



Virtual Fisheries Forum 22/02/2022 (An Introduction to Fisheries Management Planning).

Q&A session

Q. Are there any resources or courses available on this subject which I could use for further learning?

A. (Paul Coulson) Yes, the IFM provide specialist training in fisheries management which encompasses a broad range of subject matter relevant to the industry. Courses are available at diploma level (highest) and certificate level. [Resources available by clicking here](#)

Q. How important is the removal of large quantities of tiny undersized silver fish from fisheries from a water quality point of view?

A. (Paul Coulson) It depends on what you are trying to accomplish with the fishery. If you have dense stocks of small roach for example it may be useful to remove them if your fishery suffers from low DO levels in spring/summer. Removing the competition of lots of small mouths also supports the growth of specimen fish at the fishery and helps reduce waste release/excretion which in large amounts deteriorates water quality. What constitutes an overstock of small, stunted fish is different for every fishery and depends on factors like size of lake, depth natural food availability and more.

Q. How much of an impact on pond water oxygenation does the bacteria from rotting vegetation (leaves) and black rotting silt have?

A. (Paul Coulson) It is not the bacteria from the rotting silt that causes the Oxygen issues but the bacteria which neutralises the rotten leaf litter/vegetation silt. This is known as the biological oxygen demand or "BOD" i.e., the amount of oxygen which the bacteria consume to neutralise the decaying material in the water. This is measured in a lab typically over a 5-day period within a closed system (a brown bottle typically) to see how much dissolved oxygen decreases over the time. In

fisheries oxygen crashes are not normally due to BOD, the main times it can be an issue is where a fishery is very silted up with a lot of rotting organic vegetation matter or there is an external source of organic pollution coming into the fishery.

Q. What range of pH is considered ideal for smaller ponds in the 2-acre range?

A. (Paul Coulson) You want a pH as stable as possible firstly, but you would be hoping for ideally neutral range 6.5-8 bearing in mind pH is a logarithmic scale meaning each number value is 10x more or less than the next. A fishery will typically have lots of inputs which affect pH such as rainfall which is acidic. This acidity is buffered by the hardness of the fishery water which is driven by typically abundant dissolved substances such as calcium carbonate. Unless the fishery has unusually soft water inputs like rainfall shouldn't worry the pH a great deal.

Q. What predation prevention methods have proved to be successful in fisheries, particularly Bird predators?

A. (Alex Clegg) We ran a very detailed virtual fisheries forum on this subject recently with the [catch-up available here](#).

Q. Can King carp and crucian carp live together in a pond? (Issues with hybridisation?)

A. (Paul Coulson) They can co-inhabit but not always in complete harmony. There is a high risk of hybridisation. If your plan is to create a Crucian water, then you do not want King carp in that fishery. This ensures safeguarding of the pure breed genetics. The Angling Trust have been working on promoting this message through the NCCP with [more information available here](#).

Q. Regarding managed/supplementary feeding; In general, what are the positives and negatives of this throughout the year? What factors should inform the quantities of feed, type of feed, and times of year to prioritise feeding? Our club are currently looking at this option (subject to cost) because of just starting a 3-year re-stocking plan and we want to ensure the natural food resources within our lake remain and the new & existing fish gain weight in a healthy productive manner. As a mixed club fishery, it

doesn't get heavily fished or baited by our member anglers hence why we are considering additional feeding?

A. (Paul Coulson) If you know the biomass of the lake, which not many fisheries do, then you can work out a feeding regime, typically around 1-2% bodyweight/day. Supplementary feeding is valid, but you do not need to do it all year round as in winter they will have slower metabolisms and the feed will likely be unnecessary. When water temperature is 8-9 degrees Celsius then the fish's metabolism will increase, and feeding will be a boost to them. Be sure to feed them a diet designed for fish of which there is lots of good feeds commercially available. Use a decent pellet size for fish feed (6mm or so) also so that the food has some longevity if the fish are not eating them instantly. Feed the same area of the pond/lake continually and at similar time of day. Many fisheries put a stake in the water and feed around the stake, this helps to assess the feeding activity. Keep an eye on water quality when starting a supplementary feed regime as the additional nutrient inputs can potentially cause deterioration. Daily DO checks and 2-3 times a week check ammonia and nitrate levels which if you begin to see elevations then reduce the feed inputs. Consider how much food the fish get from anglers.

