

6. Present Management Structures and Activities

6.1. Management Structures

6.1.1. Ayrshire Rivers Trust

Ayrshire Rivers Trust (ART) was established in 2000 with the following mission statement:

- *To preserve a valuable part of our natural heritage for the enjoyment of current and future generations, through the conservation, enhancement and development of our freshwater habitats and the fisheries they support.*

ART employed its first staff member in 2002 and has since expanded to employ two full-time scientific staff members and a part-time administrator. The trust has a number of roles including scientific data collection and monitoring, habitat restoration, educational programmes, biodiversity enhancement and the provision of management advice.

ART is a full member of River and Fisheries Trusts of Scotland (RAFTS)(<http://www.rafts.org.uk/>) and the Scottish Fisheries Coordination Centre (SFCC)(<http://www.sfcc.co.uk/>).

Ayrshire Rivers Trust Operating principles

In order to ensure that the strategy for sustainable management of fish stocks and aquatic habitats can be implemented effectively, it is essential that the governing principle of primacy of interest be recognised and wholeheartedly adopted by the Trust. The Trust will be the only organisation which has as its sole interest the collective welfare of *a//* river catchments across Ayrshire.

In exercising this principle the Trust will need to embrace a wide range of conservation and development functions, which will include direct and indirect provision for research, advisory services, guidance, species diversification and skills development. The Trusts guiding responsibility will be to champion the cause for the environmental well-being of Ayrshire's natural watercourses.

In assuming this responsibility, the Trust will act to achieve its Strategic aspirations through the adoption of appropriate roles; some actions will be wholly initiated and delivered by direct action while others may involve delegating, facilitating, influencing and supporting others.

6.1.2. District Salmon Fishery Boards

There are currently four District Salmon Fishery Boards (DSFB's) within Ayrshire, responsible for managing salmon fisheries on the Rivers Stinchar, Girvan, Doon and Ayr. The Irvine (which includes the River Garnock) District has never had a DSFB.

Roles of the DSFB's include:

- Protection and improvement of salmon and sea trout fisheries within their district
- Stocking of salmon and sea trout
- Collection of financial assessments from fisheries within their area
- Appointment of bailiffs to enforce salmon legislation

The Board of each of the DSFB's consists of representative members of proprietors and angling clubs from within the district. In Ayrshire the DSFB's have no full-time staff members rather they rely on the voluntary service of board members and bailiffs. The Ayrshire DSFB's were all established in the 1860's although there may have been periods when they were inactive. ART attend DSFB meeting on a regular basis providing scientific and management advice.

6.1.3. River Irvine Angling Improvement Association

There is a history of angling Improvement Associations on several of the Ayrshire rivers. The River Irvine Angling Improvement Association (RIAIA), which was established in 1950, is the only one still active. Its membership consists of several of the angling clubs on the river, although not all. The RIAIA is funded by a levy based on club membership. In recent years it has been successful in securing funding for electrofishing and habitat surveys in the river. The association meets on a regular basis. ART attends these meetings and works with the association on a range of issues affecting the river.

There is a Freshwater Fishery Protection Order ¹ in place covering the Irvine, Gogo, Noddsdale and parts of the Garnock catchment.

6.1.4. Proprietors/Angling Clubs

Individual proprietors and angling clubs manage their own fishing's. There are many angling clubs within Ayrshire, including some long established organisations. Modification of the riverine habitat for angling purposes is a feature of many of the Ayrshire rivers and in that respect angling clubs have often been able to exert the same influence on their waters as many of the individual proprietors in private river beats.

There is an active branch of the Pike Anglers Club in Ayrshire. They promote pike angling and conservation across Ayrshire.

6.1.5. SEPA

Whilst SEPA has no direct fishery management role it is responsible for issues such as water quality and WFD imperatives, and since the implementation of the Controlled Activities Regulations in 2005 ² it is now responsible for issues such as abstraction, engineering works and fish passage. The role of SEPA in delivering many of the management actions identified in this plan is of fundamental importance.

6.2. Management activities

6.2.1. Data collection and monitoring

This is primarily a role fulfilled by ART. ART staff members are trained to SFCC standards for electrofishing and habitat surveying. Surveys are completed to SFCC protocols and data collected is stored in SFCC databases, locally in the ART office and centrally with SFCC at the FRS Freshwater Laboratory, Pitlochry.

