

THE BELL RIVER

By Leonard Olyott and Gary Shung King

Stage One – 19/11/95

As members of the Department of Ichthyology at Rhodes University in Grahamstown, we were requested by Dave Walker, the mayor of Rhodes and a hunting and fishing guide in the area, to do a study of the flyfishing potential in the area.

Study area

Our study covered a tributary of the Bell River, namely the Kloppershoekspruit. We followed the river from the source region on Tiffindell Farm to Lamont Farm, a distance of ± 25 km.

Aims and objectives

Our main aim was to assess the trout population of the river following stocking and the effects of drought which had prevailed in the area for several years. We also examined the quality of the river water based on the invertebrate life present and the sediment load.

We must point out that due to the constraints of time we were unable to perform a detailed study and some areas remain unsampled.

Report

We began our investigation in the vlei area near Tiffindell Ski Lodge along the Wartrail road. This appears to be the source of the river and its conservation is of utmost importance for the general well-being of the river system. It was pleasing to see that the water was clean with good flow and no signs of disturbance from livestock.

Fishing in this area proved to be of fairly good quality, with two fish being taken in the larger pools. They measured 25 and 35cm respectively, and had excellent colouration. They appeared to be in good condition, and with masses estimated between 200 and 400 grams. More fish were spotted in these pools, but were shy to take a fly – insect life in the stream consisted mainly of mayflies, but a few water beetles and damselflies were present. The assumption was that the fish fed mostly on terrestrial beetles and grasshoppers.

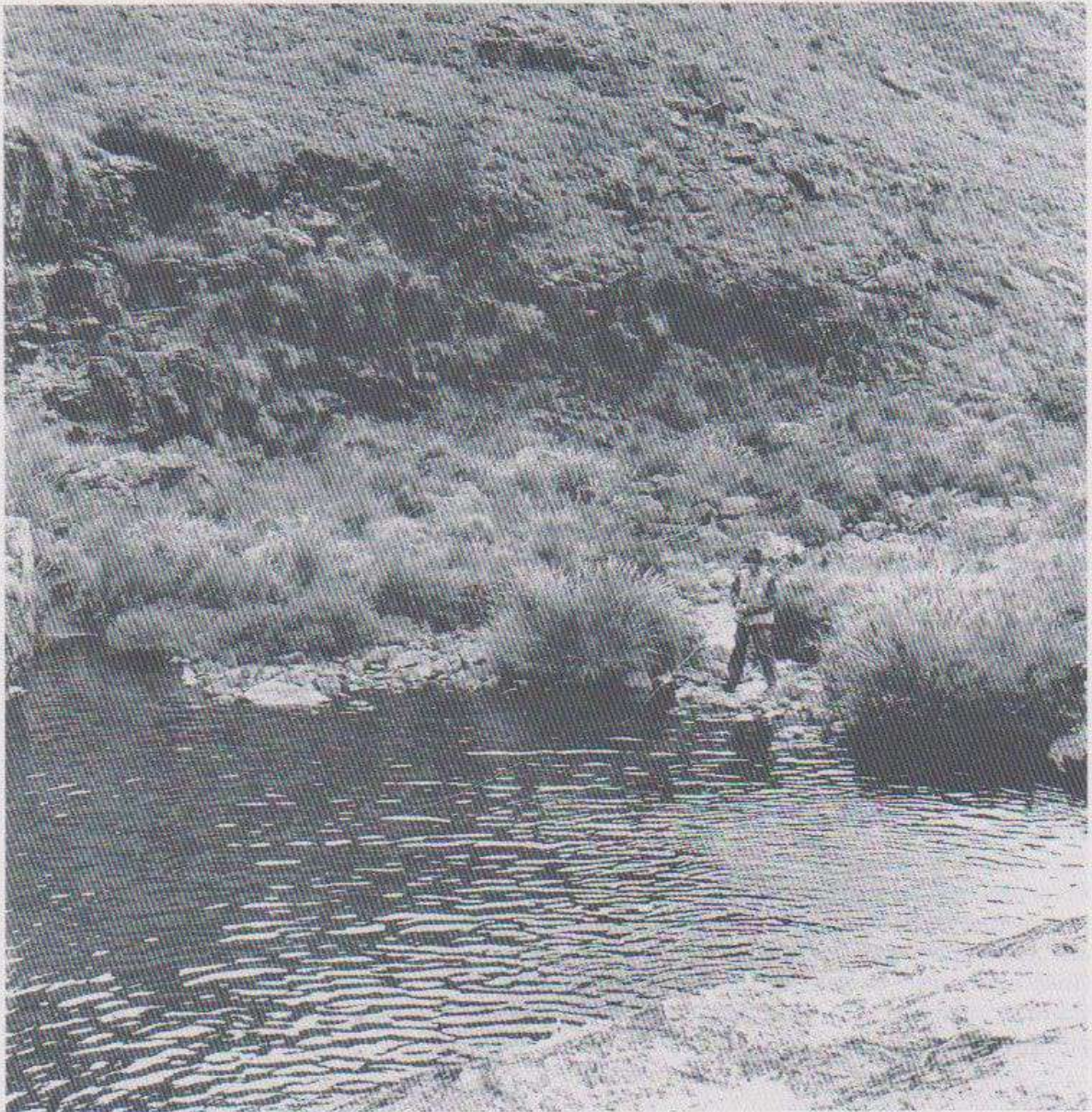
We followed the river down on to Ben MacDhui Farm and the waterfall pools. Above the waterfall, one fish measuring 35cm was taken in a deep pool and another was lost in another pool. Below the main waterfall, in the plungepool, four fish of 150g were taken and just as many were lost, mainly on Woolly Bugger type flies as well as Mrs Simpson and Woolly Worms in sizes 8 to 12.

