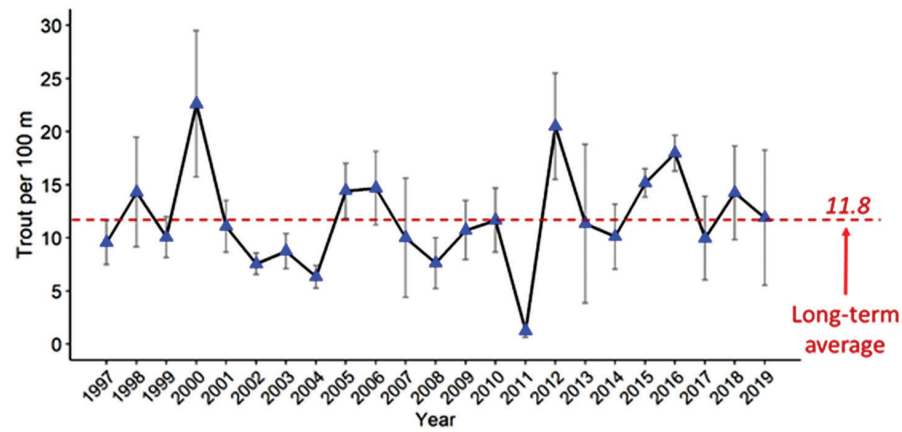
MYTH 1 – TROUT POPULATIONS HAVE CRASHED IN RECENT YEARS

The Victorian Fisheries Authority (formerly Fisheries Victoria) have been collecting trout population data in Victorian rivers for more than 40 years. Our research has found that while fluctuations in trout numbers have occurred over time due to environmental events such as droughts, fires and floods, trout populations are resilient and bounce back quickly when conditions are suitable. For example, over the last 23 years of annual and consistent electrofishing monitoring of iconic Victorian wild trout streams, the long-term average number of trout caught has remained steady at about 12 trout per 100 metres.

In the hot summer of 2013/14, we



▲ Anglers travel far and wide seeking a wild trout adventure and gorgeous brown trout. Image credit: David Anderson/Twigwater.com



▲ Average number of trout caught (electro-fished) in Victorian wild trout rivers annually between 1997 and 2019. Electro fishing is at best 28% effective so, actual trout numbers can be more than 3 times higher than these results show. Image credit: Dr Brett Ingram, Victorian Fisheries Authority.

found low numbers of trout in the lower reaches of iconic trout streams, but normal numbers in the higher altitude reaches in these streams. The low numbers of trout in the lower reaches was not unexpected as we recorded water temperatures well beyond the physiological tolerance of trout (>25°C).

Since 2014 we've conducted 47 surveys across 19 wild trout rivers, finding that trout numbers have remained around the long-term average, but numbers of trout are typically greater upstream where water temperatures are cooler. Looking into the future, climate change forecasts for Victoria predict warmer temperatures and reduced flows which are obviously not good for trout. Independent researchers such as Dr John Morrongiello and Dr Nick Bond predict the distribution range of Victorian wild trout fisheries will contract by up to 50% over the next 20 years. While this is a sobering thought, trout numbers in Victoria have remained steady in the past and recent years, and we expect trout to stay strong in the cooler and higher river altitudes into the future.



▲ Dr John Morrongiello of the University of Melbourne has conducted considerable research on fish populations in Victoria and predicts the distribution range of Victorian wild trout fisheries will contract by up to 50% over the next 20 years. Image credit: Leighton Adem Flylife

MYTH 2 – STOCKING YEARLING TROUT WILL IMPROVE WILD TROUT FISHERIES

We have a long trout stocking history in Victoria. These days almost all trout stocking is limited to lakes and rivers where trout don't breed. We have arrived at this approach because for a long time we just weren't getting the results from trout stocking in rivers. Extensive stocking evaluation & monitoring in the 1970's, 80's and 90's showed poor returns from stocking yearling brown trout on top of wild trout populations. The consensus is that hatchery trout simply can't compete with wild trout, and don't add more trout to the population where wild trout are breeding effectively. In iconic international trout fisheries, stocking hatchery trout has been shown to negatively impact the wild trout fisheries.

To retest the stocking theory with anglers, between 2015 and 2017, anglers helped us fin-clip and stock 30,000 yearling brown trout in the Upper Goulburn and Howqua Rivers. Over this period, we surveyed 22 kilometres of electrofishing in both rivers to find only 17 stocked trout. These results reflect other similar returns from stocking both in Victoria and overseas. Over the last decade, based on poor returns, most fishery agencies have moved away from stocking trout in rivers to improve the wild trout fishery.



