



Virtual Fisheries Forum 30/06/21 – Healthy Fish, Healthy Fisheries

Q&A Session with the National Fisheries Laboratory

Q. Hi I've recently taken on the chair position within Swanary Pulman Angling club, we've carried out many major projects with great support from the Angling Trust, As a committee we're constantly being pushed to introduce more fish, as a mixed course fishery I'm keen to undertake a stock-take to ascertain our current stock and species levels before any possible re-stocking,

Question 1: are there any alternative methods to understanding current stock and species levels apart from Netting,

Question 2: are there any guidelines (min - max quantities or weight etc) to ensure healthy stock levels both singly as species and as a total head for all species, Providing the right balance for club members and fish health without over stocking and commercialisation is key

A. Great questions Sean. We touched on a couple of elements of this during the presentation itself - overstocking is common when clubs are put under pressure by their members for introducing more fish. Having the right information before stocking is of course key. You will have seen the Stillwater ageing kits which we offer - getting a professional stock assessment is essential in understanding the carrying capacity. There are no hard and fast rules and every fishery is different, but I'd say the 3 most generic pieces of advice would be: 1. Fish ageing kit, 2. Getting in touch with your local fisheries officer 3. Hiring an independent consultant

Q. Our lake suffers from silt problems, however after wading through our lake we've noticed a larger layer within key areas, should we continue to treat with siltex over the entire lake or focus on the 3 main areas we currently have noticed the main problems?

A. Siltex is a really effective method of reducing silt, but it's important to remember the fact that it can only break down organic material – so it won't work on sand etc. You've got to be really careful with it – always do it in the winter, and always focus on specific areas – our advice would be to focus on 20-30% max of the fishery each year. The best thing you can do is to chat with the supplier in terms of dosage etc. Concentrate on the windward ends as that tends to be where silt builds up. Also bear in mind that it can only do so much – i.e you won't remove 4ft of silt purely using siltex treatments.

Q. Will these new argulus only be on the gills, so they are easily identified?

A. It seems as though these new lice really like the gills. 90% of what we've seen so far features lice in the gill cavity and mouth, although some may be seen on the skin. Essentially though, they are behaving in quite a different way to the common argulus infections which can be seen on both skin and the gills. It must be noted however that just because you see an argulus on the gills, it doesn't necessarily make it this new type.

Q. If trying to monitor argulus eggs you really need to be removing the pipes every 7 days as they may hatch out if you leave them for 2 weeks in warmer weather.

A. 14 days should cover by far the majority of cases, which is why this period was chosen. When we did the argulus trials, we went back on this 14 day basis to monitor how many were there and what kind of state the eggs were in. It's quite easy to tell how recently eggs have been laid by the colour. Freshly hatched eggs also show up very well on the black pipes we use, with a thin crust left behind. During my year or so of this monitoring on a heavily infected water I saw no evidence that any eggs were hatching before this 14 day period - though we were looking at temperatures of 21-22 degrees max. This could change if the water temperature were to increase however, and there would be a possibility of eggs hatching before 14 days. To hatch before 7 days would likely need exceptionally hot conditions.

Q. 1.5 acre lake in Norfolk. Recently purchased an aerator which helps with DO but are there any non-aggressive growing plants that we can introduce to help with oxygen levels? We do have beds of lillies which we control.

A. Floating islands are a really good option if you can source them. They're like a plant pot for a fishery and they can't spread. Be careful where you source plants from, but any native flora will improve DO levels. Get an oxygen meter and monitor. The main point however is always to fix the issue of where the nutrients are coming from, to prevent plants getting out of control.

Q. We wish to purchase equipment for regular monitoring of water quality, but there is a mass array online with various prices. Is there a specific type/brand of testers you would recommend? is it just a DO meter we need, or should we have others?

A. Great question and the right one to ask. Lots of people don't think about oxygen levels or they assume that their fishery has poor oxygen levels. A few years ago we used to say that you'd need to spend £8-900 on something which is easily calibrated, resilient etc. But you can now get some really good units for much cheaper. Other aspects of water quality need to be considered too, but oxygen is the most important – and so if you're club or fishery can only afford one piece of kit, I would strongly recommend this be a DO meter.

Q. I have had a few large koi appear on the stretch of river I look after. I have commons and mirrors to about 30lb in low numbers do I need to worry about Koi diseases on the river

A. Good that this has been spotted and its important to be mindful of all diseases. I wouldn't worry too much about the introduction of these koi as the chances of direct transmission in the river are low – a more important aspect to consider would be the biosecurity practices of the anglers who visit the river and any additional stocking. There is no such thing as 'no risk' and there are lots of potential routes for parasites/ diseases to come in, but I think as anglers and fishery managers we need to focus on the greatest risks. So my feeling would be don't necessarily worry about the koi, but be mindful of the fishery and perhaps take the time to have a review of general biosecurity and the measures you can take which are practical and within reach.