Examples of the types of data collected by ART include:

Electrofishing

ART staff have carried out electrofishing surveys in every river and almost every tributary in Ayrshire. Main stem sites are surveyed using timed electrofishing surveys to assess salmon fry populations. Tributary sites are surveyed using semi-quantitative or fully quantitative density sites. A variety of sites are surveyed each year including core monitoring sites, which are surveyed at least once every three years, routine monitoring sites e.g. to monitor stocking success, and investigative sites. All electrofishing carried out by ART is for collection of data for local fisheries management purposes.



Identifying and measuring fish caught whilst electrofishing

Genetic sampling

Genetic analysis is a rapidly evolving and powerful analytical tool. ART were lead partners in the Atlantic Salmon Arc Project (ASAP) ³ which involved collection of genetic samples and genetic mapping of salmon populations in rivers across Western European seaboard. RAFTS members are also involved in collecting further samples for the SALSEA ⁴ project. This project will enable detailed genetic maps of salmon populations within individual rivers to be completed, proving information essential for the management of individual stocks present within catchments.

Fish trapping

ART completed a smolt trapping exercise on the River Doon in 2006. This provided invaluable information on smolt run timing, age composition, fish size and an estimate of smolt productivity. It also showed that there was a small but vitally important sea trout smolt production.

Scale reading

ART staff collect scale samples from a representative selection of juvenile fish during electrofishing surveys. Adult salmonid scale samples supplied by anglers or obtained opportunistically are also analysed. Scale reading is an effective way of aging fish and growth rates.



Habitat surveys

ART have completed full habitat surveys of the Stinchar, Girvan, Doon, Ayr, Garnock and a partial habitat survey of the River Irvine. These habitat surveys have been invaluable in providing baseline data for fisheries management and habitat restoration projects. Information on a wide range of parameters were collected including riparian vegetation, water flow and depths, substrate, erosion, pollution points and obstructions to fish migration.

Invertebrate sampling

ART pioneered the use of the Riverfly Partnership protocol to provide rapid biological information on water quality at electrofishing sites. This sampling technique was responsible for the discovery of a sheep dip pollution incident in the upper River Girvan in 2005.



Perla bipunctata, large stonefly nymph

6.2.2. Habitat restoration

ART have initiated several fencing projects designed to reduce the impacts of diffuse pollution and to restore habitat. ART has also worked in collaboration with farming advisory organisations such as FWAG on catchment scale projects. These projects have often arisen opportunistically rather than in any strategic manner but ART has been able to demonstrate significant improvements in fish and habitat quality as a result. The most comprehensive project undertaken by ART was on the Dyrock Burn, River Girvan where several kilometres of fencing have been erected.

Case Study: Habitat restoration

Water of Girvan Enhancement Project

The ART Girvan Habitat Survey 2003 identified that the Dyrock Burn was suffering from excessive grazing and trampling due to farm livestock access. Following successful funding application and negotiations with landowners ART were able to erect several kms of fencing in 2007. The transformation was remarkable. The photos below show the same view immediately after fencing (left) and 18months later (right). In the later photo the autumn spates and frosts had flattened the vegetation cover which had been extremely lush several months earlier.



ART biologists have a monitoring site at the lower end of the field pictured which had been surveyed annually since 2004. The results of the electrofishing results for the site are shown below (No fish/100m²).

Site GDY2	Salmon fry	Salmon parr	Trout fry	Trout parr
2004	0.0	1.2	2.4	2.4
2005	2.8	0.0	12.6	0.0
2006	0.0	2.0	6.0	0.0
2007	2.4	0.0	1.2	1.2
2008	18.5	0.0	9.3	1.3



The latest results are very encouraging with significant numbers of salmon fry found for the first time. Monitoring will continue at the site for a further three years. A nymph of *Ephemera danica* (Angler's Mayfly) was also found at the site, a first for ART biologists in Ayrshire.

Thanks to the project funders: Scottish Community Foundation (Fair Share Trust) and South

6.3. Bailiffing

This is a role undertaken by the DSFB or angling club bailiffs. Poaching has always been a significant problem in Ayrshire although its impact is considered to be in decline. At the present time poaching is considered to be under control with perhaps only the Irvine estuary presenting significant problems.

