

# ARE BARBLESS HOOKS REALLY BETTER?

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We humans have invented some pretty nifty stuff over the years, but there are few inventions which rival the humble fish hook for sheer simplicity, effectiveness and benefit to humanity.

Historical evidence suggests that we didn't sit around too long before coming up with the idea, either. Scientists from the Australian National University recently found what they believe was the earliest example of a fish hook in East Timor, fashioned out of a trochus shell, and dated at between 16,000 and 23,000 years old.

Archeologists suggest that the inclusion of a barb in fish hook design may have been a bit of an afterthought borrowed from the design of a spearhead, which like many things, was probably originally pinched from mother nature's sketchbook (anyone who has ever had to handle a stingray would recognise the likely source for the plagiarism). It has certainly been an enduring feature of hook design since then.

Fishers have been debating the impact of hook barbs on fish health and survival, and angler catch rates for a number of years now. There are generally three points of view in the debate (there's a bad pun about treble hooks in there somewhere): some believe that barbless hooks are better for fish survival, and make no difference to catch rates, and use them exclusively. Others are concerned that they suffer lower catch rates when using

barbless hooks and so only use barbed hooks. And there are those who fish with barbless hooks for certain applications, and barbed hooks for others. So which of these viewpoints are correct? Do barbless hooks result in better survival of released fish? And are catch rates the same between barbed and barbless hooks? Recfishing Research looked into these questions to see what the science says.

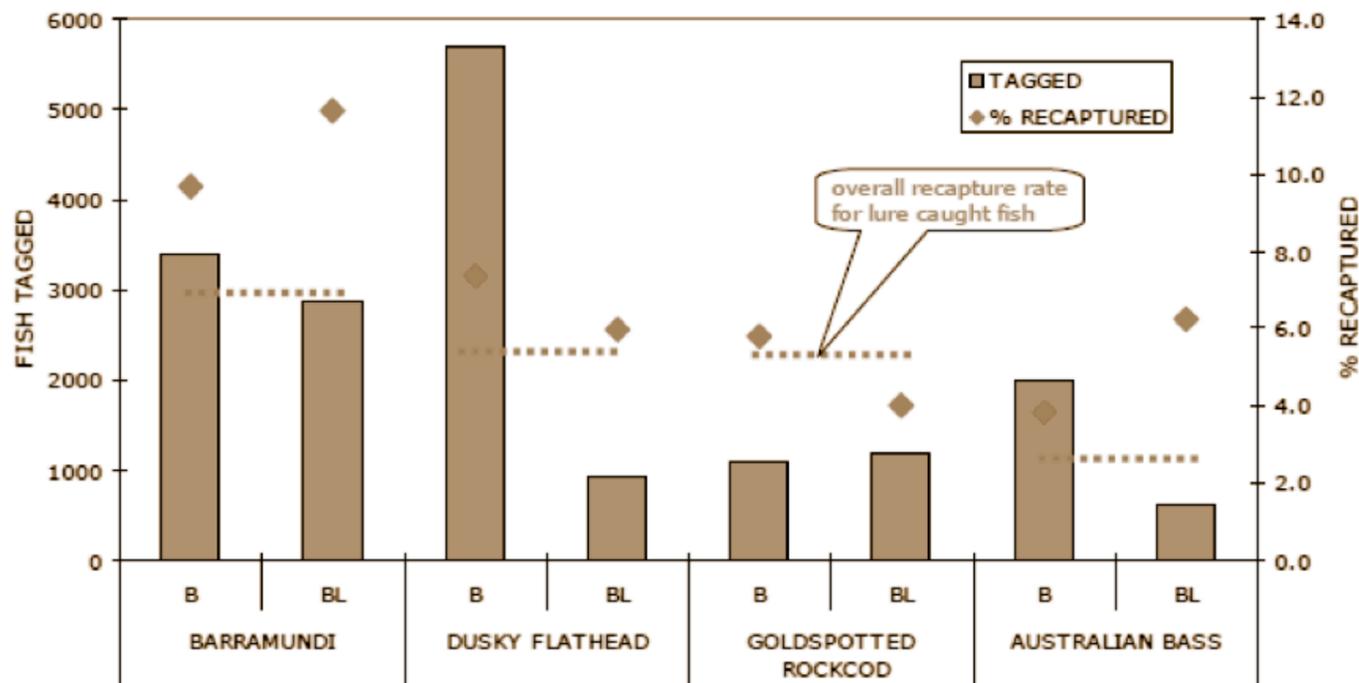


# IMPACTS ON FISH SURVIVAL

Well, to bring a fine point to it (sorry), the science on barbed vs. barbless hooks is not conclusive one way or the other, and appears to be influenced strongly by the species involved. The Suntag database (one of the world's largest fish tagging databases compiled by Australian recreational fishers) provides some interesting initial insights. The graph below summarises 17,817 catch records for four fish species (Barramundi, Dusky Flathead, Gold Spot Rock Cod and Australian Bass). Recapture rates among Barramundi and Australian Bass caught

and released using barbless hooks appear higher than recapture rates when caught using barbed hooks, suggesting barbless hooks may slightly improve survival of these species. Conversely, recapture rates among Dusky Flathead and Goldspotted Cod were higher among fish caught and released using barbed hooks, possibly suggesting barbless hooks may not help increase survival of these two species. It should be noted that the results discussed above had not been tested for statistical significance, and so further work is required to confirm these trends.

Recapture rates of fish caught and tagged using barbed or barbless lures.



# IMPACTS ON FISH HANDLING TIME

It can be difficult to study fish survival directly, and so researchers often measure other things which might give an indication of likely survival. For example, the length of time it takes to handle a fish before release, how much injury a fish sustains before release, or how long it takes a fish to shed a hook after release are all often examined as these factors have been shown to impact on a

fish's chances of survival. A number of studies in Australia and overseas have reported that fish handling time is reduced when using barbless hooks, however several of these have also reported that catch rates can be lower when using barbless hooks compared to barbed hooks as well (up to 20% lower in some reported examples).

# SUMMARY

To bring the point home (couldn't help it), the information available on whether barbless hooks reduce fish injury, increase survival in released fish, or impact on angler catch rates suggest that barbless hooks may be better for some fish species in some situations, but perhaps not across the board. However, an equally relevant part of the discussion is the impact of barbless hooks on hook retention in anglers! A colleague Bill Sawynok probably summed it up best:

"I'm gonna keep using barbless hooks no matter what. With the number of times I put a hook in one part of me or other in a year it's not so much a fish welfare issue, it's a ME welfare issue"

It's also important that we consider public perception in weighing up the pros and cons of the barb. Regardless what the science says, the general public perceive barbless hooks as being a better, more sustainable option. Consequently their use can help to demonstrate that Australia's recreational fishers treat for our fish resources with care.

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The role that barbless hooks can play in helping fish to easily expel hooks after capture appears to differ between species as well. A study examining the effect of fish hook type and location on catch rate and survival of bonefish in the Bahamas (hands up who wants that job!) found that barbless hooks were able to be discarded 3.9 times faster when located deep in the mouth compared to barbed hooks, but there was no difference in expulsion rates among barbed and barbless hooks in shallow hooked fish. Another international study found that brook trout were able to get rid of deeply hooked barbed and barbless hooks at about the same rate.

A number of studies have shown that use of barbless hooks can reduce the rate of injury and bleeding in different species, however one study looking at tailor actually found that both barbed and barbless single hooks were more likely to result in gill injury compared to treble and ganged hooks, though fewer fish died using these hook types.



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