AMATOLA FLY FISHING CLUB

Incorporating the Frontier Acclimatisation Society and the Stutterheim Trout Angling Club

NEWSLETTER – AUTUMN / MAY 2015

The first phone call I received this morning was from committee member Shaun Petersen, to report that part of Gubu's clubhouse's roof had blown off. That's not a happy way to start the day ☹. Shaun was thankfully quick to contact another of our members, Gordon Smith, whose business specialises in roofs and roofing, and a repair team is on their way out to the dam. This is an abrupt reminder that our clubhouse is ageing and that we need to take repairs and maintenance seriously.

Members should have received with this newsletter a proposed, draft constitution for our club. Please take a look at this and if you see any errors and/or have anything you would like to see added, modified, or removed, e-mail your comments to stac.trout@gmail.com. I would especially appreciate feedback from any legal professionals that we might have in our number.

Members should also have received an updated membership form for subs payment. If you've already paid your 2015/16 subs, then just ignore it. You will note that there is quite an upward jump in the subs; this is in-line with the decisions taken at our last AGM. It is important to build up our finances, partly to enable more maintenance work on our facilities and hopefully to accumulate a little extra for the unforeseen twists and turns that may transpire along our road ahead. We've gathered a few new members of late but also lost a few who have left the area. Please keep spreading the word and remember you can always refer folks to our website www.amatolaflyfishingclub.co.za for more info, membership application, etc.

For those of you who've visited Gubu recently, you might have noticed the big, colourful AFFC signs that have been erected. A very big thank you must go to Malcolm Klein of CB4 Retail for printing and donating the signs, which did not cost AFFC a cent. And also a big thank you to Miles Vice and his team from Penny Pinchers for installing the signs, and Rance Timber / Amathole Forestry Company (Francois Sparks) for having the poles planted and drilled. We still have two signs that need to go up at Maden Dam and need volunteers for doing the job, so please step forward by contacting me about the details.

I recently purchased a pile of fly fishing books from someone who was scaling down and it's my intention to donate most of these to the club. Together with these books, it would be nice to organise the better preserved magazines in our very messy magazine collection in the Gubu clubhouse, plus other fishing books that may get donated in future, into a little library. The kind of thing one can dig around in on a cold, windy day or for a bed time story. With this in mind I am asking if any of our members have any standalone book cases or book cabinets that they can donate. We can stand the book case/s against a suitable wall and get the books and magazines off the current table they are on and arranged in a more organised layout.

And now onto the fishy stuff … A few members have expressed to me their dismay at what appears to be a current dearth of bigger rainbows in Gubu. Let's look at this the logical way, which is by the actual numbers. The 2011 (September) stocking was 12391Rhodes University fish. The 2012 (December) stocking was 2139 Rhodes University fish. Rainbow trout are a short-lived species, under typical South African conditions they seldom live much beyond four years. This means that only very few of the 2011 stocking remain, probably somewhere between 5 and 10%, if we're very lucky and that equates

to 930 fish (which should be 2kg+) if we take a 7.5% survival average. Of the 2012 stocking, let's say between 10 and 20% are still alive, that equates to 321 fish using a 15% survival to three years average (which fish should be around 1.5kg+) still in the dam. So add those numbers together, and you'll see it's few bigger fish. The 2013 stocking of 20000 odd fish should yield a decent head of bigger fish next year and the year after though.

A related matter is that we need to keep our expectations for Gubu realistic. Gubu is a low-nutrient and low-productivity water that cannot be compared with some of the very productive Winterberg and Stormberg/Karoo dams, where in some places the trout are swimming around in what is almost a living soup and individuals often reach 3kg+ in their four-year lifespan.

