

**ADVISORY VISIT TO THE RIVER DEVERON,  
ABERDEENSHIRE, ON 15 - 16 November, 2006**

**Undertaken on Behalf of the Wild Trout Trust**



**Frontispiece: River Deveron at Rothiemay (16 Nov 2006)**

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## 1.0 BACKGROUND

The River Deveron District Salmon Fishery Board, in Aberdeenshire (<http://www.deveron.org/rivers.html>), requested from the Wild Trout Trust a follow-up advisory visit to the river primarily because of continuing decline in catches of sea trout. Previously, advisory visits had been made to the Deveron tributaries, the River Bogie and the River Idoch (or Burn of Monquhitter), by Ron Holloway (17 & 19 May, 2002), on behalf of the Deveron, Bogie and Isla Rivers Trust. His reports suggested some practical measures that could be taken to improve river habitat, including fencing to protect the banks from over-grazing. The follow-up visit which took place on 15 – 16 November, 2006, gave an opportunity to consider aspects of fishery management related to sea trout stocks, including stocking, which the Fishery Board is currently undertaking in conjunction with the local Deveron, Bogie and Isla Rivers Trust.

The Wild Trout Trust was established in 1997 by a small group of people dedicated to the idea that ailing populations of wild trout can be given a helping hand. It provides practical guidelines and encourages riparian owners, angling clubs and community volunteer groups to instigate their own habitat restoration projects, not only to protect and improve stocks of wild trout, but to deliver many gains to local bio-diversity. The Trust continues to grow in strength and now operates throughout the United Kingdom and Ireland. The consultant fee for the advisory visits is often paid for through sponsorship, with only travel expenses falling to the recipient. For more information contact the Trust's Projects Co-ordinator at [projects@wildtrout.org](mailto:projects@wildtrout.org), or in writing to: The Wild Trout Trust, PO Box 120, Waterlooville PO8 0WZ (tel: 023 9257 0985).

## 2.0 GENERAL DESCRIPTION

The River Deveron is an important salmon, sea trout and brown trout river (catchment area c. 1266 km.<sup>2</sup>), lying in the north-eastern corner of Grampian, in the western part of the District of Banff and Buchan. The Deveron rises on the edge of the Grampian Mountains, South of Cabrach. From its source in open heather moorland, the river flows at first through land predominantly used for grazing and for conifer afforestation. After being joined by the major tributaries the Bogie and Isla near the town of Huntly, the surrounding land use changes to mainly arable farming as the river then flows through Turriff to reach the Moray Coast at Banff.

Like its close neighbouring river to the east, the Ugie, around half of the catchment of the Deveron lies within a designated Groundwater Nitrate Vulnerable Zone, according to the Scottish Environmental Protection Agency (<http://www.sepa.org.uk>). The River Isla also is a designated Sensitive Area under the Urban Wastewater Treatment Directive, although the water quality overall in the Deveron is considered by SEPA to be "good." The main pressures on its water quality are diffuse pollution from agriculture, forestry and sewage discharges. In the past, SEPA has had little regulatory control over diffuse pollution, but has led, or collaborated in, a number of initiatives to help further best agricultural practices. Now, under the EU Water Framework Directive and its accompanying legislation in Scotland, the Water Environment and Water Services (Scotland) Act 2003, SEPA has more authority to promote measures to effect further improvements in water and environmental quality.

### 3.0 ADVISORY VISIT

The advisory trip comprised a brief tour around various known trout spawning burns entering the middle to lower River Deveron and then centred on the River Bogie catchment. It was carried out in the company of Malcolm Hay, Chairman of the Deveron District Salmon Fishery Board, Jimmy Minty, Head Water Bailiff, Norman Wilson, Chairman of the Huntly Angling Association and Harvey Grant of Netherdale Estate. A short meeting was also arranged with Robin Vasey, Advisor to the Deveron, Isla and Bogie Rivers Trust (DBIT). All of the above people provided invaluable information and experience about the River Deveron. Robin Vasey supplied copies of earlier reports, electro-fishing data and helped with other observations by e-mail.