Q. I'm after some information regarding Siltex. How often do we add it? Do we cover the entire lakebed? guys selling Siltex say we should, but we have had advice from others in the Angling trust who say a maximum of 25% of the lake should be treated at any one time. Are you aware of any suppliers? What are the benefits? Thanks

A. (Paul Coulson) Siltex is finely powdered calcium carbonate. There is lots of benefits with it for the hydrosol of the lake creating a better environment for the bacteria to live and break down the silt. Siltex doesn't work on very rough organic material like branches and woody debris. Regarding the spreading, it is very difficult to spot treat and naturally the Siltex will spread out when in the water. The autumn or spring are the best times to get it introduced as higher water table and oxygen levels are beneficial to its effectiveness. 800-1000kg per acre is the general recommended treatment with a secondary treatment being half of that after a period of time has passed. Sometimes when applying Siltex, as it breaks down the sediment, more locked nutrients are

released from the lakebed potentially triggering an algae bloom if not managed carefully.

A. (Alex Clegg) Are there any suppliers of Siltex you would recommend?

A. (Paul Coulson) Loads out there, be aware of what you are using because there is variation in the products for example some Siltex products are hydrated lime which is a steriliser rather than a silt remover and also potentially harmful to the user. Fish farms will often use hydrated lime to sterilise ponds after the fish have been removed. It is not to be used for wet ponds.

Q. Can you confirm the manufacturer of the water quality unit shown/mentioned?

A. (Paul Coulson) [OxyGuard](#). The other unit shown is a [WATR Unit](#).

Q. We have a trout water about 10 acres which is popular and has good feeding, but the lake is only about 6 feet deep at most. In hot weather we risk high fish death rates. It fishes well in cool water with much better fish recovery also. We can't deepen it without draining it. Dissolved oxygen is the problem. We are looking at aeration but unsure what to look at? any advice?

A. (Paul Coulson), There is loads of different aerators out there. Paddle wheel aerators are commonly used with good effect. The key thing with aerators is that they need electricity to work which is not suited to remote places. Solar powered aerators are out there but the cost is more. Discuss with manufacturers and choose an aerator which suits your site. Aerators which operate by paddle type movement intern create underwater tow and waves which can cause problems for anglers as well as bank erosion

Q. What is eDNA?

A. (Paul Coulson) It stands for environmental DNA. Nature metrics is one of the leading companies in eDNA and for the user of these services all there is a requirement for is you to collect samples of water to be sent off for machine analysis which tests for DNA traces of different species within your water sample. eDNA is best performed with a series of samples from one place for best results. The issue with eDNA is that it is very sensitive and often provides false positives for species that never actually resided at the sample site. It struggles to indicate species

abundance. One of the main uses relevant to aquatic ecology is for invasive species tracking.

Q. Has eDNA been developed to the extent where for example it can distinguish between different genetic strains of the same fish species like Wensum Roach as opposed to Hampshire Avon Roach?

A. (Paul Coulson) It is not as refined as that yet. There are other genetic profiling methods to identify what you suggest but not via eDNA. The cost of eDNA is still expensive so consider how necessary it is.

Q. What kind of underwater camera was referred to by Paul in the presentation? ARIS?

A. (Paul Coulson) Yes ARIS is correct. [More details available here](#). They are about 100k each so not a light investment. There is lots of great stuff on YouTube done with these cameras such as <https://www.youtube.com/watch?v=rder9YHVkO8> and they are used by the Environment Agency frequently.

Q. How can you control Canadian pondweed in Lakes that water flows in and out of because dye methods just flow out?

A. (Paul Coulson) This is very difficult, particularly with Canadian pondweed. Mechanical control is the best option really via a weed cutting boat maybe coupled with a secondary control measure.

The IFM does run aquatic weed control workshops in partnership with the Environment Agency which outline the contemporary techniques and methods available. The next one is on March 19th [available to sign up for free here](#).

