



**Virtual Fisheries Forum 28/10/2021 - Environment Agency
Calverton Fish Farm**

Q&A session with Richard Pitman

Q. We occasionally receive a stocking of Roach from the Environment Agency on our section of the River Lea Navigation which is generally 1000 or so immature fingerling size fish. We appreciate the free stockings but do think that due to the small size of fish stocked the survival will be very fractional. Would it not be better to stock in less frequently but with bigger more mature fish which are able to spawn?

A. (Richard Pitman) Our farm is only 18 acres in size so there is limited space to grow fish and whilst we would like to keep fish longer, so they are bigger/more mature we need to strike a balance between freeing up stock ponds and growing on existing stock. As a result, to be able to service the whole of the country we have to stick to moving on fish when they are around 18 months old so that we can begin rearing more stock and meet demand for overall fish numbers needed nationally. I take the point however as obviously bigger fish are more predator proof but farm capacity simply doesn't allow.

Q. Do you suffer any cormorant predation on your stock ponds, and if so how do you combat it?

A. (Richard Pitman) We do suffer predation in various forms on our ponds, but we put in place measures to deter avian predators such as ropes, mannequins, gas guns and round the clock active human presence. We are near the River Trent, so the predators of concern tend to spend most of their time on the river rather than targeting Calverton.

Q. The Environment Agency are in the process of stocking coarse fish into the middle reaches of the River Tame, out of interest what is the process behind collecting broodstock for coarse fish like Roach, Dace Bream Chub and Barbel etc?

A. (Richard Pitman) For most River inhabiting coarse species we generally use the Trent to collect broodstock as it's close to us with extensive spawning grounds suitable for effective collection. For other Stillwater coarse species like Tench, Crucian Carp, Rudd etc we have to branch out and travel further. We do like to mix up exact locations of collection for broodstock collection to increase genetic diversity.

Q. What is the exact process for getting a stocking of Barbel into a river?

A. (Richard Pitman) You need to contact your local fisheries officer for all enquiries regarding stocking a waterway. Calverton fish farm do not have control over where the fish are distributed within area. These decisions are made by Environment Agency fisheries officers.

A. (Alex Clegg) I actually know the River Tame very well and can tell you a good contact for the area is a person called Ian Wood, who is a local Environment Agency Officer in the area. Contact me after the Forum and I'll put you in touch with him.

Q. How long do you keep the eggs & milt away from water after stripping the fish?

A. (Richard Pitman) As short a time as possible. 4-5 minutes maximum for the eggs and 1-2 minutes maximum for fish's milt before water is added otherwise there is a higher risk of reduced fertility. Milt can be treated to keep for days but this is not practiced at Calverton.

Q. Can the fish be dye marked to monitor migration within the waterway they are stocked?

A. (Richard Pitman) Yes, we can do this but the dye mark is only visible for 3 years max. Other methods also exist to mark fish for identification. The River Severn had a recent stocking that were tagged and are currently being monitored. Smaller rivers are best suited to these monitoring programmes, and they rely upon angler catches which are not consistently reported. We have often used these monitoring tactics to observe fish recruitment in some rivers which prior to us stocking them had little natural recruitment. Barbel on the River Don are a good example. It is important to mention that observed boosts in recruitment post stocking are also related to improvements in water quality, habitat restoration etc. The bigger picture is of high importance for healthy fish populations.

Q. Can you advise how an angling club with a newly dug pond can prepare it for stocking fish? I.e. pre stocking protocols which positively impact fish health/growth?

A. (Richard Pitman) Scrape away the topsoil but save it and then dig your pond. Once the pond has been dug, re-apply the saved topsoil to the pond bottom before filling with water. Organic manure application to provide nutrients (Chicken manure is good) and help a pond mature with habitat vegetation.

A. (Alex Clegg) Just to mention we will be running a forum in December which focuses on fisheries management plans, so this may be of interest.

Q. How do you ensure the fish are returned to the river reaches their parents came from?

A. (Richard Pitman) When we spawn fish we don't spawn on the exact amount of larvae needed to fill our pond. There is always surplus left over and the surplus is returned

to where the broodstock came from which mitigates any impact our initial broodstock collection might have had to natural recruitment.

Q. Does harvesting broodstock from rivers & streams ever allow you to identify and monitor pests, fish diseases, plus other matters of concern for biosecurity/fish health in specific catchments/locations?

- A.** (Richard Pitman) We try to avoid coming into contact with problems if at all possible. Basically, if there is a history of issues at a certain venue or a known emergence of a problem in the area (like parasites, viruses, genetic problems within fish etc) we simply won't go there to collect broodstock. We work closely with angling clubs and our Brampton National Fisheries Laboratory to select safe sites. All fish which come into the fish farm have their water tanks treated by Ozone (water treatment process) to ensure maximal biosecurity is maintained.
- A.** (Alex Clegg) We held a related virtual forum with the team from Brampton which you might find of interest. It's available on the Angling Trust website.

Q. Can I ask who actually decides where and what fish are stocked around England? What is the exact chain of consultation/decision making?

- A.** (Richard Pitman) It all starts with your local fisheries officer who will know their geographical area very well. They will make and justify decisions on what waterways are most in need of stocking using fish survey data, anglers catch rates and knowledge of problems like pollution incidents. Once approved by management, the fisheries officer's stock reports and orders end up with us for producing the required fish.

Q. What can I do to increase the natural invertebrate life within my fishery?

- A.** (Richard Pitman) Once a fishery is stocked with fish trying to increase the natural food production is very difficult, because obviously the fish will eat the naturals before they can really accumulate and become more established. Chicken manure is probably the best option or any other method to increase the nutrient level but increasing nutrient levels and triggering an algal bloom is not great when fish are in a waterbody. If you can get an empty lake and trigger an algae bloom, then the invertebrates will feed unhindered on the algae and become more established without a subsequent of causing oxygen issues for fish. Once the algae has been cleared by the invertebrates and good stocks of natural food are subsequently abundant this is the time to introduce your fish. For lakes already with fish you could section off an area with nets for invertebrates to thrive, but it will never be as effective.