Most of the burns visited were fairly narrow (< 5 m), which itself would suggest they are more suitable for trout than for salmon, although both species are known to occur in some of them. Some sections of burns flowing through patches of broadleaf woodland had natural courses with a regular pool and riffle conformation (Plates 1 & 2). However, as expected in this intensively farmed area of the country, most of the burns seen were straightened channels, draining pastoral and mixed arable fields. There was good overall availability of gravel, but much of it was thinly coated with silt and the water was slightly turbid. This could have been due to drainage from nearby ploughed and freshly farrowed fields, following wet weather. However, one burn which was running clean through woodland was stated to have intermittent problems with dirty discharges from a vegetable washing plant.



**Plates 1 & 2: Natural water courses – Meaggie (Maggie) Burn and Cunning Burn**

Fortunately, most of the straightened burns had been fenced several metres back from the banks, allowing thick growth of long grasses, bushes and other vegetation (Plates 3 – 6). The banks were relatively stable, with little evidence of the shearing and sloughing effects that can occur when fields are farmed right up to the edges of water courses. Streamside habitat enhancement through fencing was strongly advocated for the River Deveron in two reports by Alison Espie (2001) and Colin Carnie (2001) commissioned by the Fishery Board. The Board and the DBI Rivers Trust have actively promoted this concept among farmers. Unfortunately, the government agri-environment schemes that provided the necessary priming funding are suffering now from severe cutbacks.

Several of the canalised burns were gradually reverting to a more natural meandering channel conformation that should be beneficial for fish production. There tends to be a cyclical pattern of fish production between successive drainage operations. At first, the shallow gravelly channels are reasonably good for spawning and then for fry, but are unable to hold many parr, or resident trout because they lack depth diversity and cover. However, conditions gradually improve for larger fish, until the diggers come along and start the process yet again.



**Idoch Water (Cuminestown)**



**Idoch Water (Balquindachy)**



**Idoch Water (Mill of Colp)**



**Monquhitter Burn (Millfield)**

**Plates 3 – 6: Examples of straightened burns, but these were usually fenced and had well-vegetated banks.**



**Plate 7: Lovie Quarry – discharges to Monquhitter Burn**

In addition to the widespread drainage from newly ploughed or farrowed fields in the Deveron catchment, two open-cast sand and gravel quarries are known to release turbid water, resulting in excessive silt deposition. One of these sites was visited (Plate 7). The quarries have large sedimentation lagoons, but larger amounts of silt will escape at times of high run-off. Obvious point sources of pollution such as these quarries can be targeted regularly by SEPA, but diffuse agricultural pollution from fields is harder to address as so much depends on current farm practices.

The next part of the catchment that was visited was the Idoch Water and its upper part, the Monquhitter Burn. In May 2002, Ron Holloway carried out a Wild Trout Trust advisory visit on the lower Idoch near the Turriff Showground area (Plate 8). He found the stream habitat was fairly bare and suggested that rock current deflectors be installed to vary the depths and flow patterns, to improve adult holding capacity and create cleaner areas of gravel for spawning. However, the deflectors were not installed, mainly because of the severity of local spates and the risk of significant bank erosion. From a trout fishing perspective, some judicious planting of streamside willows along the barer sections of banks would add riparian cover for larger fish among the protruding roots, but the Idoch is already an important salmon spawning tributary, so there may be a reluctance to interfere with it.

A simple fish ladder which the DBI Rivers Trust has installed over a rock shelf below a bridge in the Monquhitter Burn also was inspected. It seemed to be well-sited to attract upstream migrant fish and was functioning well.



**Plate 8: Turriff Burn (Idoch Water)    Plate 9: Fish Ladder in Monquhitter (top of Idoch Water)**

The next stage of the advisory visit was to inspect the River Bogie catchment. The Bogie is an attractive small river with a natural, unspoilt appearance. It used to have a very good reputation for its stocks of brown trout, sea trout and salmon. Norman Wilson said that the middle to upper reaches are hardly fished nowadays, compared with earlier years. There is a general concern throughout the Deveron that the brown trout population has declined substantially over recent decades. The same comment is made about headwater areas of the River Tweed and other Scottish rivers. However, there has been a movement of trout anglers towards stillwater rainbow fisheries and fewer people seem prepared to walk as they used to in order to fish. There are far fewer youngsters fishing either. Therefore, it is becoming harder to assess the extent to which populations of river trout have actually declined. Electro-fishing surveys do not indicate a general shortage of juvenile trout.