Unfortunately signs of pollution marred the beauty of the river. This was mainly in the form of military issue food rations which had been discarded on the river bank. Signs of bait fishing were evident in the form of a crude paper-clip hook attached to a length of cotton and baited with a beetle. This was found in the plunge pool of the waterfall immediately below the main falls and the absence of fish in the pool suggests that perhaps the pool had been fished out.

We hiked down the river for ± 1.5 km and located a stretch of water with nice runs and pools. A fish of 38cm, estimated to be about 550 grams, was taken in a little plunge pool in this area. The fish was in good condition, and full of fighting spirit, leaping out of the water five times. We proceeded further down until a steep gorge, which could not be crossed, was found. Along this stretch, more signs of littering were found in the form of food cans and plastic wrappers. A slight detour high up along the slope of the gorge, and then down towards the river, allowed us to get back on scheduled course.

The river cuts a very shallow bed along the Marshfield section and very few large pools are present, this is probably due to the resistance of the rock strata. Once again the dominant life form was the mayfly nymph with adult spinners also in abundance. Along this section the fish seemed to become more sparse and the mayfly nymphs more numerous as well as larger. These two observations may be linked, the large mayfly population reflecting the lack of predators.

The Chevy Chase section held some of the finest water we had yet seen with deep pools alternating with good oxygenating riffles and waterfalls, the only problem was the lack of fish.



Rhodes University student Gary Shung King fishes the upper Bell.



Not all the fish were monsters ... Rhodes student Leonard Olyott with a denizen of the Bell.

Again, mayfly nymphs were large and plentiful.

The final stretch of river that we intended to fish was on Mavisbank, but one tributary carrying muddy water turned the entire river a gloomy chocolate brown which very few fish would be able to tolerate. The presence of cattle, goats and sheep also contributed to the silt load with animal tracks emptying topsoil into the river. At one point large amounts of cow dung were found floating in the river. Conditions such as these do not contribute to good trout angling and it is important to note that river degradation is an accumulative process and the worst effects of any disturbance will be found downstream.