Q. You spoke about "previous trends to introduce Ide etc and then they disappeared". What would the reasons be as to why newly introduced fish stocks disappear? Predation, stress, or water type changes?

A. (Paul Coulson) There was a trend a few years ago of stocking large numbers of Ide into fisheries but as the years followed the subsequent match catches of Ide seemed to reduce indicating they gradually became less prolific in numbers but now the bulk of Ide caught comprise of individual larger specimens which have made their way into even natural venues such as the River Hull and some East Yorkshire drains where they grow to 8lb.

Q. Talking of biosecurity, many specimen or day ticket waters provide nets, mats and weigh slings, but I have never heard of match fisheries providing keep nets or landing nets. with match anglers travelling to many different venues, it is a greater risk. These waters often being overstocked and ideal growing conditions for viruses and parasites?

A. (Alex Clegg) I have been to a number of fisheries where they do provide keepnets and landing nets but it isn't the norm yet as you say. The message of biosecurity and check, clean, dry procedures is being pushed enormously by the Angling Trust with a comprehensive best practice document for match and competition organisers currently being written by our Environment team. There is also some great partner stakeholder services offered for anglers/clubs/fisheries out there such as Yorkshire Wildlife Trust providing free installation of wash down stations.

A. (Paul Coulson) Keep net stink bags are the worst thing for vectoring fish disease in match fishing as it is common practice to for example fish Saturday at one fishery, put nets in the stink bag still wet and then use them at another fishery on the Sunday. With many match anglers needing multiple keepnets for a match many fisheries do not want to commit to investing in say 3 keepnets per angler who fishes. Also nets and keepnets purchased by fisheries have been known to get stolen so this makes fishery owners reluctant also.

Q. "Beware that no Supplier is EA or DEFRA recommended"? Clarify please?

A. (Paul Coulson) Fish suppliers and fisheries should be CEFAS registered. The Environment Agency, DEFRA and CEFAS do not however accredit certain suppliers/fisheries over others as they want to avoid being accused of bias.

Q. In regard to farming your own fish by spawning etc. What number of carp would you be needing on average for this to happen? We are stocking around 35 from 10lb to 23lb, would this be enough to see some fishery number growth naturally?

A. (Paul Coulson) Depends how old the fish are, the environment they have, good spawning areas, favourable conditions for fry recruitment/survival etc. Producing your own fish is always the best option but you need the environment to support them. Wild

productivity in open fisheries is quite difficult to achieve throughout most of the UK. There is some excellent free resources on fish farming available just via a google search e.g the FAO <https://www.fao.org/aquaculture/en/>

Q. Is there a template to create a management plan?

A. (Paul Coulson) It depends on how many people are feeding into it as if a fishery is being managed by a committee there is more conferring/complication required than say a singular fishery owner. Today's presentation provides the key points to focus on when creating a new fishery management plan. If you take the points which you feel are relevant to your fishery and say, put them as headings in a GANTT chart or other time planner sheet of your choice with deadlines for each aspect that is a good start.

Q. Should there be some form of fishery accreditation scheme?

A. (Paul Coulson) We used to have one. The IFM years ago ran it but it was removed. I think it should be brought back but the problem is how do you get fisheries to sign up to it if they suspect or know they will not meet the high standards? Also, would a typical angler be prepared to travel extra distance to fish a higher rated fishery based on risk awareness? There is a lot to consider but it is worth trying to get right, I think.

Q. When do you know when to treat silt in your lake?

A. (Paul Coulson) If I had taken on an old estate lake I would look to improve the benthic environment with some Siltex. This helps mitigate any anoxia issues. Larger fisheries with a bit of depth are less impacted by silt so it is judged on a case-by-case basis. If you feel there is a threat to Oxygen then that is the time to act.

Q. We've got a number of small ponds that haven't had lots of care due to Covid etc. What should we attempt to measure first & how should we do it? I would guess focusing on 1 pond at a time - survey fish numbers? pH? DO levels etc.?