**Plates 10 & 11: Views of the Water of Bogie**

Alison Espie (2001) highlighted a number of problems present in the Bogie during her extensive habitat survey. Most of these problems are being addressed by the Fishery Board and the DBI Rivers Trust. They include unfenced and over-grazed sections of banks, over-dredging and draining of side burns, chronic problems with excessive siltation and impacted gravel, over-shading by broadleaved trees and, much more significantly, by intensive coniferous afforestation and some barriers to fish migration. A large conifer plantation straddles the Lag Burn (Ness Bogie), one of the best spawning tributaries, and sections of hillside showed signs of recent planting. It is essential that the management of the new and the older forestry areas complies fully with the Forests and Water Guidelines ([www.forestry.gov.uk/newsrele.nsf/](http://www.forestry.gov.uk/newsrele.nsf/)). Giant Hogweed has been a problem on the river banks but is now sprayed. Feral mink remain common in some areas of the Deveron, although said to be less abundant nationally now. The Rivers Trust has recently improved fish passage arrangements on the Lax Burn (Plate 12) and is vigilant over the threat of channel blockages due to forestry and now wind farm operations.

The substantial wind farm scheduled for construction on Clashindarroch is liable to cause significant problems for many local burns (46), especially during the anticipated lengthy road construction and turbine installation phases, which will span several spawning seasons. Salmon and trout populations are resilient against natural catastrophes in fresh water occurring as separate events because of their divided migration life history strategy. The spread of ages at migration to the sea, of marine growth periods and of timing of return migration and extended spawning age longevity (seen especially in sea trout) ensures that not all eggs or individual fish are present in one place at any one time. However, chronic upsets to spawning burns spread over several years have the capacity to destroy fish stocks. The Fishery Board and Rivers Trust are very aware of this fact and will continue to press the windfarm developers for appropriate care.



**Plate 12: Improved Dutch Bridge in the Lax Burn (Coynachie)**

The Bogie was also visited in the vicinity of Huntly Sewage Treatment Plant. Fortunately, the river in this section is quite steep and the turbulent flow appears to disperse the effluent quickly and will assist in the process of its re-oxygenation. However, there have been complaints locally that the sewerage infrastructure is prone to overloading, resulting in poorer water quality at times, although it appeared to be satisfactory during the November visit and there was no evidence of sewage fungus downstream of the discharge pipe. SEPA will be able to provide information on water quality status at this site and any plans to upgrade the treatment facilities.





**Plate 13: A disused mill weir in the Bogie by Huntly eased for fish passage**

A short distance from the sewage treatment plant is the site of a disused mill weir that has been partly broken down to permit easier fish passage. The Bogie, like the main River Deveron itself, used to feature a number of weirs that supplied water by lades to operate water wheels at mills. Most of these weirs have been removed or eased. In this process, deep pools which used to be popular sites for angling have sometimes been lost. Apart from the loss of some pools, the easing of obstructions may have had a detrimental effect on resident brown trout stocks, through increasing juvenile competition from migratory fish.

### **3.1 The Hatchery**

A brief visit was made to the Fishery Board and DBI Rivers Trust hatchery and rearing tank facility in a polytunnel, at Drummur, near Keith. Wild brood fish are obtained by electro-fishing and held in tanks until ready to strip. The ova are incubated at ambient temperatures and early fry and autumn parr are planted out at selected stocking locations. During the advisory visit, questions were asked about best practice for stocking. Guidance on brood stock selection, genetics and stocking is available from Fisheries Research Services. The FRS pamphlet "Salmon and Sea Trout - To Stock or Not (FRS Information Pamphlet No 22, 2003), available from the Freshwater Laboratory at Pitlochry, or the Marine Laboratory in Aberdeen, outlines pros and cons of stocking, options for how to proceed and likely success rates. It features a useful flow chart to follow to help design, or reject, stocking programmes.

