CONSERVATION

Catch & Release Part 1

We put them back with the best of intentions, but do they survive? Thankfully, NSW DPI's data shows very promising results.

MANY HAPPY RETURNS!

In the first part of a double-header on catch and release, **Steve Starling** offers the non-scientific views of an informed and experienced layman on how to make catch and release work.

Catch and release is a strong and growing trend amongst recreational anglers in this country. When I began fishing in the mid-1960s, it was rare to see an Aussie angler voluntarily let go a fish that he or she could legally have kept. Today, it's relatively common practice, particularly amongst freshwater fishers. But debate continues on the genuine merits and effectiveness of catch and release. Do the fish we return to the water really survive, or does the trauma and stress of capture mean that most of them turn their fins up within a few hours, days or weeks? And will released fish go on to keep growing normally, possibly reproduce, and even be caught again—perhaps multiple times? It seems that everyone has an opinion on this important issue, but there's been precious little serious, scientific research into the subject in years gone by. Thankfully, all that is changing.

A few pages further on in this issue of Freshwater Fishing Australia, you can read an excellent piece co-authored by Karina Hall, Matt Broadhurst, Paul Butcher, Craig Brand and Shane McGrath of NSW DPI (Department of Primary Industry). This feature is based on statistical data generated by an ongoing research program the group are conducting to study the survival rates of line-caught freshwater natives, including Australian bass, golden perch and Murray cod. Their article makes fascinating reading, and I strongly suggest that every freshwater angler take the time to study it. Apart from anything else, it'll make you a much better-informed participant in the perennial debate about released fish survival rates next time this particular chestnut comes up at the boat ramp, pub bar or club meeting!

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FWF RESEARCH GOALS

The aims and objectives of NSW DPI's ongoing research program into mortality rates amongst line-caught fish were described in the group's own non-technical summary as: 'Quantifying and improving the survival of Murray cod, golden perch and Australian bass released by anglers in NSW.' In other words, finding out how many released fish really do survive, and then making some informed suggestions on how anglers can easily improve these survival rates.

The project makes use of organised catch and release events throughout NSW to study the post-release survival of Murray cod, golden perch and Australian bass, and to examine the effectiveness of simple modifications to existing tackle and handling methods that can maximise the survival of released fish.

If you are approached by DPI researchers at one of these events and asked to help, please do your best to co-operate, as the data generated is extremely important to the future of our sport.

NSW DPI's research team hard at work on the shores of Lake Windamere, in central western NSW.

The author with a big golden perch destined for release... Will it survive?

Good news

Those of us who practise catch and release on a reasonably regular basis would obviously like to think that the fish we return to the water have a very good chance of surviving, and I've long believed this to be the case—especially if they're handled carefully and kept out of the water for the shortest possible time. My gut feeling has always been that by far the majority of these fish will indeed live to fight another day, and I'm pleased to report that NSW DPI's findings strongly support my hunch. In fact, survival rates for lure-caught fish, especially during the cooler parts of the year, are even higher than I'd dared to hope or suggest, as you'll discover when you read the following article. It really is very good news.

I was fortunate enough to be at Lake Windamere this past spring, competing in an invitational catch and release event that was used by the DPI team as part of their research project. I even managed to catch a couple of the golden perch that were held in floating cages for several days after capture to assess survival. No one was happier than me to learn that this tournament (which I kicked off over 12 years ago) returned a 100 per cent survival rate for lure-caught golden perch after five days in these cages! I was also greatly impressed by the enthusiasm and dedication of the DPI research team who attended the event. It was clear that they were passionate about their work, and I reckon this project is one of the better things I've seen my fishing licence fees spent on!

In the past, few Australian studies have examined this issue of line-caught survival specifically for native freshwater fish. Work done with saltwater species has shown that many factors contribute to the short-term mortality of released, line-caught

Dr Karina Hall collecting data on line-caught golden perch at Lake Windamere during last year's Golden Classic.

