

# Stillwater barbel

## Facts, figures & theories

Opposition to the stocking of barbel into stillwaters has been one of the cornerstones of BS policy since the Society was formed.

Although the initial rounds of the fight against stockings were focussed on the introduction of fish that were illegally taken and transferred from the wild, the Society has maintained a firm stance against the practice, even when sanctioned by the EA.

Debate has raged for the last decade or so on whether the barbel as a species is suited to a stillwater existence, both on purely

scientific grounds and on a moral/ethical standpoint. The BS policy uses both arguments to support its objections to putting barbel in ponds and lakes, and I personally remain convinced that on both counts, the practice should be stopped. I think that the vast majority of BS members are of the same mind, and like them, I was eager to see the results of the recent EA survey into the growth performance of stillwater

barbel compared to rivers.

The initial press release rather undersold the conclusions from the survey, simply announcing that the EA would be amending existing policy guidelines as issued to its regional officers.

At first sight, this may seem rather disappointing, but is in fact a significant hardening of policy, in my view.

It would have been a lot to expect for the Agency to suddenly reverse a decision that had been abided by for many years; little less than political suicide, and I was not surprised to see that stockings would still be allowed, on paper at least. The criteria that underpin the guidelines for allowing consent have been changed, and in a way that would make future consents much

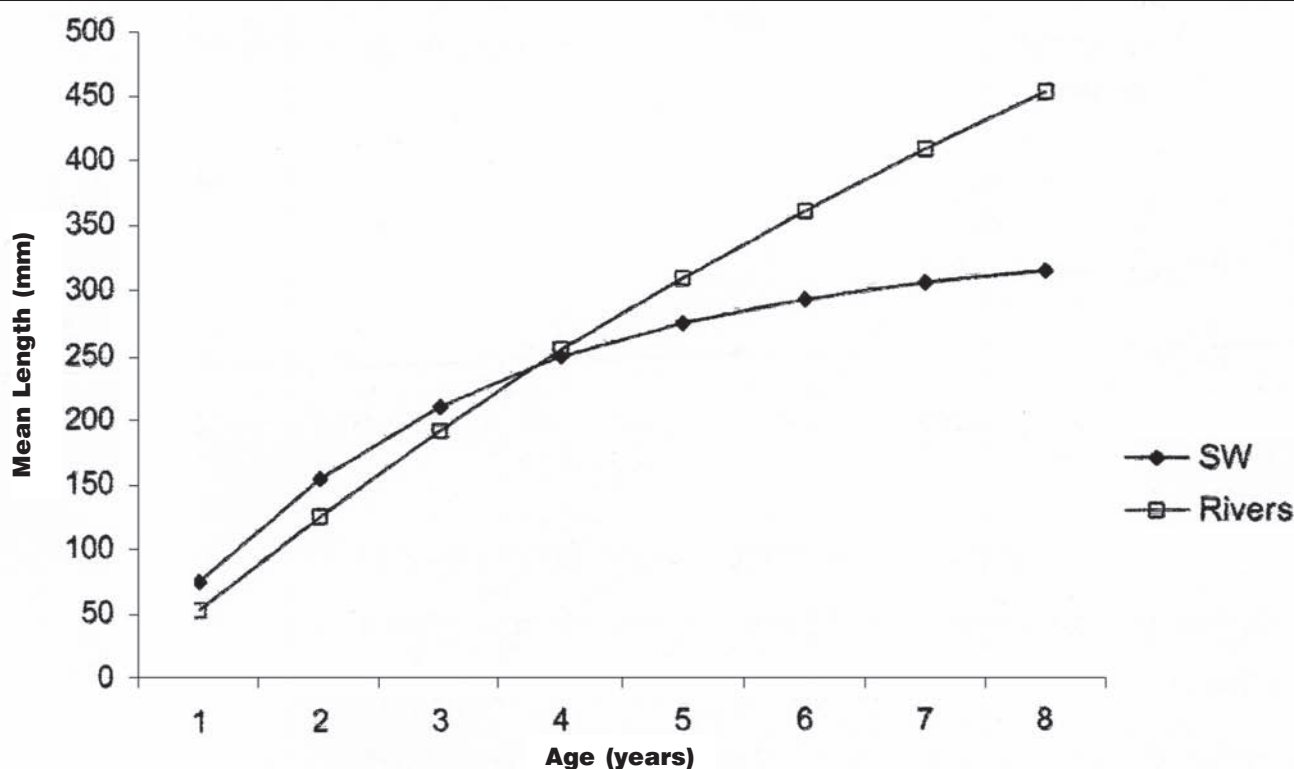
less likely. The original criteria were as follows;