Q. My local River Colne is a dying river, how can I get some fish produced by Calverton to help replenish it? I have contacted my local fisheries team but nothing has been actioned yet?

A. (Alex Clegg) I'm afraid you will have to be patient and have faith with your local fisheries team because as we have already discussed they are the focal point for deciding how fish are stocked.

Q. Is there a particular species which is stocked more than others?

A. (Richard Pitman) Roach as they are a species that fit most water types. We receive the highest demand for Roach definitely. Silverfish and Barbel are popular/common, but Roach is easily the number one. There is consistently requests for over 90,000 Roach every year. Unfortunately, we are oversubscribed by at least 30% each year for all fish species overall so we are unable to supply everybody with what they want.

Q. Have you ever looked into breeding Perch and Pike at Calverton?

A. (Richard Pitman) Yes but there is too much risk with escapees getting into other stock ponds and eating the other fish species we produce. Pike/Perch eat each other and other fish which obviously doesn't bode well for fish farming. In the case of Perch there is certainly enough wild populations out there that they could be sourced from a suitable waterway, health checked and delivered straight to another recipient waterway. To a certain degree all fish species are predatory and can eat the fry we are trying to rear on, but certainly Perch and Pike are the riskiest for this matter. Tench are very cannibalistic which you might not expect!

Q. Can you breed Eels at Calverton to help rebuild numbers in our rivers?

A. (Richard Pitman) Eels are something we are not able to breed due to a lack of knowledge even with current research regarding their biological spawning triggers/physiological needs. This is unlikely to be something we could replicate at Calverton but never say never.

Q. When fish are introduced into rivers, presumably you have to look at what are the limits to their migration e.g., weirs, and whether the fish are likely to be washed downstream perhaps to a stretch that is already well stocked?

A. (Richard Pitman) The fisheries officers choose locations that they assess to be safe & suitable for stocking. It is only really in times of high water when fish may be displaced.

Q. Are there any fish that you choose not to breed and why?

A. (Richard Pitman) Carp, Perch, Pike, Eels and Ide. We touched on the Predatory fish issues earlier and Carp fish farms are very common in the UK with private set ups dealing high quality fish already so are not required. Ide are not an indigenous fish species so are not farmed at Calverton. We also do not rear mini species as they have such short lifespans it is not efficient to do so. We base our farming solely around the rivers and natural waterways as opposed to commercial fisheries.

Q. What percentage of the Crucian Carp you stock into a Stillwater would you expect to survive and live to a 'normal' age?

A. (Richard Pitman) That is very difficult to say and depends on the average size of fish stocked. Crucians are prolific spawners so usually are good at keeping their populations topped up once established. We typically stock Crucians into suitable waterways at around 18 months old by which time you would expect them to be a size where at least 60% will grow on to large adult size.

Q. Would you think large stocks of ide would impact the natural spawning success in a mixed fishery?

A. In a mixed fishery they would compete to spawn and take up space within the fisheries biomass. They could potentially outcompete existing species which would impact their abundance over time. I'm not so sure on how Ide specifically interact with other species I'm afraid, but I've outlined the potential risks.

Q. How do you prevent weed growing in your stock ponds as presumably they are quite shallow, and you are fertilising them?

A. When you create a nutrient rich environment, weed growth issues are a concern. For the smaller shallower ponds on site, we can manually control weed by raking them. We do like to leave some weed and natural plant features in our ponds to let the fish become accustomed to things they will encounter in the wild. Interacting with surrounding habitat and development of natural behaviours like finding cover, natural food etc is an important part of the rearing process. In the larger outdoor ponds, we try to create species balances which occupy all levels of the water column which is effective at keeping weed in check. For algae blooms we use barley straw extract and mobile UV treatments.

Q. Where do you get the water from for the stock ponds? Externally or is it treated/recycled?

A. All the water comes from a borehole on site which is connected to an underground aquifer, which is very importantly bio secure. The water comes out of the borehole at 10 degrees Celsius all year round. The water does come out very low in Oxygen, so we take a proportion of the water extracted and super-saturate it with Oxygen before feeding it back into the main extracted supply. Subsequently by the time the water reaches the fish it is sufficiently oxygenated to accommodate large fish biomasses.

Q. Are you restricted to where you can introduce fish into waterways by close vehicle access to potential stocking points?

A. The locations of stocking are assessed and selected by our fisheries officers on the ground, and they will choose the best areas using their local knowledge. Good vehicle access is obviously a big advantage, especially when we have large stockings of fish for a venue. Another point to note is that you don't want to be carrying fish in buckets of non-aerated water a long way as the Oxygen levels will decrease and especially cause stress to the fish.

Q. Does the Environment Agency have any current interest in the rearing and release of Burbot?

A. At the present time no. Burbot have been spawned here at Calverton before in a research project with Nottingham University years ago but there is no intention to pursue this now. I would like to have a go at spawning them personally out of interest but that is where it ends.

Q. Do you aerate your stock ponds all year round?

A. Yes, we do aerate as long as there is fish in them. It simulates flowing water for the river species which is especially important to prepare them for the wild. For Stillwater species rearing ponds we use less aggressive mechanical aeration than we would do for river species as they will not have to be as accustomed to flowing/moving water.

Key contacts from this Fisheries Forum

- Richard Pitman (Environment Agency Calverton Fish Farm Technical Officer)
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- Alex Clegg (Angling Trust National Angler Engagement Manager)
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