The Scottish Fishery Protection also provide assistance if available to investigate poaching in the marine environment.

6.4. Easing barriers to fish migration

There are many full or partial obstructions to fish migration in Ayrshire. ART, the DSFB's and other angling organisations have been actively involved in projects to remove or ease fish passage. However, much work remains in this area and this topic will be covered fully in later sections of this plan.

6.5. Exploitation control

In recent years there has been a dramatic increase in the adoption of catch and release as an important aspect of fishery management in Ayrshire, although, the level varies greatly from river to river and from beat to beat. ART has concerns about the overall level of exploitation of salmon in some rivers and with components of the stock in all others. Trout numbers have declined dramatically, particularly the sea trout catch. The grayling population in the River Ayr appears to be relatively sparse and although the current level of angler exploitation is low, it could be susceptible to over exploitation if that were to change. ART promotes the necessity for exploitation control as an essential management tool, particularly for threatened stock components or sea trout stocks and is working actively with fishery management organisations to raise awareness and to define policies.

6.6. Stocking

There is a long history of stocking with salmonids, including grayling, in Ayrshire. The rationale for stocking in Ayrshire has generally been to enhance fisheries or mitigate against fish losses due to pollution, or long term issues such as acidification or habitat loss due to the presence of obstructions. Stocking of salmon upstream of waterfalls, with a view to increasing the productive catchment area has been widely practised.

Stocking of brown trout in local rivers has been widespread for many years. This generally takes place in the lower (and more populated) reaches although not exclusively so. Farmed brown trout stocked in the area come from a variety of sources, including local fish farms. The provenance of the stock used has not normally been a consideration for those organising the stocking with cost and physical quality being the main drivers. ART continues to encourage interest in habitat improvements and stock management with a view to the development of self sustaining trout populations. However, the water quality issues currently affecting many of the smaller burns, particularly in lowland areas, mean that many are unable to support good trout populations. ART does recognised that current attitudes and practice regarding river trout angling in rivers, mainly in North and East Ayrshire, demand and depend on stocked fish. Stocking of brown trout in rivers has been lightly regulated in Scotland, in comparison to England ⁵, although the introduction of Scottish fish movement legislation 2008 ⁶ may lead to change.

6.7. Education programmes

ART run the highly regarded Salmon in the Classroom project in primary schools across Ayrshire ⁷. This project includes presentations on river ecology, educational games, rearing of salmon eggs in a controlled aquarium, and field visits to local rivers.

ART have also hosted Riverfly invertebrate workshops and salmon spawning walks.

Case Study: Education Projects

Salmon in the Classroom

ART has delivered the acclaimed Salmon in the Classroom project in many primary schools across Ayrshire. This project includes presentations on river ecology, educational games, an aquarium with salmon eggs which hatch into fry followed by field trips to release the fry and to study local fish populations. The pictures below show school children learning how to identify fish (left) and releasing the classroom reared salmon fry (right)



ART has developed the use of "beer coolers" to regulate water temperatures in the classroom. The project has received very positive feedback from almost all participating teachers as it fulfils many different curriculum aspects. For 2009 ART has produced a "Salmon in the Classroom ruler" which will be distributed to pupils, highlighting the salmon lifecycle and Ayrshire's salmon rivers.



This project has many funders including SNH, Local Authorities, Scottish Community Foundation (Fair Share Trust) Hadyard Hill Windfarm and private sponsors such as Spirit Aerospace.

References

1. The West Strathclyde Protection Order 1988. http://www.opsi.gov.uk/si/si1988/Uksi_19881516_en_1.htm
2. The Water Environment (Controlled Activities) (Scotland) Regulations 2005. <http://www.opsi.gov.uk/legislation/scotland/ssi2005/20050348.htm?lang=e>
3. <http://www.atlanticsalmon.org.uk/>
4. <http://www.salsea.info/>
5. Environment Agency (2003) National Trout and Grayling Fisheries Strategy <http://www.environment-agency.gov.uk/homeandleisure/recreation/fishing/38061.aspx>
6. <http://www.frs-scotland.gov.uk/Delivery/standalone.aspx?contentid=789>
7. <http://www.ayrshirerivertrust.org/salmon-in-the-classroom.htm>