Consultation on Compulsory Release of all Sea Trout in the Annan District

Background

The Solway Sea Trout Fisheries, both rod and line and net were some of the most prolific fisheries in the UK. In the period from the 1950s to the 1970s the net catches in the Annan District alone were often over 15,000 fish per year and in many years the catch exceeded 20,000. This appeared to be reasonably sustainable as whilst there were dips in the numbers they seemed to recover quickly. The dips could well have been created by weather conditions (wet summers mean low net catches). During the 80s effort in the net fishery reduced as netting stations ceased fishing, often due to buy outs.

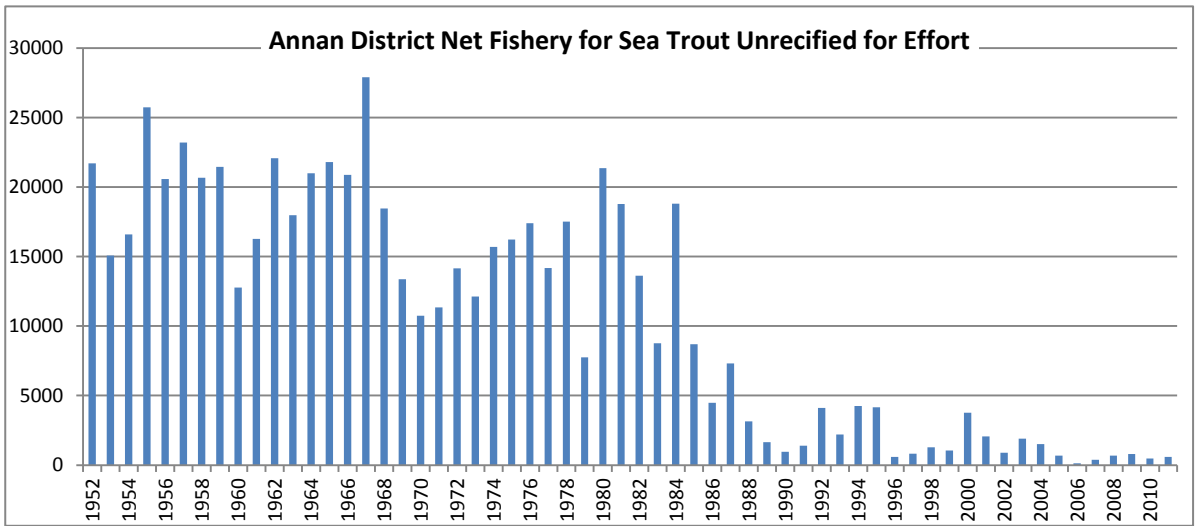

Fig i Scottish Government statistics for fixed engines in the Annan District

Other fisheries operated in the Solway as well such as the English Haaf net fishery which will have further increased the numbers of fish being taken from the Solway Rivers. Given the number of fish being killed every year the rivers of the Inner Solway must have been producing a phenomenal number of smolts to sustain everything. It should be noted that the Annan Net fisheries are of a mixed stock type and will be catching sea trout that are destined to spawn in the Eden, the Border Esk, the Sark, the Kirtle, the Annan and many of the smaller coastal burns that enter the Solway, indeed some fish may have come from further afield to forage on the large shoals of juvenile herring that are present in the summer. Coastal net fisheries for sea trout, unlike those for salmon will not just be taking fish running 'home'.