FWF 10 GOLDEN RELEASE RULES

Here are Starlo's 10 golden rules for optimising the survival of released fish;

1 Where possible, use artificial lures or flies rather than natural baits, and consider partially or completely flattening barbs, especially on treble hooks.

2 Use line and tackle of a sensible strength in order to keep fight times reasonably short, thereby reducing stress on hooked fish and minimising bust-offs.

3 If netting fish, ALWAYS use a knot-less net such as the Aussie-designed Environet, and keep the fish in the water, in this net while unhooking it.

4 Thoroughly wet your hands before touching any fish, and avoid direct contact with delicate organs such as eyes and gill membranes… Minimise handling!

5 If lifting a fish for a quick photograph or to measure it, use wet hands and support the fish's body with a flat hand placed under its belly or flank.

6 NEVER hang a fish by its jaw, tail or gill cover! Support the fish's body weight at all times. If weighing your catch, weigh it in a knot-less net, then subtract the net's mass.

7 If a fish has deeply swallowed the hook, DO NOT attempt to remove it! Simply cut the line or leader as close as possible to the fish's mouth and set it free.

8 Minimise a fish's time out of the water, especially on hot, dry days. As a rule of thumb, don't keep a fish out of water any longer than you could hold your own breath!

9 Don't keep fish in live wells or containers unless absolutely necessary and, if using a live well, ensure the water is completely re-circulated or replaced every 20 minutes or so.

10 When returning a fish to the water, do so near weedbeds or snags, and hold the fish upright in the water, facing into any current for a few seconds prior to its release.

fish, but that in most cases, survival rates can be improved via subtle modifications to the gear used and the handling methods employed.

Anatomical hook location (in the mouth versus swallowed) has been identified as a strong predictor of mortality in yellowfin bream and mulloway, especially if ingested hooks were removed. Simply cutting the line and releasing hook-ingested fish increased their rates of survival from less than 20 per cent to more than 80 per cent! Incredibly, 76 per cent of yellowfin bream that had swallowed hooks in one particular study subsequently 'passed' these hooks, with no apparent ill effects! There's a clear message in that for bait fishers, in particular—digging for deeply-ingested hooks is not a good idea!

Lure fishers rarely face this dilemma. Therefore, I guess it's not so surprising when events like the Lake Windamere Golden Classic (which is fly and lure only) receive such a positive report card from the scientists. However, get just a couple of things wrong and survival rates can begin to slide.

Problem areas

Two factors that appear to increase mortality rates amongst released freshwater natives are high temperatures (water and air) and increased depth. Fish pulled from much more than six or seven metres below the surface can suffer what the boffins call 'barotrauma'. This results from the expansion of compressed gasses in their blood and internal organs, and is not unlike the 'bends' suffered by SCUBA divers. High temperatures can exacerbate these and other stresses. Bearing these factors in mind, it seems smart to avoid scheduling catch and release angling events during the hottest parts of the year, or in times and places where fish are likely to be targeted while holding in deeper water.

If you do catch fish intended for release from very warm water and on especially hot days, or hook them at depths greater than six metres, the key seems to be minimising their time out of the water and setting them free as quickly as possible, rather than holding them in live wells and the like. Some tournament anglers, in particular, seem to have a very gung-ho attitude towards 'venting' or 'needling' fish with a hypodermic syringe to release gas pressure in their swim bladder before releasing them. But until some specific research has been done into the effectiveness of this technique on our freshwater natives, I remain more than a little sceptical. I'd much rather see these fish released immediately, with the help of a weighted 'drop line' to get them back down to the level where they were hooked, if necessary. Hopefully, the NSW DPI team may have a chance to look at this complex issue in coming years, too.

Overall, however, the feedback from this valuable research program has been incredibly positive, and should give anglers valuable ammunition for defending the sustainability of their actions and activities. It also provides lots of important information for event organisers to consider when planning catch and release competitions. I take my hat off to the hard working NSW DPI research team who did this great work, and strongly commend you to read all about it!

Roger Apperley with a thumping big golden perch. Anglers would like to think that these fish have a high chance of survival after release.