A. (Paul Coulson) What are you trying to do with your ponds? Do you want them all open for fishing? Is there an army of volunteers to help?. I would suggest concentrating on one at a time choosing the most

favourable pond to start. Basic water quality checks, net it for fish if possible and map out the lake to refamiliarize with the features as these change over time.

Q. Can you recommend a good water lily that will thrive in an open 16-acre lake?

A. (Paul Coulson) Whatever you do, DO NOT put ornamental water lilies into your fishery. Stick to native water lilies and put them into areas where you think you can manage them. We have also lost a lot of chemical treatments which were once available to manage aquatic plants so now it is down to mostly mechanical removal to keep on top of them.

Q. What are the best methods for the removal of pike from a trout fishery other than electrofishing?

A. (Paul Coulson) Pike respond very well to electric fishing so this would be a good way to get them out as long as the water was suitable for the effective use of electric fishing.

You can catch them with Seine nets but otherwise it would be rod and line which is slow but is selective and prevents unnecessary stress on other fish. Always remember when removing pike that they are cannibalistic so you should leave the largest fish in as a mechanism for controlling the smaller fish. They also make good sport in a winter when the trout may not be as obliging

Q. What is the best way of getting Oxygen levels up on a lake? Is running an aerator the best opinion?

A. (Paul Coulson) There are lots of causes of low Do and you should try to work out what the root cause of the issue is in your fishery. Aeration is the quickest and easiest method to raise levels and there are lots of forms of aeration available from fountains to paddlewheels. Make sure you do your research before you buy aeration as putting the wrong type in your water can cause other problems

Q. We have used Siltex on our water and are currently looking at cropping back some of the weed and using a lake dye to suppress the weed. Is this a good idea? Our water is around 4 acres fishable and around 4 ft average depth. We are stocking the carp I've said earlier but have a good stock of

tench average size 5lb, Pike and silvers, along with around 30 original carp. Is it advisable to cut back the weed for more biomass?

A. (Paul Coulson) Too much aquatic weed in a fishery can cause lots of problems, but it is important to understand that you do need some plants and total removal is not a good idea.

If you have a lot to deal with it may be best to concentrate on areas that anglers want to fish in and mechanically remove as much as you can. A secondary control such as pond dyes can then be used to restrict regrowth. Adding additional carp will also help suppress growth through their feeding action. Given the depth of water I would suggest it would be useful to remove some of the weed and raking/pulling may work depending on the type of plants.

Pond dyes are not effective on every water, and they don't work on certain types of weed or on established plants that are already at the surface. The dyes works by limiting photosynthesis so once the plants are at the surface they are out of the dyes range.

Q. How to prevent predatory fish from entering into a stream-fed fishery?

A. (Paul Coulson) This is very difficult if you have to have an unimpeded flow of water from the stream. The easy answer would be to put a screen of some description across the entrance which would limit the entry for all fish, not just predatory ones. However, this comes with a raft of problems and is unlikely to be practical on all but the smallest of streams.

Without the option to limit fish migration into the fishery then I'm afraid you are probably looking at periodic removal of the predators

Q. Would you recommend using Siltex as opposed to sucking the silt out as we have a heavily silted water and are looking at having it sucked out?

A. (Paul Coulson) Without more details on the size and depth of the water and the causes of the silt it is hard to suggest the best method of control.

Given the cost and mess caused by suction pumping the silt out I would only recommend this as a last resort (or if money is no object). Siltex has it's limitations and needs a few applications over a couple of years before you can assess it's effectiveness.

Q. How much are the eDNA kits and the total costs to get the results please?

A. (Paul Coulson) I would recommend you contact the team at Nature Metrics (<https://www.naturemetrics.co.uk>) as they will be able to give you the very latest prices and species they can test for

Q. Are Grass carp useful for clearing weed from stream-fed lake?

A. (Paul Coulson) you wouldn't be allowed to stock grass carp in a stream fed lake as it is not fully enclosed so you wouldn't get a permit

They don't work particularly well in this country anyway!

Key contacts from this forum meeting:

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- Paul Coulson (Director of Operations at The Institute of Fisheries Management)
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