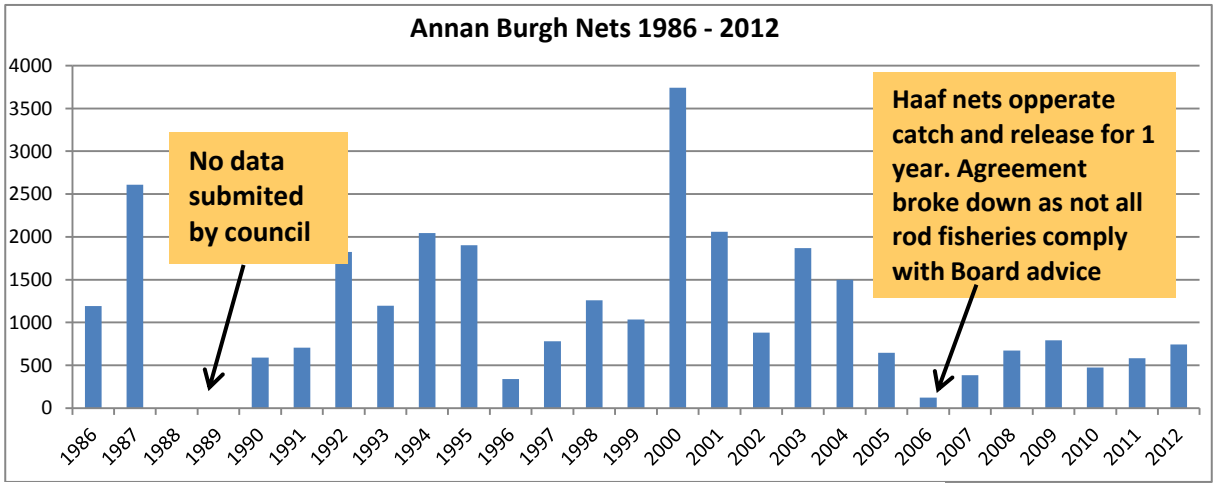

Fig ii Annan Burgh net catch supplied by Scottish Government

Owing to the collapse in effort during the 80s the overall net catches cannot now be used as a measure of abundance. Intuitively most netsmen would agree that if the same level of effort was placed on the fishery as was the case in 50s – 70s they would not catch anything like the number of fish recorded during that period. However there is no way of demonstrating that empirically.

It is therefore generally agreed that the rod catch is a better, if imperfect, way of measuring the relative abundance of stocks of sea trout. Effort is still variable across the data sets but all of the fisheries will have been operating at broadly the same effort. Whilst we do have access to data we have collected ourselves in recent years that is slightly different (and arguably more accurate) in terms of numbers the Scottish Government data has been collected in the same way since 1952. Therefore the latter is the data set that has been used.

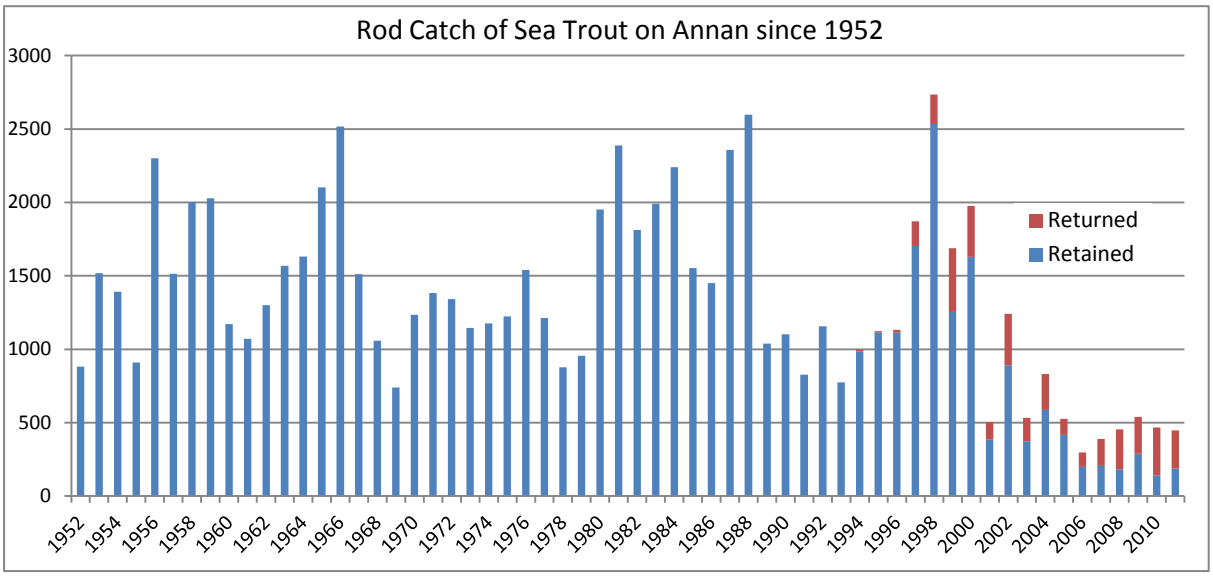

Fig iii Scottish Government rod catch statistics for Annan District

As can be seen in fig iii the rod catch does show a large amount of variance across the time series. What is increasingly worrying is the last few years as although there has been slumps before they have never been so deep or so long lasting. Coupled to that is fact that the last 'boom' period in the late 90s was very short lived and may well just be a blip in a long term downward trend. The proportion of fish retained has been reduced substantially in recent years through the increasing practive of catch and release (although this was only recorded from 1994).