The Wild Trout Trust does not promote stocking, but instead favours improving environmental conditions to allow trout populations to develop naturally. However, it accepts that stocking has a role in utilising waters that would not otherwise be populated, or for augmenting some populations, assuming that the causes of low recruitment cannot be dealt with. If the habitat is suitable for juveniles but there is a shortage of spawners, it is better to stock ova or early fry. Egg boxes can be planted in permeable gravel, or streamside incubation units can be set up in areas to be stocked, where it is practicable to do so. In this way, the emerging fry are adjusted to local water temperature and chemical conditions. Electro-fishing surveys need to be carried out before and after developing a stocking strategy, rather than simply pouring fry into waters that are already populated to their carrying capacity (see the WTT Wild Trout Survival Guide – supplied with this report).

## **4.0 FURTHER BACKGROUND**

### **4.1 Electro-fishing Surveys**

Following the advisory visit, Robin Vasey kindly provided quantitative electro-fishing survey data. A preliminary survey of the distribution and abundance of juvenile salmon and trout was undertaken from July to September in 1991 by Ruth Matthews and Callum Sinclair. As expected, trout were widespread throughout the catchment, being present at 65 out of 71 sites visited. The densities of trout were often high by Scottish standards. Also, there was no detectable difference between juvenile densities at sites that were accessible to sea trout and inaccessible sites that depended on ova from resident brown trout.

Quantitative electro-fishing surveys have been undertaken annually in the Deveron catchment since 2001, using the standardised protocols developed by the Scottish Fisheries Co-ordination Centre (SFCC). Few of the selected sites were visited in 1991, so direct comparisons are not readily made with the first series. There was a lot of variability in the densities of juvenile trout found at individual sites from year to year, but continuing high densities overall. The results have to be considered together with knowledge of any stocking from the hatchery that has taken place at individual sites. However, the overall findings do not suggest that there has been a widespread drop in recruitment levels of trout.

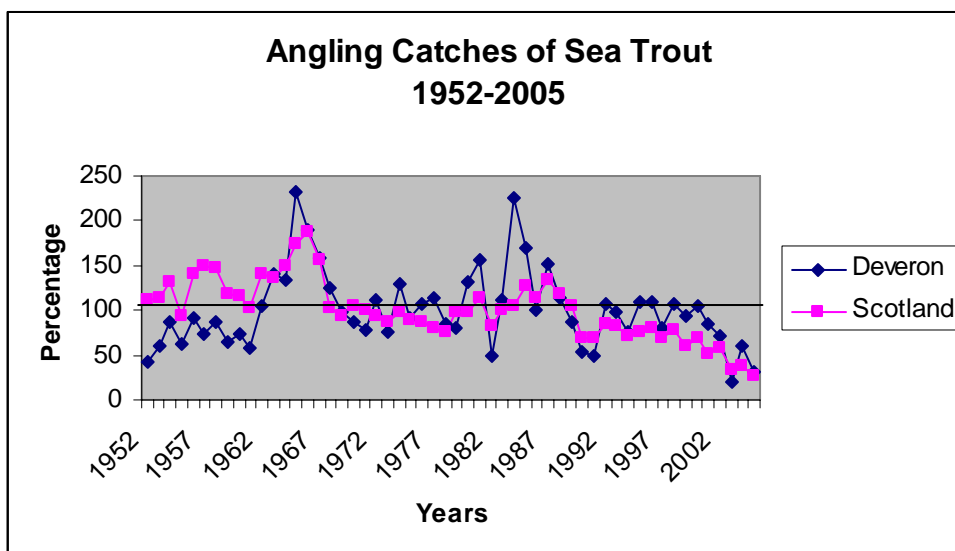
#### **4.2 Sea Trout Catches**

As already stated, recent annual catches of sea trout made by anglers fishing in the River Deveron have been poor. However, there are important caveats that need to be considered before assuming that catches are a close indication of underlying stocks:-

- Angling catches vary with weather conditions and, in particular, with river flows. Dry summers tend to yield poorer catches and wet summers better ones, although very high river flows can be counter-productive.
- Commercial netting for sea trout is now minimal, potentially freeing greater numbers for angling.
- Permitted angling methods and also bag and size limits may have changed over the years.
- There have been uncertainties over the minimum weight of sea trout to record and in particular whether “finnock” (herling/whitling) should be included.
- “Catch and release” for conservation purposes has grown rapidly in acceptance by anglers. “Retained” and “released” sea trout are now reported separately and optionally may be combined as the total catch. However, there is an element of doubt in doing this because unknown numbers of sea trout were released in the past, especially coloured and small fish.