“Wild caught river fish should not be used to stock stillwaters. Stocks should be obtained from a fish farm or existing stillwater population”

“The nature of the receiving waterbody must be suitable for the fish to thrive in terms of feeding, growth, health and condition. It is not necessary for the fish to be able to breed”

“The application should be supported by appropriate water quality information”

Now the second of the above criteria we continue to dispute strongly, because the Society view is that the word “thrive” includes the capacity for breeding. The lack of clarity in the EA’s own guidelines on this matter is also to be considered here,



Von Bertalanffy mean growth curves derived from pooled river data and from pooled stillwater data (to age 8 only)



## *Stillwater Barbel – Facts, Figures & Theories By Pete Reading*

and it could be argued that there are species of fish that can appear to be quite happy to survive long-term in stillwaters without reproducing, such as carp and brown trout, but they are exceptions, and not fair comparisons to make with barbel, I feel.

The recent report has led the EA to amend their final criterion quite substantially, and if applied correctly, I think it would supersede judgements on the preceding one. The replacement criterion reads: “Barbel should not be stocked into stillwaters that have; An enhanced stock density, A predominance of carp, A history of mortalities”

The guidelines now require a judgement of fishery type, and it is to be hoped that the regional fishery officers are going to be briefed a little more carefully on these guidelines. The report actually states that “current EA guidance on the stocking of barbel into stillwaters does not give a precise definition of the term thrive, and is therefore difficult to apply”

Now, my view is that if properly and rigorously applied, the stocking of barbel into stillwaters will be

a fairly brief resume of the study and its findings, and try to be as objective as possible. The view of a BS officer opposed to stillwater barbel stocking is bound to be a little biased, but I will try and give you as much in the way of direct quotes as possible.

The report is a bulky document, over 300 pages of text, facts and figures, but I am of a scientific background, and although my degree is in Environmental Chemistry, my understanding of the report should not be easy to challenge, I hope. Keith Arthur bases his opinions on stillwater barbel on his experience of ONE fishery, and nothing but silly subjective spoutings that typify his rather irresponsible attitude to angling matters generally. He has stated that he disagrees with Ayesha Taylor, the scientist responsible for the EA report on this ludicrous basis. Enough about him for now, let us look at some hard facts, figures and intelligent logic instead. Ayesha used a huge amount of data, from over 50 waters in total, and gathered over several years.

The abstract at the start

variety of other statements throughout the report that are open to further interpretation. The growth was measured in terms of length, and rate of growth was back-calculated using scale readings from all the barbel sampled. The mathematics of this is complicated, but a tried and tested method.

Calculations about condition, which takes into account the relationship between length and mass of fish, was more difficult to be sure about. The condition factor was not used in the final conclusions, since it varies with individual fish, age, sex and maturity of fish, and with seasons. Observations on condition are made later.

As I read through the report, I highlighted the sentences that made most sense and had most impact, and I can honestly say that the statements supporting our view on stillwater barbel stockings were ten times more common than those that could be used in favour of the practice.

It may be best to run through them, and add my comments at each stage. The report has seven sections that follow the abstract, but I

millions of years of opportunity, made a go of living in lakes, unlike roach, pike, bream, perch, carp and other species that are naturally found in both still and moving water. This observation adds considerable weight to the theory that barbel will never thrive or even survive long-term in stillwaters, and to put them in is an UNNATURAL practice.

Non- indigenous carp and genetically engineered trout are not, in my view, to be used as a comparison for long-term survival or non-breeding thriving populations. If barbel were ever going to thrive in stillwaters, they would have done it by now. Chub can grow quite big in a land-locked situation, but they eventually disappear, and I personally do not favour their introduction to lakes. The Chub Study Group can deal with that issue!

P30 “It was noted by the team that sampled SW13 that although stocked 3 years before, no barbel were believed to be present in this fishery”

P88 “ Numerous fishery managers discouraged sampling because stocked barbel were rarely or never caught by anglers. This suggests that the species does not survive in all stillwaters”

P105 “The problems encountered in capturing barbel for this study suggested that, more often than not, the species had been stocked but is seldom or ever caught by anglers”

Now these extracts are very telling, and clearly the number of stillwaters that could be used in the study was limited by virtue of the fact that the stocked barbel had all withered way and died! The growth data from these waters was not available for the study, obviously, and would certainly have affected the results in our favour!