Q. How many cases of the new non-native Argulus has there been nationally? Have the outbreaks been localised in one area? Can you use E-DNA sampling to show them present or absent?

A. I think the current cases in the country are around 10 waters at the moment. There isn't a particular localisation, but we're keeping an eye out. Important when we emphasise health checks etc - never has there been a time where its so important. In terms of eDNA, its something which we're developing in the lab. It's a hot topic at the moment - new and exciting technology with lots of potential. The biggest problem in regards to this argulus is that being something so 'new', we don't already have the a great deal of genetic information on the species. Therefore because of the similarity to other species of argulus, designing a test is difficult. In future it would be very nice to have that option available however.

Q. Is there a recommended list for the purchase or marginal plants please?

A. The Environment Agency can't recommend any retail options as such, but if you get in touch with your local fisheries team, they can offer a list of relevant species. Some good general advice would be to always ask a supplier where their plants have come from, never to be swayed by invasive non native species, and to seek out suppliers who grow from seed rather than import.

Q. Hi I stock to maintain losses in a carp fishery every year so only a handful of fish. Is this recommended or is there still a risk to the existing stock even when buying health checked fish from the top suppliers?

A. There are a few different aspects to this question. I think the first thing would be to look at the cause of losses each year and whether they are preventable, meaning you wouldn't have to replace these fish at all. Then perhaps what benefit you are delivering to the fishery with only a handful of fish each time. It is risky, and there is no way of avoiding this risk with regular stocking. Absolutely essential to have health checked fish, but there are some things which cannot be easily detected. If you're doing it very frequently with a small number it is indeed a heightened risk to your fishery.

One really good thing to do would be to manage a stock pond on site which reduces that risk of anything coming in. Even 1 fish dealer could give you 5 different sources of fish over 5 years since they might come from a farm, existing fishery etc. Some are lucky and are able to crop naturally spawning fish from their stock ponds and move them across. Another way would be to buy a large batch of smaller cheaper fish and grow them on.

Q. There are some feeds now being marketed as a way of removing/ deterring parasites. Is this a legitimate thing?

A. I think it comes down to what is actually in the feed. There are certain things with proven benefits such as probiotics. Garlic has also been known for hundreds of years to be a common addition to feed in order to deter parasites. Will it solve a parasite problem? No. Treatments can be difficult to in regards to a problem which has already occurred – a lot of these drugs are actually designed for use in fish farming, and depending on the product they might even be illegal for introduction into fisheries. Things like good nutrition are vital in terms of giving fish a varied and balanced diet, then perhaps asking the question if this is meant to solve a problem or potentially prevent a problem from occurring.

Q. I help manage 14 waters in the Colchester area and wondered what type of fish antiseptics you recommend and is there anything that you would say we should have our members avoid?

A. We can't recommend any particular ones, but most which are sold by reputable companies are good for topical treatments as part of a wider fish care regime for anglers after capture. Again they won't solve a problem, but they can be useful to maintain good health of stock. A word of warning is that there are a large number of products out there which would definitely not be recommended for use. Always stick with things which are manufactured and sold as such. Something which does seem to crop up regularly is the concept of a 'salt dip' – this can be do much more harm than good so please avoid.

Q. One method i have tried in the past to reduce the argulus infestations in trout fisheries was to lower the water level during the winter to freeze the eggs certainly if

you have a lot of marginal reed mace branches, stone etc a certain amount. Do you think the majority of the egg strings are laid in the top metre or so?

A. If you have the ability to lower water levels during winter it can be a fantastic thing to do to expose those egg strings. From our experience, not all but the vast majority of eggs are laid in the margins, so you won't get all of them, but it can still be very useful. During our trials with the pipes, we didn't actually go beyond 1m in depth so it's hard to firmly gauge how well they'd work in deeper water, but it was clear that there is a distinct shift in where the eggs are laid on the pipe in relation to the seasons/ temperature. For example, during the height of summer the eggs appeared to be laid in the middle of our pipes, and as the water cooled, the argulus anticipate the water levels dropping so they lay their eggs a little deeper on the pipe. So yes – when we drop the levels even further this can be hugely effective. Winter into spring appears to be the key time for management given the domino effect throughout the rest of the year.

Q. Any developments in finding some sort of bio control for signal crays?

A. Not currently

Q. What are the key ways to minimise parasites in general on a fishery?

A. Overall, this would be an issue of good biosecurity practice. Parasites are everywhere and often can't be helped. The vast majority are pretty harmless and they're pretty natural. When it comes to fishery management, it boils down to good conditions, good nutrition, good water quality, good habitat and minimal stress. Ultimately fish are resilient creatures and capable of looking after themselves, provided they are given the basics. With regard to introduction of parasites, it's about being mindful of biosecurity, making sure you're not introducing things which you want to avoid.