These complicating factors apply to varying extent throughout the country and add to the difficulty in analysing catch records over time. In spite of these problems, broad trends can be identified within the FRS catch database.

For the purposes of this advisory report, sea trout angling catches reported for the River Deveron are shown together with the all-Scotland catches (Fig. 1). Both sets of data are shown as percentage deviations from the long-term mean catches (1952-2005) to bring them to a common scale. Note that the graphs represent the combined catches of “retained” and “released” sea trout from 1994, when the catch reporting forms were altered to take account of “catch and release.”

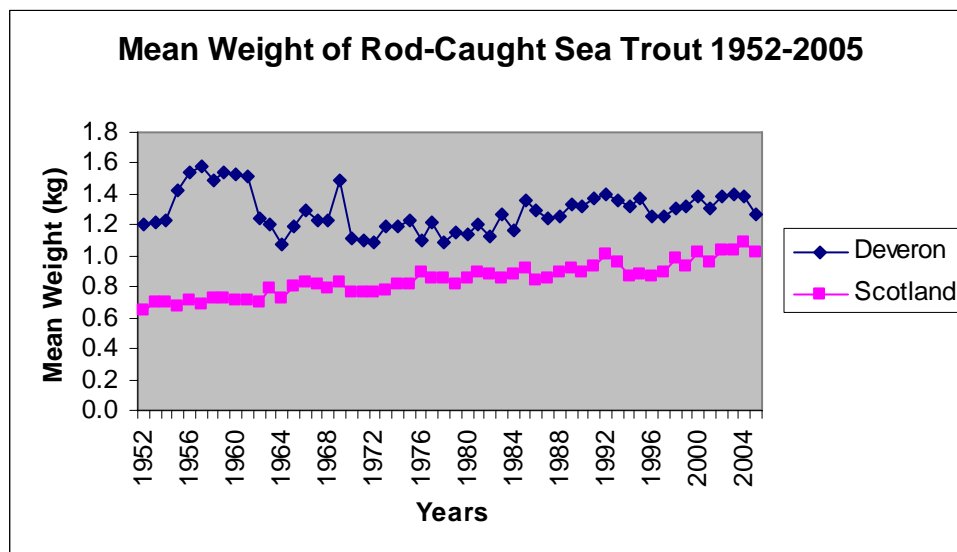


The two graphs show wide annual fluctuations, but are very similar in pattern and trend. Both the Deveron and the national datasets show peak periods of catches in the mid-1960s and then again in the late 1980s. Throughout most of the 1970s and 1990s, catches were about average in the Deveron, and a little lower than average for All-Scotland. However, the last three or four years have provided unprecedented low levels. In 2003 and 2005, the Deveron catches were only 11% and 13% of the long-term average, compared with 32% and 21% respectively for Scotland as a whole. Preliminary reports for 2006 are that sea trout angling catches in the Deveron and throughout most of the country once again were poor.

The neighbouring River Spey also reports declining rod catches of sea trout in the last decade. The December Monthly Briefing of the District Fishery Board ([www.speyfisheryboard.com](http://www.speyfisheryboard.com)) states that catches showed some improvement in 2006 compared with the previous year, but remained below the last 10-year average.

Of course, the numbers of sea trout reported caught are only part of the picture. It is now widely considered unethical to retain large catches of “finnock” (herling, or whitling), whereas large bags were commonplace, especially in some east coast estuaries. In some cases, fishery owners added “finnock” to their sea trout totals, consequently the annual mean weights were consistently low. Now, with tighter bag and size limits commonly being introduced, the recorded numbers of sea trout are highly likely to fall, while their mean weights should rise. To examine whether changes in reporting of “finnock” could be contributory to the overall catch decline, the annual mean weights of sea trout reported from the Deveron and nationally are shown in Figure 2. The Deveron graph shows an unexplained blip in mean weights at first, then a slight rise occurring since the 1970s. The recent catch pattern in that river does not suggest that there has been a “finnock” effect since the catch forms were altered in 2004 (also, the record lowest catch was a year earlier in 2003). On the other hand, the all-Scotland graph shows a gradual rise in annual mean weights throughout the series. The underlying cause of this long-term increase in reported mean weights is not known, but it is not believed to be due to better marine growth. A gradual reduction in reported or allowed catches of “finnock,” and increased escapement of larger sea trout due to declining netting activity, are other possibilities. However, note also that the annual mean weights of the Deveron sea trout are

consistently larger than those of the all-Scotland series, suggesting that “finnock” have never featured heavily in Deveron catches.