The depth and length of the downturn in the catches and abundance of sea trout within the Annan District led to the Board asking for restraint a number of years ago. Indeed in 2006 we asked for all sea trout to be returned through a voluntary code of practice but unfortunately not all anglers and proprietors abided by this. Indeed the effect was relatively insignificant except in the Haaf fishery where, commendably, all fish were returned. As the policy was clearly not going to get universal acceptance, we instead asked for restraint with an absolute maximum of no more than two fish to be retained in any 24hr period with all fish over 3lb being returned. There has been mixed success with this policy in terms of increasing the number of fish left to spawn but take up is not universal. Indeed it may have had the effect of more fish being killed than would otherwise have been the case as the inference is that it is sustainable for everyone to take a brace of fish every time they visit the river. It is also impossible to broker an agreement with the net fishery if anglers are allowed to retain some of their fish.

The Board now feels that we need to take decisive action to ensure we have more robust sea trout stocks in the future and has concluded that we need a period of zero killing to boost stocks.

There is already some evidence of the effect of catch and release within the resident population of fish on the river. In 2004 some fisheries began to opperate a 100% catch and release policy on Brown trout on the river and this has now been taken up by most (although not all) of the anglers and fisheries on the river. The effect has been dramatic and the Annan now has a reputation for offering some of the best wild brown trout fishing in the UK.

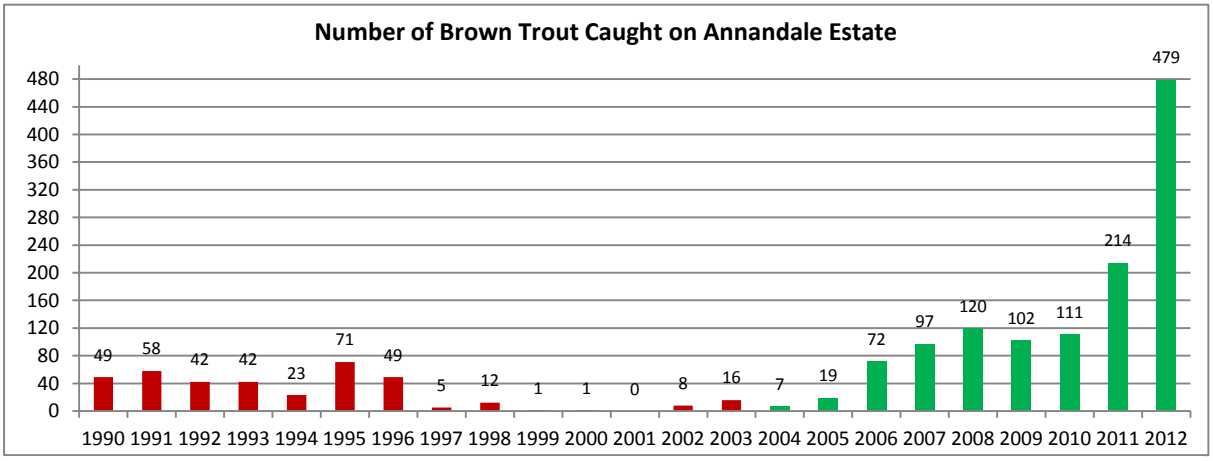

Fig iv Brown trout catch return from Annandale Est

As can be seen in Fig iv it would appear that there has been a dramatic affect on this fishery since the rules were changed that all brown trout should go back. It should be noted that a proportion of these fish will be recaptures. In many ways brown trout are slightly easier to manage than sea trout as there whole life is within the river. There are many many other factors that affect sea trout, principally at sea that are not fully understood but the concept that catch and release can, over time, have a marked impact on fisheries returns is sound.

Evidence that Significant Action is Needed.

It is insufficient just to look at the data and deem that, what many may regard as drastic action is required. To aid in the thought process there needs to be some methodology. To this end we are indebted to Marine Scotland who have produced a rod catch assessment tool which looks at migratory salmonids stock levels and helps to determine if exploitation should be reduced. The tool was developed under the auspices of NASCO (the North Atlantic Salmon Conservation Organisation) and although aimed at salmon is entirely appropriate for use in sea trout fisheries with adaptations for their different life histories.