▲ Wild trout anglers' fin-clipped 30,000 trout that were released into the Upper Goulburn and Howqua Rivers, just 17 of the released fish were accounted for. Image credit: John Douglas, Victorian Fisheries Authority.

MYTH 3 – WILD TROUT ARE OVERFISHED

In 2015, our researchers surveyed 1,401 campers in the upper Goulburn River Basin and found that a total of 25 trout were caught, of which only 8 fish were kept, meaning 68% of caught trout were released. This survey was repeated in 2017 and found similar results – 1,428 campers were interviewed, 30 trout caught, of which 5 fish were retained, meaning 83% of caught trout were released. These results suggest that while visitation to wild trout fishery streams can be high at popular locations, only few visitors are catching trout, and those who do are typically releasing them, with only a small number being harvested.

In a second test of fishing pressure on our wild trout streams, our researchers electro-fished, tagged and released 82 catchable brown trout (>25cm) in the Howqua River. The trout were implanted with high value reward tags of \$100, meaning the angler who successfully catches the tagged trout and reports the fish by calling the number on the tag received a \$100 reward. Over the next year, only 3 of the 82 tagged brown trout were caught – meaning fishing harvest pressure on the trout population was very low at around 4%.

Thirdly, our Fisheries Compliance Officers interviewed 4,300 trout fishers between 2012-2015 and, the number of over bagging offences totalled 9. Compliance rates of trout fishers is very high.

Based on compliance, tag reporting and angler surveys, the evidence strongly suggests harvest rates of trout is particularly low. Across the board, there is no evidence that wild trout fisheries are being overharvested.

▼ Based on surveys, tag returns and compliance monitoring, fishing pressure is low on Victorian wild trout. Image credit: David Anderson/ Twigwater.com





MYTH 4 – MINIMUM SIZES LIMITS WILL IMPROVE THE WILD TROUT FISHERY

In Victoria, we have a complex mix of wild trout fishing regulations including; closed seasons, total fishing closures, bag limits of 5 fish / day with no more than two over 35 cm (most rivers), minimum size limits of 25 cm and bag limits of 3 fish /day in four premier rivers.

Minimum size limits only have a meaningful benefit to the trout population and fishery (preventing overharvest and sharing the catch) if fishing pressure is high. Considering fishing pressure is low on wild trout in Victoria, the introduction of minimum size limits will have no real benefit to the population or fishery.

While some popular fishing spots may experience local increases in fishing pressure, there are many thousands of kilometres of streams through Victoria's highlands which receive very little fishing attention. Some anglers argue, there should be a minimum size limit on wild trout as a mark of respect or to acknowledge the value of trout as an important fishery - this is a social argument and is not supported by any evidence that it will improve the fishery.

If (for example) the current 25 cm size limit of four trout rivers was extended to all wild trout rivers in Victoria, our data shows only 30% of trout in these waters would achieve this minimum size. This would also concentrate harvest on those larger fish. For many people, as fewer trout will reach the minimum size limit, this scenario would effectively create a catch and release fishery. While this may be desirable to some avid trout fishers, it is likely to demotivate others (such as casual anglers) who value the opportunity to harvest a fish to share with their family or friends. Measures such as this that reduce fishing participation are inconsistent with the Victorian Government's Target One Million plan that aims to get more people fishing more often.

of age and spend a lot of time occupying a single snag. As a result, they are vulnerable to over-fishing. In 2013, research showed harvest rates for Murray cod were extremely high, a lot higher than the fishing pressure on trout. Minimum and maximum size limits for Murray cod are designed to maximise breeding and population recovery. In fact, a combined team of Australian and international researchers found that a slot limit would best manage the Murray cod fishery, providing effective protection to breeding stock, whilst allowing some harvest. In contrast, to Murray cod, wild trout are relatively fast growing and short lived (typically <10 years), they breed effectively and have low fishing pressure. A one-size-fits all approach to setting size limits across different fisheries makes no sense.

MYTH 6 – MOST TROUT FISHER WANT CHANGES THAT REDUCE HARVESTING OF TROUT.

The VFA manage sustainable recreational fisheries for future generations of all ages, genders and interests. In 2018, a recreational fishing licence survey told us 67.3 % of recreational fishers felt the trout bag limits were about right. A further 10.5% suggested that the bag limit should be increased and, less than 5% suggested trout bag limits were too high. A 2018 VRFish survey of trout fishers showed around 45% of trout fishers say trout fishing for food is important (31% somewhat important and 14% very important).