Put in another way; let's start at the very bottom. The building blocks for aquatic life are water, energy (from the sun), carbon (from carbon dioxide), oxygen (dissolved in the water) and mineral nutrients. The most important mineral nutrients are the elements nitrogen and phosphorous, but other elements like potassium, iron, and sulphur are also important. In the aquatic environment, these mineral nutrients are derived from the natural breakdown of the surrounding rocks, soil, and organic matter. It follows that if the surrounding rocks and soils are low in these mineral nutrients, then there will be less of the life that depends on them.

To expand on this, at the base of the food chain are the primary producers that use the sun's energy and mineral nutrients to produce organic matter. These are algae, bacteria, phytoplankton (plant-like plankton that live via photosynthesis e.g. diatoms), and plants, and the presence and abundance of all of these are highly dependent on the amounts of mineral nutrients present. Most small invertebrate life such as the many aquatic insects (e.g. mayfly nymphs, midge larvae, caddis fly larvae, etc.) and zooplankton (e.g. daphnia) feed on the primary producers. Moving up the chain, the larger life forms like crabs, tadpoles, damsel fly nymphs, dragon fly nymphs and all the fishes, etc. depend in turn on everything below them in the food chain. Of course, predatory carnivores like dragonfly nymphs may depend on a slightly higher level of the food chain than crabs for example that are omnivores and can feed by grazing algae *and* catching prey. The central theme to all of this though is that the top of the food chain is entirely dependent on the base of the food chain is entirely dependent on the base levels of mineral nutrients. Think about your grass lawn, when it's adequately fertilized with nitrogen, phosphorous, and potassium, the grass grows dense and grows quickly. But if it's not fertilized, the grass grows slowly and in scraggly patches.

Regarding overall productivity, there are other important factors such as water clarity, pH, temperature, oxygen levels, etc. but they are all of secondary importance to the mineral nutrients. Getting back to Gubu Dam, the surrounding rocks and soils have low levels of mineral nutrients and a lot of the available nitrogen is also taken up by the forestry plantations. The end result is a relatively low level of primary production, which limits the abundance of every other living thing depending on it.

To put this into a better context for Gubu, I'm going to sketch a simplified scenario. Imagine that there's a dam that's similar to Gubu (i.e. nutrient poor) and in that dam there is a small population of dragonfly nymphs. The dragonfly nymph population is limited because their prey is scarce because primary production is low; the dragonfly nymphs are thus few and far between. Now let's say that the dragonfly population can sustain the removal of ten nymphs a day and we put one trout into that dam. Because of the scattered population density of the dragonfly nymphs and the area that must be covered for that one trout to find a nymph, the trout can only manage to find and eat two nymphs a day. The trout will thus grow at a rate dictated by how much nutrition it obtains from those two nymphs relative to the energy spent hunting and catching the two nymphs. If we now put another two trout in the dam, it will still take each of all three of the trout the same amount of energy to find their two nymphs a day and the trout will thus all grow at the same rate. Note that the dam's carrying capacity for trout, relative to dragonfly nymphs, has not been reached yet with just the three trout in the dam. The carrying capacity is only reached when there are five trout (eating ten nymphs a day in total) in the dam, and until the carrying capacity is reached, the trouts' individual growth rate remains

the same regardless of how 'under-stocked' the dam is. The point is that growth in trout is not entirely linked to just how much total food there is but in how that food is distributed (and its actual nutritional value). An interesting observation for Gubu is that even though the stocking numbers have varied wildly over the years, the annual growth rates of the various year classes of fish have not varied much, which is not surprising given the process just described.

Coming back to the sad fact that the trout have a limited time to live and grow, as they become bigger, they also require more nutrition to sustain their weight. Last-mentioned is why Gubu's stockies grow quickly at first as it's quite easy for the fish to find a lot of very small food efficiently, but as they grow it becomes harder and harder to feed efficiently (i.e. maintain their weight) on the small food items and there's a scarcity of bigger, higher-order (higher on the food chain) food items. With a relatively low growth rate, short lifespan, and Gubu being where it is, there is just no way to grow 3kg+ rainbow trout consistently. Fortunately though, there are always pleasant surprises and there has been and will always be the odd monster. Brown trout live quite a bit longer (sometimes two or more times as long as rainbows), so having browns does increase the chances for catching some bigger fish, but more on this later.