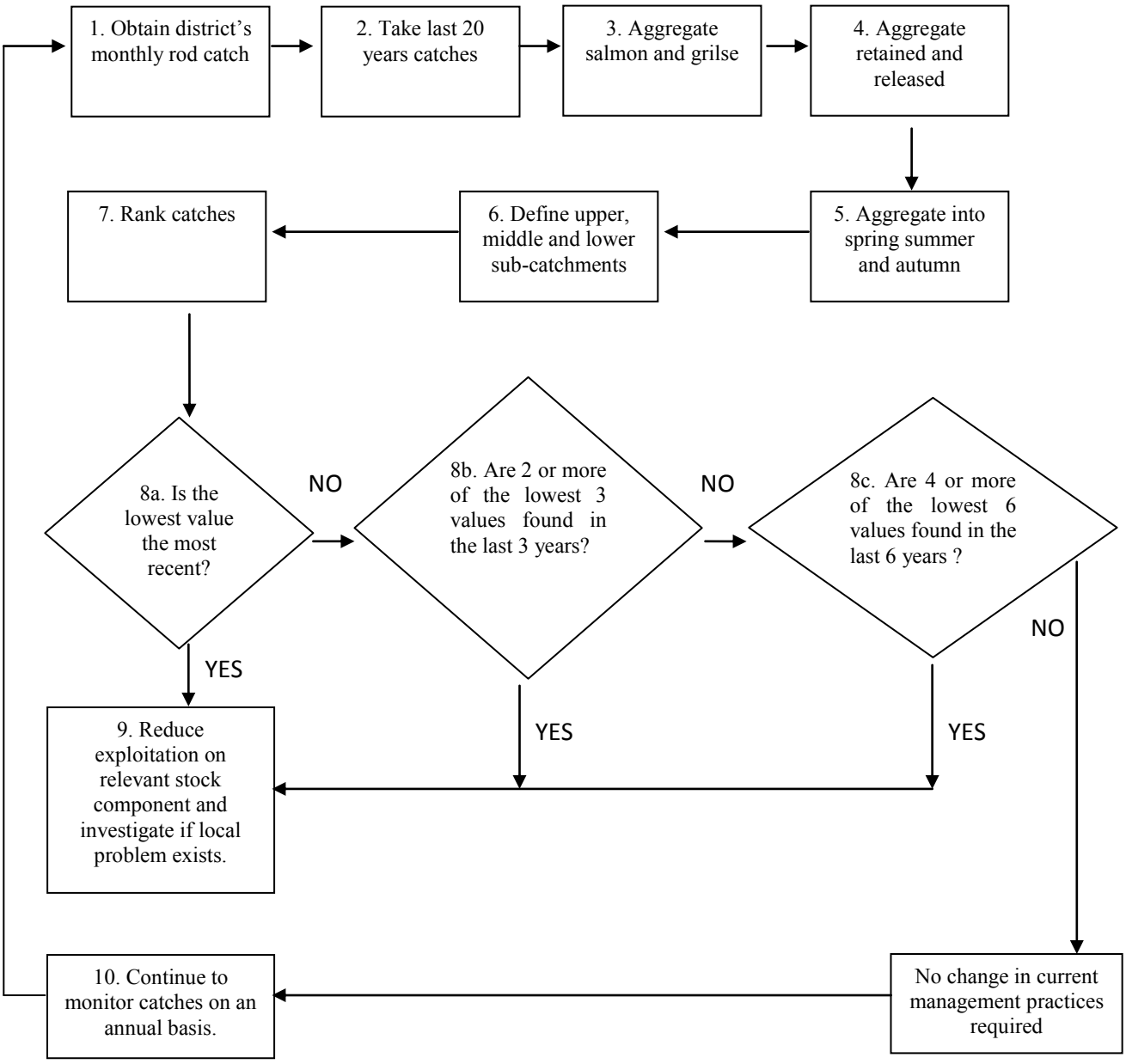

Fig v Marine Scotland Rod Catch tool (Extracted from EU-UK (SCOTLAND): FOCUS AREA REPORT ON MANAGEMENT OF SALMON FISHERIES

From the data we can clearly see that over the last six years five of the lowest catches on record over twenty years have been recorded. This should trigger a management response by reducing exploitation.