### **“The statements supporting our view on stillwater barbel stockings were ten times more common than those that could be used in favour of the practice”**

dramatically reduced, and the pressure we have maintained will have borne fruit. The problem will be in maintaining that pressure, and educating anglers and fishery owners about the bad practice of stocking barbel in lakes. We have won a major battle, but the war is not yet over, and will take some time.

So, you may ask, what did this latest report actually say, and how were the conclusions reached?

I can attempt to give you

of the report is the brief precis of the findings, and states that data from over 30 rivers and ten representative stillwaters was used to confirm that;

“Analysis of growth increments indicated that barbel growth was depressed in all but two of the sampled stillwaters, relative to representative rivers...”

There is no arguing with the fact that the rivers were superior habitat in terms of growth compared to stillwaters, and there are a

will just make reference to page numbers for simplicity. The pages and pages of data and graphs will be quite indigestible to most, but back up the comprehensive and scientific validity of the report.

P2 “In fact, the EA does not consider the barbel to be a natural inhabitant of stillwaters”

A good point to open with. Along with chub, dace, grayling, salmon and many trout sub-species, the barbel has never naturally, given





SW13 was stillwater 13, and like most, the location was kept anonymous. SW16 was actually identified as Trimpley Reservoir, a venue often quoted as a stillwater where barbel appeared to flourish in the long -term. It was interesting that in five days of sampling, only one small sick barbel was caught from Trimpley and the local anglers confirmed that very few barbel are now caught there. The flushes of small barbel that were sucked into Trimpley from the adjoining Severn for thirty years or more have clearly failed to colonise the reservoir. The evidence for barbel failing in stillwaters, apart from reduced growth rates, continues to be substantial.

P30 "SW1 and SW11 suffered mass mortalities of barbel during the course of the study"

This fact is of great interest. The death of barbel in stillwaters is not likely to be advertised by fishery owners, and it is very significant that two out of the seventeen stillwaters studied suffered in this way, in such a short timescale, and only ten yielded barbel in sufficient numbers to be used for the analysis.

With global warming likely to provide us with hotter and hotter summers, the fate of barbel in lakes is going to be very uncertain in the future. The argument used that barbel in artificially aerated ponds are better cared for than their riverine brethren is one that a certain foolish twerp used on an internet forum recently.

What a joke! The fact that you have to aerate artificially indicates that your pond is unsuitable for the level of fish stocks and/or the species in your lake in the first place! To use it as an argument in favour of stocking barbel into such lakes is laughable.

It is very likely that there are a great many fisheries

out there that have stocked and advertised barbel as a ploy to draw in custom, but the fish have died or are in the inevitable process of declining away.

P100 "It is plausible that the critical oxygen concentration below which the growth rate of barbel declines is often breached in stillwaters"

Why barbel died in the

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## "With global warming likely to provide us with hotter and hotter summers, the fate of barbel in lakes is going to be very uncertain in the future"

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stillwaters studied, and indeed others not studied, is not clear, but deoxygenation is a prime suspect. The effect of low oxygen levels and high temperatures are likely to make the fish more prone to infection and disease also. I would actually have expected a warmer environment to have promoted faster growth, and would not be surprised to see fatter barbel in lakes than rivers. It could be that the factors of stress and competition actually outweigh the advantages of a warmer water temperature, along with the reduced oxygen concentrations that this brings.

The needs of any fish in terms of an ideal environment are complex, both for thriving and breeding, but the wealth of evidence and comments from fishery scientists within the body of this report make our arguments against barbel in lakes even stronger.

P98 "It appears that conditions in rivers are generally more favourable for barbel than heavily stocked stillwaters, providing sufficient energy to maintain good growth as well as for active swimming in the flowing water"

I have always wondered how barbel cope with a lack of current. They are probably quite a dense fish, by which I mean they are adapted to

sink and sit on the bottom, using their body shape and fins to maintain position and depth.

In a lake, do they tend to sit on the bottom when not actively swimming, and therefore need to use more energy in still water rather than moving water, in the way that some sharks and catfish do? I have not observed barbel in tanks or

pools, but it could be that they do find still water quite a stressful environment, and actually need to work hard to move around. This may account for reduced growth in an environment where it could be expected to be enhanced.