For this year's rainbow stocking, what I've tried to do is calculate the annual productivity (in kg of trout growth) of our dams. The basic premise is that we know what we put in, we know how much they grew and we can assume how many survived from year to year. With this information we can calculate how much productivity is available for the new generation's growth. That is based on current growth rates and in other words, keeping the status quo. If we notice that our growth rates do not decline (all things being more or less equal e.g. water level) then we know that we are not yet at carrying capacity and we can gradually increase the dams' productivity value, which will raise the stocking number, until we notice a decline in annual growth rate. For the moment though I've opted to try and keep things the same as they are until we have four years' worth of observation of applying a consistent strategy as we have done the last two years. For those of you who like playing with numbers, there's an Excel spreadsheet attached for the Gubu calculation. My thanks to Colin Levy for checking my numbers, Colin is our unofficial fishing returns records keeper and he keeps the limited records we get in up to date and organised. You will note that even by varying the mortality rate models quite a bit, there is only a small variance in the replacement stocking number. Let me know if you find errors in the math or premises. The numbers still have to be fine-tuned based on info that comes in later in the year and especially at our September competition, but ballpark figures are 15500 - 16000, 8cm fish for Gubu and 3500 for Maden. Total cost for our rainbows will be in the order of R30500.

We have found a source of brown trout at a hatchery in Natal, and although it would be really nice to stock browns in both our dams there are some hassles that must be ironed out. The first is costs, sub 2" fish cost R2 each, while the size we should stock with, 3"- 4", will cost about R5 each. It would be ideal to stock Gubu with a significant number of browns, somewhere in the order of 3000 – 5000, which once they are bigger than about 2cm, and due to their somewhat different habits, should not compete too much with rainbows. The costs are equally significant though. We are looking at buying the fish at their smallest available size, which cost R2 each, and growing them out at the Sandile facility until they reach the 3"- 4" size, but there are some physical constraints that need to be resolved first. The second problem is getting the fish to us. For this I am asking if there are any volunteers who would be willing to go and collect the bakkie load of fish, which would be at Cathedral Peak in the Natal Drakensberg, 770 km from East London, sometime in August? Please e-mail if you are.

There have been all sorts of broken telephone messages circulating re. the Sandile Trout Farm (the hatchery we use) being sold. The truth is the farm *is* up for sale, primarily as a timber concern, but a buyer has not been forthcoming. However, sooner or later it will be sold. At that time there are a number of scenarios that might play out and all depending on the dynamics of the buyer, but you can rest assured that we are thinking ahead, engaging people, and have numerous plans in our heads that will be proposed depending on what transpires. The eventual changing hands of the farm will not mean the *de facto* end of the hatchery that we have come to depend on.

Further to the Sandile hatchery, Hylton Lewis, who we have also depended greatly on to help us with all things about trout and especially hatching and raising them, is leaving SA for a while to take up work on an aquaculture project in Saudi Arabia. Hylton will only be as far away as the nearest e-mail portal but to help out with things hands-on locally, another of our trout-mad members, Devin Isemonger, who also studied ichthyology at Rhodes and works very close to the hatchery, has agreed to make himself available and for which we are grateful. I would also like to take this opportunity to thank Hylton for the many hours of erudite and totally practical expertise he gave us and for his trips to the hatchery, all of which he offered free of charge, and to wish him and his family well for their new endeavours in the desert.

This year's fundraising weekend, competition, AGM and all that jazz is going to be happening on the weekend of the 5th and 6th September, so keep that open to come and have a fun time.

Tight loops,

Edward (041-3689324 / truter.edward@gmail.com)

BLUE SKY SMILING. MILES VICE FROM PENNY PINCHERS STANDS PROUD. FOR LENDING A HAND MILES, WE SAY THANK YOU!