Q. Is there a benefit in introducing an antibiotic when feeding after adding new fish stocks?

A. Generally speaking, I'd say no. Introducing an antibiotic - for starters the drugs are very strictly controlled and should only be administered by veterinary prescription, so you'd need to be mindful of why you'd want to do it and what you'd want to achieve. Another thing to be mindful of is getting the drug into the fish at an effective level – so it's likely that when new fish are introduced, they'll be feeding on all sorts and so the likelihood of them taking in enough of the antibiotic to an effective level is very low. And of course you might be doing some harm in terms of the impact on invertebrates and the possibility of antibiotic resistance. Again this would be a time to focus on the basics such as health checks and water quality. It's not uncommon for fish to

get the occasional knock or ulcer when going through the process of stocking, but again if the basics are right then they can easily overcome this.

Q. How should any diseased/sample fish be sent to you for analysis?

A. This should be done through our area officers. They understand the local fisheries and they are best placed to advise. If you've got a problem or suspect something untoward they should be your first point of contact. Please don't send in fish directly to the lab. You can also phone the incident number and you will be directed to the right people – 0800 807060

Q. What is the best way to increase oxygen levels in still waters if a problem is identified?

A. There are several routes you could go down. You could look to increase wind action by removing trees etc, mechanical aeration or by encouraging plant growth.

Q. Is a low protein winter feed more beneficial than no feed?

A. Great question and excellent to see fishery managers mindful of fish nutrition. There isn't a clear cut answer to this since every fishery is different, but in a nutshell supplementary feeding can be really good if it's done sensibly. Whether or not its required though is another matter – usually speaking if your stocking densities are right then you shouldn't need to engage in any supplementary feeding. Fishes metabolisms slow in winter so they don't need as much food anyway – the exception to this rule would be on heavily stocked commercial style waters. So having high fishing levels in the summer and low in the winter it would require something. Ultimately you will understand your fishery best.

Q. When a fish kill occurs, what are the top 3 pieces of information to diagnose the issue?

A. Diagnosing from the bankside can often be difficult. Sometimes there are obvious problems e.g DO levels. Without an investigation though its easy to misdiagnose which can create problems. Firstly I'd say to seek some kind of expert advice/ guidance on what you're seeing. Take photos – if you can take photos safely of what's occurring, this can be really useful. And lastly keeping records – how are fish behaving, how many are being lost etc – and get in touch as early as possible. The Build up to an incident is a really important time – often we're contacted too late. Look out for changes – anglers are really good at having a gut feeling for the mood of their fishery. A really good tell-tale sign is when fish are feeding hard and then suddenly stop overnight.

The fish lab are great when it comes to diagnosing. One key question from our perspective is species – is it species specific or are all fish effected? Timescale is also important.

Q. Can parasites be carried by birdlife between waters? Is there an amount of time they can survive on birds?

A. Another great question and one which has been debated for a long time. I think this is all down to likelihood. There are lots of parasites which birds carry naturally and cycle through fish. There probably isn't a fishery in the country which doesn't have the occasional eye fluke etc which are part of the natural ecology. Can parasites be moved by birds yes, should it be a major concern, no. In terms of actual risk for introduction from birds, this is low when compared to things like stocking and angling activity. Ultimately, anything is possible but we should focus on our efforts of likelihood and areas we can effectively manage. It's also important to recognise that these species live in levels of harmony anyway – so we might well get a parasite which starts in a snail, then to fish, then to bird and back to snail. In terms of what birds can transfer on their feet externally, it's a risk but highly unlikely.

Q. Carp eggs can survive being eaten by birds and then transferred to another water. Is there a chance that parasites and viruses can move this way too?

A. There's no simple answer unfortunately and again it comes down to potential and likelihood. The gut of a bird is a harsh environment and often viruses won't be able to withstand this. There could be regurgitation etc, it would depend on the stage. Negligible risk compared to other pathways however.

Q. Our waters are in public open space and only fed by storm drains of the area, are there any specific risks relating what may come in through storms drains, such as salt on roads in winter or council sprayed weedkillers in spring etc?

A. There is always potential for things in winter, but the dilution aspect usually prevents this from being a problem. Anything which is coming into your fishery and effecting it is pollution so should be reported. There are restrictions on spraying pesticides, herbicides etc and this all requires permits. Another thing which is really useful is to think about buffers – for example if you have a drain entering a fishery you could consider planting reeds which will help protect the fishery from things like nutrient loading. Always have a good relationship with your landlords though, and be careful about how you approach potential polluters and neighbours.

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Key contacts:

fish.health@environment-agency.gov.uk
fish.ageing@environment-agency.gov.uk
non-natives@environment-agency.gov.uk

With thanks to:

Emma Nolan

Chris Williams

Kye Jerrom

Conor McCormick

Amy Reading

Charlotte Eade

Connor Harvey