Conclusion

While we would not expect a large variety of life in the headwaters, tadpoles (which should be common at this time of year) and very few crabs were seen. This may be drought related or due to some other factor, but whatever the reason, future stocking plans should take this into account and fish should be stocked in the correct numbers so as not to collapse the system. Perhaps even waiting for a year or two to allow the river to stabilise would be the best plan of action.

With regard to the situation of the river we feel that since we found only one dirty tributary it would be easier to investigate the source of the sediment load. The grazing of cattle close to the river should not be encouraged and some attempt to lessen the washing away of cattle tracks and hiking trails should be made.

Appendix

On our return to Mavisbank to begin Stage 2 of our investigation, we found that the river had cleared considerably and we were able to catch a few trout. There were also many frogs and crabs in the river and it appears that aquatic organisms are able to cope with the high silt load.

Stage Two – 21/11/95

Study area

This part of the study began on Lamont Farm and continued down to the confluence with the Bell River and then on into Rhodes town. The total distance was approximately 15km. This part of the river was characterised by a lower gradient and greater deposition of sediment, as well as more and larger pools. The farming activity in this section was also greater with large fields of lucerne (fodder for cattle) in close proximity to the river bank. There was also a greater use of the river water for domestic use. All of these factors were taken into account when assessing the angling potential.

Report

Some of our best fishing was had on Lamont Farm with trout being taken in virtually every pool that had some depth. The fish were in excellent condition and very eager to take flies ranging from tiny dries to large, weighted nymphs. The fish were between 20 and 35cm and 200 to 300g. The water was crystal clear despite the rain of two days previous which had turned this stretch to chocolate when we first saw it. The river banks were well stabilised with vegetation and there were hardly any signs of erosion, which may account for the good quality fishing and certainly helped the water to clear so quickly.

Continuing down to Mertoun Farm, we found the water to be quite coloured with suspended sediment and no fish were taken in the upper reaches. Crabs, tadpoles and mayfly nymphs were present in sufficient numbers to provide fish with food and therefore we can conclude that many fish were lost to the drought. After the Kloppershoekspruit joined the Bell River there was an increased flow in the river channel. This led to some greater vertical erosion and the spectacular cascade below the road bridge. The water of the Kloppershoekspruit was still very dirty, yet the water of the Bell itself was clear. This served to highlight the complexity of the rainfall regime operating in the area where the effects of a single thundershower could be confined to a single tributary while another was unaffected. The reasons for this are varied and have to do with tributary length, activities in the catchment and amount of rainfall.

Below the confluence, fishing was good despite the dirty water and 16 fish were taken. The highlight of this sections was a brown trout hen of 43cm estimated to be 950g. This fish was

between three and four years old and it was an extremely unusual catch for this "rainbow trout river". The fish was in good condition and fought well. Another large fish was hooked and lost in a deep pool along this section.

Fewer fish were found in the Park Gate stretch and there was a noticeably large cultivated area close to the river bank. The chance of sediment entering the river from these fields is high as monoculture crops generally do not bind the soil well and the large tracts of gully erosion in this section is evidence of this. The dirty water from earlier rainfall was found and we were unable to continue sampling. Abundant aquatic life was found in the form of frogs, tadpoles and crabs as well as mayfly larvae and leeches.

Conclusion

Generally we found the Kloppershoekspruit to be in a fairly stable condition as far as aquatic life is concerned. The mayfly population is usually indicative of clean water while the crabs and frogs are able to withstand conditions of lower oxygen and poorer water quality. The only distressing sign was the amount of green algae (*Spirogyra sp*) present. This algae forms dense mats of green filaments that are unsightly and tend to slow the river's flow, decreasing the oxygen content and thus impacting on the aquatic organisms.

Another aquatic pest was an unidentified grey fungus which coats the bottom of still, shallow pools. This may be an algae or water mould, but whatever it is it should be monitored to see that it does not spread.

The trout population of the Kloppershoekspruit should survive until the river is back to its usual flow pattern, but only so long as fishing is on a controlled level, possibly on a catch and release basis. This should last at least until the population is seen to recover, ie young of the year fish are seen or catch returns are higher. Some sections of the river will have to be restocked, notably Chevy Chase and upper Mertoun but only once the river has fully recovered to prevent collapse of the ecosystem.