## 5.0 CONCLUSIONS

It is clear that a great deal of environmental work has been and is being carried out in the River Deveron catchment. Localised problems resulting from intensive farming, forestry, gravel extraction, growth of housing etc, and now concerns over the development of very large wind farms, are being challenged. In spite of a number of problems for fish populations, the catchment looks healthy overall and SEPA reports good water quality. Electro-fishing surveys carried out by the Deveron, Bogie and Isla Rivers Trust at monitored sites indicate sustained levels of juvenile trout and salmon stocks. Clearly, in view of these results, the use of stocked fish from the hatchery should be carefully targeted to places where they will be most useful and not result in overcrowding of the habitat.

Most of the spawning burns visited during the advisory visit had been canalised for agricultural drainage, but were showing signs of natural recovery of channel sinuosity. Fencing provided to assist the development of riparian buffer zones against intensive farming and over-grazing is allowing bankside growth and stabilisation and will sustain a variety of wildlife. Chronic problems of excessive silt erosion from fields and deposition on river gravels that were identified in previous fishery surveys are still evident. Fertiliser run-off is another long-standing problem that can only be addressed through improvements in farming practice and cost-efficiency. However, no new problems came to light that would help to explain the recent decline in sea trout catches.

The apparent longer-term decline of Deveron brown trout stocks might be linked with gradual loss of deeper water habitat. However, all over the country it is apparent that there has been a gradual loss of river fishing skills. Hard-won local experience is being eroded by the convenience of stillwater ponds with their large, stocked rainbow trout. Fewer kids fish for wild trout now and the average age of angling club

members is getting older. Not many will clamber up and down river banks like they used to. Even so, experienced anglers spoke about far fewer rising trout and a loss of river fly-life diversity and abundance, as they do elsewhere, but hard information was lacking. SEPA should be invited to comment on the status of the invertebrate fauna in the Deveron and whether there is a need for further biological as well as chemical investigations to help monitor the environmental quality of the river under the new arrangements following the Water Framework Directive.

The review of annual sea trout rod catches in the River Deveron undertaken as a follow-up to the Wild Trout Trust advisory visit showed that the local pattern of decline was similar to the national trend. Neighbouring rivers including the Spey have also been hit by poor catches. The widespread nature of the recent decline, and of previous periods of better annual catches that occurred throughout much of the country, suggests that changing countrywide weather conditions could be involved, especially runs of particularly wet or dry summers. Recent warmer, drier summers and mild, wet winters may not have been conducive for sea trout catches or stocks. Moreover, too little is known yet about the main factors that govern survival levels of sea trout around the Scottish coasts. Infestations of sea lice from salmon farms are a known problem on the north-west coast, but changes in marine predation levels and in seasonal food availability and abundance may be of more general significance.

In 2004, in response to current concerns over poor sea trout rod catches, the Spey District Fishery Board instigated a Sea Trout Conservation Policy for anglers, aiming to increase the numbers of mature fish available to spawn. This policy has now been reviewed and will be continued in 2007. The Deveron Fishery Board may wish to reconsider its own policies concerning sea trout conservation, while bearing in mind that tighter bag and size limits are likely to exacerbate the decline in catches, although helping to improve stocks in the longer-term.

Fortunately, east coast sea trout in general are relatively fast-growing, quick-maturing fish, indicating a high potential for rapid stock recovery when conditions improve. Deveron sea trout were, and hopefully still are, faster-growing than most. In the meantime, it is essential to conserve the wild stocks that remain and continue to monitor and, where possible, improve conditions for juvenile survival in the spawning burns, as the Fishery Board and Trust are doing.