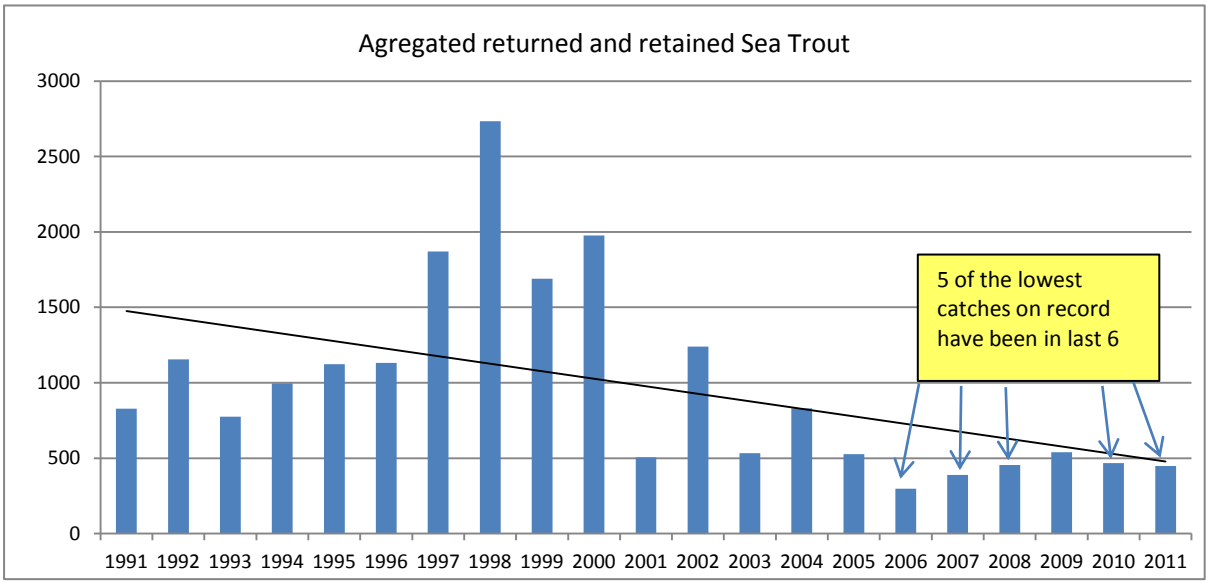

Fig vi Aggregated Scottish Government Data displaying results of Rod Catch Tool

The lowest catches on record were in 2006 but although there has been a small increase since then it is hardly dramatic and is as likely to be due to fishing conditions as anything else. It should be noted that the low catch recorded in 2001 in fig vi is artificially low as much of the river was closed during the main sea trout fishing season due to biosecurity measures introduced during the Foot and Mouth outbreak. The rod catch tool requires only 20 years of data to be analysed but if we were to apply it to the whole data set from 1952 the same result would appear. It is very clear that Annan sea trout stocks are at their lowest ebb and more importantly have been for some time. Even more worryingly there is some evidence that the trend has now been generally downwards for a couple of decades (with some short periods of recovery such as a four year period in the late 90s).

What would the effect of the release of fish be?

In order to have robust fisheries we must maximise the number of eggs deposited each year. The release of fish will achieve this.

Fishery	no fish	weight	85% female	Annan Origin	weight of fish	egg deposition
Rod and line retained	188	184.2	159.8	159.8	156.57	**281,826**
Rod and line released	259	283.3	220.15	220.15	240.805	**433,449**
net fishery	590	676.2	501.5	167.1667	191.59	**344,862**
Total						**1,060,137**

Table i Potential egg deposition from fish caught in 2011

Table i extrapolates out the number of eggs that could have been laid in the Annan system should all of the fish have been released in 2011. There are a number of assumptions which have been made. We know that the majority of sea trout are hen fish. What this proportion is will vary from year to

year but 85% seems a reasonable figure. We know the net fishery is of a mixed stock type but we have little idea what proportion of the fish caught are Esk fish, Eden fish or Annan fish. In the absence of this knowledge we have simply attributed one third to each river. The number of ova laid by individuals varies greatly but from the small amount of hatchery work that has been done with sea trout on the Annan an average of 1800 ova/ kg is normally yielded. We can see from this table that the contribution of voluntary catch and release is already significant at about 400,000. If we were operating full release there would have been something in the order of an additional 600,000 ova deposited in the gravels of the Annan system in the autumn of 2011.