Statistics

Aquatic plants:	2 x unidentified aquatic grass species <i>Spirogyra sp</i> (algae) unidentified grey fungus
Invertebrates:	crabs leeches mayfly larvae
Vertebrates:	frogs (<i>Rana sp</i> and <i>Xenopus sp</i>) trout ±30 rainbows caught plus 1 brown

Stage Three – 22-23/11/95

Study area

This part of the study entailed our return to Mavisbank and a few hours on the upper Bell in the Naudesnek area for comparison with the Kloppershoekspruit.

Report

As already mentioned, our return to Mavisbank was far more successful and allowed us to change our report to a slightly more favourable one.

The upper Bell is a completely different river from the Kloppershoekspruit, being fed by many tributaries and thus having a greater volume of water.

The problem with many of these tributaries is that it makes it difficult to pinpoint the exact area causing the sediment load, but thankfully much of the area can be aerially surveyed from the Naudesnek/Tiffindell road.

Along this road signs of military and police waste were abundant and some urgent action should be taken to sort out this problem before it gets out of hand.

Stage Four – 24/11/95

Study area

In this stage we examined the river from Rhodes downstream for approximately 20km to Glass Neven.

Report

This part of the river is characterised by a low gradient and a slightly softer bedrock. The bedrock itself is mostly covered with a layer of alluvial gravel and silt which forms the substrate of the river. This means that long shallow pools can form. These same pools provide excellent habitat for trout when the river is full but at the moment most are too shallow.

At first many trout were found on Glass Neven but as we travelled higher towards Rhodes, the river became too shallow and in places too turbid to fish.

One feature that struck us was the lack of structure in the pools. An idea for a project to improve the fish holding ability of the pools when they do fill would be to place large boulders in these dry beds. The boulders would act as cover for the trout as well as habitat for the aquatic organisms on which the trout feed.

With regard to the organisms – in addition to the usual frogs – that we did find were crabs and mayflies, dragonflies and some indigenous fish fry. An attempt should be made to identify the fish lest it be an endangered or rare species. As this is our only record of a fish species other than trout it is essential that the site (which is on Glass Neven) be conserved.

The fish caught were all in the 300g class but the potential for this stretch to produce trophy fish is great, given the size of the pools and abundant food.

Conclusion

This section of the river has a lot of farming activity which will lead to large sediment runoff during a heavy rainfall period. Some attempt at bank stabilisation should be made. In parts of the river this occurs naturally in the form of reed barriers and willow trees which help to trap the sediment, but in other parts it may be necessary to construct gabions to prevent the banks from collapsing into the river.

Trout may have to be restocked, especially in the heavily fished areas and again the same recommendations apply.

Overall impression

Our overall impression is that the Bell River system is an excellent fishing resource that should respect the agreements of the organisation and the riparian land owners and in no way jeopardise the good relationship between the farmers and the fly anglers.

Throughout our study and the course of the river we received nothing but co-operation from the farmers who very kindly allowed us access to the river passing through their lands. Their generosity should serve as an example to farmers all over South Africa.

Although recent studies by Rhodes University Geography Department have shown that there is a growing awareness of sound catchment management and the necessity of carrying capacity limits to protect the vegetation, the stock numbers are still in excess.

Attempts should be made to lessen the impact on the vegetation where possible and to take measures to consolidate loose topsoil caused by overgrazing and poor path construction. The roads in the area also need to be upgraded to lessen their contribution to erosion and subsequent runoff.

Given good rains, the trout will respond well and the 1998 season should see a return to the fishing excellence for which the region is renowned. Failing this, a light stocking should occur next year to compensate for the fish lost to drought.

Acknowledgements

Thanks to all the farmers who allowed us access to the river through their land.

We hope that this report is of some benefit to them. Special thanks to Dave Walker for hosting and transporting us. Thanks to Ed Herbst for flies and film, and the Rhodes Hotel for refreshments.