As the introduction of a blanket minimum size trout e.g. 25 cm would significantly reduce harvest rates (see myth 4), we are concerned this would demotivate trout fishers and reduce their fishing interest and fishing participation.

LOOKING FORWARD

There are many passionate trout fishers who are concerned about the future of Victoria's wild trout fishery given climate change



▲ Wild trout provide a unique fishery in Victoria and require different management strategies compared to other fisheries. Image credit: Philip Weigall, Flystream.com

and are calling for changes in regulations to better protect and “value” trout stocks.

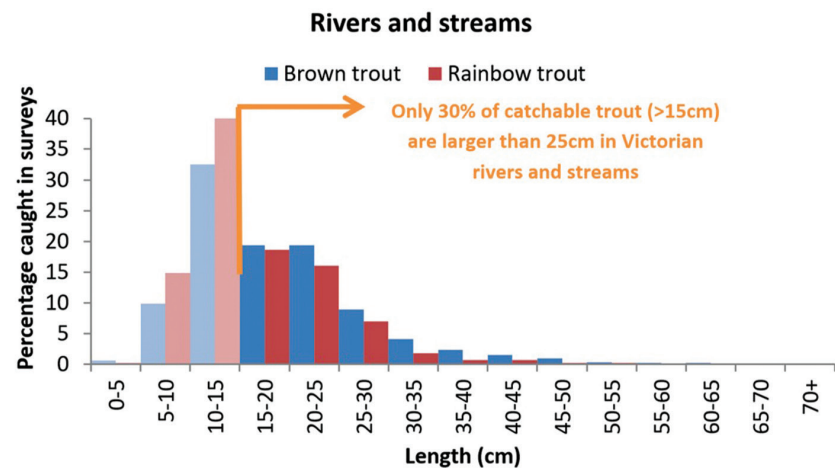
We have unprecedented support from the State Government to maintain and improve recreational fishing. We are investing more than ever to work with trout fishers to track the performance of trout fisheries and, using an evidence-based approach to focus on the things we can change that will make a difference. In the process, we are dispelling myths and moving forward with strategies that make a difference.

There are many VFA staff and advisers who are very keen trout fishers, and who are always looking at the latest trout population data. If at some point in the future, solid new information suggests wild trout harvest regulations might need review, we'll be straight onto it.

We're confident, the Victorian wild trout fishery will continue to thrive, particularly, if we work together, look after our rivers and, use evidence to guide our thinking. Trout are resilient and will bounce back time and time again. The take home message is, the performance of our wild trout fisheries is overwhelmingly dictated by external factors (climate & river health) and not the effects of fishing. To that end our best approach is work together to restore streamside vegetation to increase shading and restore fish habitat.

The Australian Trout Foundation (ATF) have embraced the Wild Trout Fisheries Management Program and are acting on its key findings. They are driving volunteer efforts to improve trout river health through streamside shading and installing fish habitat at every opportunity. The VFA are supporting these efforts in collaboration with Catchment Management Authorities. The VFA are also partnered with the ATF who are driving the preparation of a Wild Trout Fishing Strategy. This plan will build on the work done to date and focus on the things that will make a real difference to the wild trout fishery. 🐟

Anthony Forster and Taylor Hunt are Freshwater Fisheries Managers with the Victorian Fisheries Authority. Anthony and Taylor have led a number of key initiatives to improve recreational fishing in Victoria including: The Wild Trout Fisheries Management Program, Lake Eildon Million Murray cod stocking, restoring trophy Chinook salmon at the Crater Lakes, creation of inland estuary perch fisheries and expansion of Gippsland Bass fisheries. Anthony and Taylor are both passionate recreational fishers who love fishing for a wide variety of species including brown trout, Murray cod, estuary perch and many others.



▲ In Victorian rivers and streams (excluding tailrace rivers), most trout are between 10-15cm in length, and only 30% of catchable trout (>15cm) are over 25cm in length (n = 11,296 trout records from wild trout electrofishing surveys). Image Credit: Taylor Hunt, Victorian Fisheries Authority

MYTH 5 – IF SIZE LIMITS WORK FOR MURRAY COD, THEY WILL WORK FOR TROUT.

Murray cod are a threatened native species and their breeding continues to be impacted by changes to water management. They grow to over 1 metre, live to around 50 years

predictions and, the still raw experience of poor fishing during the unprecedented hot summer of 2013/14. Others are more philosophical, accepting trout fishing has always been average in the lower reaches during summer and, they will fish higher up in the river. Some are blaming overharvest