Clearly the breakdown will vary from year to year, mainly depending upon fishing conditions which can favour the rod fishery over the net fishery in some years and vice a versa. It would however be difficult to argue that effect on egg deposition would not be significant.

An additional factor has to be included when we talk about catch and release of sea trout, as compared to salmon. Salmon are generally larger and produce significantly more ova when they spawn. Sea trout are smaller and the yield per individual fish will be lower. However salmon generally die after spawning (the numbers that survive are relatively insignificant). Sea trout on the other hand can survive to spawn many times. A high percentage of fish released by any fishery will not only survive to spawn in the year they are released, they will also survive to spawn in subsequent years. Over their life time sea trout have the capacity to introduce more ova to a system than salmon can; if only they are allowed to. Therefore the effect of catch and release in one year will compound itself into subsequent years and further increase the amount of ova deposited each year.

What would be the effect on the fishery

The order would make it an offence to retain any sea trout (including herling/finnock) within either the net fishery or the rod and line fishery at any time of year. The order would have a sunset clause in it which would mean that the legislation would revert to the current situation after five years.

It is inevitable that there will be some negative economic effects during the catch and release period. The commercial net fisheries will not be allowed to sell any sea trout they catch, indeed they will all have to make sure they operate their nets in such a way that fish can be released. The rod and line fisheries may see a reduced number of people attending to fish for sea trout, though it must be borne in mind that there are a decreasing number of people visiting these fisheries anyway, due to the poor quality of the fishing during sea trout time.

The economic effects cannot be ignored but at the moment we appear to have a sustained decrease in the abundance of sea trout in the Annan (and the whole of the Solway for that matter) and continuing as we are is not going to help matters.

What else will the Fisheries Board be doing?

Catch and release is an important strategy to help the sea trout stocks recover but it is not the sole action that the Board will be considering. For many years the Board has delivered habitat improvement programmes across the catchment and will seek to continue to do so. Preferred sea trout spawning and nursery habitats tend to be in the smaller burns around the catchment. Many of these smaller burns are the most prone to habitat degradation and this may be one of the many underlying reason why sea trout numbers have dwindled over the last few decades. For the foreseeable future the Board will target these types of habitats for improvement whenever it has the resources and ability to do so. This work is ongoing already as can be seen in fig vi. In this instance the fish pass constructed at the front of this culvert has opened up 4-5 miles of spawning and nursery habitat for young trout. This was installed with assistance from Iberdrola in August 2013. This form of habitat expansion in small burns will increase the number of smolts leaving the river and contribute, in the long run, to more fish returning.

Fig vi fish pass in forestry culvert

Predation of both young fish and adults in the smaller burns by mink may well be an issue. The Board is running a mink scheme, and has for a number of years. We have successfully removed mink from large sections of the upper river. But coverage of the whole river is proving more difficult. We need more help with this and would welcome any help from volunteers to increase the trapping effort.

What **will not** be considered at the moment is any hatchery intervention. The debate around hatcheries for both salmon and sea trout has gone on for some time but there is a general consensus amongst the vast majority of fishery biologists in Scotland and further afield is that enhancement of a fishery through the release of young fish is likely to have little positive effect. With sea trout it may even be damaging as we may affect the life choices that young trout will take if we keep them in captivity so instead of taking on a migratory lifestyle they will become resident fish. It should be remembered that if we remove fish and put them in a hatchery we are depriving the river of brood stock that would have spawned naturally and are not necessarily 'creating' extra fish.

How to take part in the Consultation

Anyone who wishes to make representations about this application should do so, in the first instance through the Clerk to the Fishery Board, Mary Colville. This should be in writing either by:

E-mail mary@annanfisheryboard.co.uk ; or

By post to
The Clerk
River Annan and District Salmon Fishery Board
Fisheries Office
St Ann's
Lockerbie
DG11 1HQ

In addition to this the Board will be holding an open consultation event where anyone can turn up to discuss the proposal and, if they wish, make representations in favour or against the proposed application. This event will be held on Friday 13th of September at Lockerbie Town Hall from 3:30PM to 6:30PM.

All representations made will be assessed by the Board at its October meeting and submitted as part of the application should the Board decide to proceed with the application.