Look at a kestrel in a breeze, hovering almost effortlessly as it rides the wind. On a still day, the same bird will use a great deal of energy flapping its wings to maintain station?

P104 "It is feasible that relatively sedentary barbel may accumulate fatty deposits within the tissues"

A barbel in a commercial fishery may be expected to be bombarded with baits of a high nutritive value, including trout pellets. The discussion about condition in the report suggested that a lake barbel could actually seem to grow quite well, but the mass of the fish is likely to be made up of an unusual amount of fat within the tissues, rather than swimming muscle. This could also occur in well fed river barbel, but I think it much less likely. For reasons mentioned earlier, the factor of condition, the relationship between length and mass, was not used to make comparisons in the study.

P113 "Prolific catches are not necessarily an indicator that barbel are thriving"

P105 "Even at stillwaters where barbel catches were high, growth was depressed to markedly below natural rates"

"Barbel were probably being subjected to a range of environmental stresses which resulted in reduced growth and a smaller ultimate size"

It is not uncommon for those who support stockings

of Stillwater barbel to refer to big bags of barbel to rod and line as evidence that the fish are doing well. The study suggests quite the reverse.

The shoals of starving barbel that fall so readily to hook baits are likely to be barbel suffering from stress and reduced growth rates support this. It would be interesting to see if the catch rates at such fisheries are sustained and the barbel either to continue to grow, or will gradually decline in condition and numbers.

This is where further research could be focussed.

P45 "Maximum age in stillwaters was 8 years. In rivers sampled, it was 19 years"

It was not clear from the report how long the barbel had been present in any of the fisheries, and it could be that there are some longer living lake barbel out there. Again, this could be a focus for further research, but it seems that there are considerable inconsistencies in stocking records.

However, the evidence suggests that barbel are much more short-lived in lakes compared to rivers.

P44 "Although cultured barbel were somewhat larger than the wild fish in the first couple of years, after stocking into stillwaters growth of these barbel fell off, where river barbel

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continued to grow steadily beyond age 8"

P108 "Hence on average, Stillwater barbel were increasing in length by 23% less per year than river barbel"

P73 "the majority of stillwaters sampled exhibited significantly slower growth"

"overall, barbel growth in rivers was significantly higher than in stillwaters"

It is very clear that barbel do better in rivers rather than lakes, and although there were two stillwaters where the barbel could be judged to be thriving in terms of growth, according to statistical modelling utilised in the report. The high growth rates in the early years for stillwater barbel are explained by the fact that they were being fed in stews at the fish farm at that time. Once in the lakes, their growth rate fell off drastically.

The graph clearly shows this, but does not continue

beyond age 8 because no barbel older than that were found in the stillwaters. The majority of stillwaters in the study were still showing poorer growth, and if we were to extrapolate this to all stillwaters containing barbel, the future for those unfortunate fish looks uncertain. It is not just a case of simple fishery management, however, although it is clear that barbel will not compete well with carp or in fisheries with a high stock density.

It remains to be seen how carefully the EA applies the new criteria in the coming year. There is a clear need for more consistency in how consents are issued, since the report highlights significant variation in how easy it has been to get consent in the past. We should see the end of stocking of barbel into overstocked carp lakes, and much more detailed and careful consideration being used before stocking

consents are issued.

The number of lakes deemed suitable for stockings must surely be very small, since a commercial fishery or indeed most club fisheries demand a high stocking level in order to satisfy their customers.

I am supposed to be meeting with EA fishery officers shortly to discuss the report and its findings in more detail, and to see how the Society can help with further research.

The great experiment on stillwater barbel that some have called for in the past has actually been going on for some time, and I for one am convinced that the scientific evidence firmly supports our policy of opposing barbel stocking in ponds and lakes. The moral/ethical argument is equally strong, however, and we all have a duty to clearly and calmly share this view with others, if we agree with it of course!

Some BS members have no view on this issue, or actually support barbel stocking in stillwaters. Some are neutral about the Close Season, or really want to fish all year round. They join the Society for other reasons, and it is quite acceptable for that situation to continue. It is not necessary to agree with the detail of our current policy to be a member, and it is quite OK not to join if there is strong disagreement.

However, I think I can speak for the entire Committee in saying that we will continue to press for a cessation of stillwater stocking, as well as for more work on improving riverine habitats.

The EA will continue to receive our support where we think they are right, and they are most of the time.

Where we think they are not, we will try and influence them with the logic of our argument!

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