SPAIN
Counting fish, counting genes, and making education count

The Asturias Region department of Environment, Planning and Infrastructure through the General Directorate of Biodiversity and Landscape has several systems for the quantification of salmonids in the most important rivers of the Asturias Region. The Salmon counters are situated on important points of the fishes' journey up the river, which can be natural or artificial structures, such as fish passes.

The University of Oviedo has collaborated in the AARC project to carry out sampling and genetic analysis of migratory fish. The University has assessed the structure of brown trout and Atlantic salmon populations of Asturian rivers. The success and consequences of the current stocking strategies was evaluated employing the genetic markers and methodology developed in the previous INTERREG project, ASAP.

Higher education activities have been prepared: an Intensive Program on River Restoration within the Atlantic Arc will be held in April-May 2012, and a European Master in Integrated Water Resource Management is being programmed.

IRELAND
The future uses of Salmon hatcheries

University College Cork, in association with its partners in Inland Fisheries Ireland and the Electricity Supply Board, have successfully undertaken a large-scale common garden experiment in the Bunowen river, a tributary of the Shannon River system in Ireland, using five candidate populations. The results of the study have provided a novel insight into the genetic and evolutionary mechanisms that contribute to the success or failure of introductions of captive bred Atlantic salmon into the wild. Furthermore, the findings will be important for the formulation of advice to fisheries managers contemplating salmon restoration programmes throughout the Atlantic area in the future.

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Atlantic Aquatic Resource Conservation

ATLANTIC AREA Transnational Programme

Spring 2012 Update

The Atlantic Aquatic Resources Conservation (AARC) project is an Atlantic Area Interreg project for delivering a strategy of Integrated Water Resource Management (IWRM) across the area.

We hope you enjoy finding out some of the latest news from the different activities going on in the project across the Atlantic seaboard of Europe.

UNITED KINGDOM
Trout genetics, weirs and habitats

Westcountry Rivers Trust, the Environment Agency in England and Wales and Exeter University have worked together to collect samples of juvenile trout spawned in all major trout rivers across the south of England, ranging from the Severn on the border with Wales, all around the south coast of England to the Thames in the southeast. These young resident trout have then been genotyped using molecular genetic analysis at Exeter University to provide a genetic profile for each river. This genetic baseline will then be used in assignment analysis of sea trout caught in the English Channel and beyond; this will allow us to discover the rivers of birth of sea-caught trout.
Preliminary testing of the genetic baseline has shown a significant degree of genetic differentiation between resident trout in English rivers, and early assignment analysis of trout sampled at-sea has proved promising.
Westcountry Rivers Trust has carried out practical river restoration including habitat work, habitat and electrofishing surveys, the running of an experimental Salmon hatchery and works to improve access over obstacles in rivers.

PORTUGAL
Collaboration, improving migration routes and ecosystem management

In November 2011 ADIRN, in collaboration with Torres Novas, Naturlink and ICNB organized a seminar covering management and conservation of aquatic ecosystems. This event attracted over 150 people from both local and national government bodies, NGO's, Universities and associations. Invited speakers from all over Portugal and abroad communicated and shared their ideas.
Fieldwork is complete, and natural heritage from Almonda Basin has been mapped and photographed; including more than 15 amphibians, 30 mammals, 7 fish species, 90 birds, with many more aquatic birds resident in Paúl do Boquilobo nature reserve, 15 libelula, particularly in Almonda water canal and 60 butterfly species were sampled. The latest group is very diverse in limestone Aire mountain, where the rare Cupido iorquinii is frequent. This mountain is also rich in flora endemics, where species like Arabis sadina, Iberis procumbens ssp microcarpa, Narcissus calcicola and Silene ciliata find their ecological optimum. Finally, the restoration of a terrain is about to be agreed with land owners in Paúl do Boquilobo reserve.

ADDLAP (Dão-Lafões and High Paiva Development Association) and ESAV (Escola Superior Agrária de Viseu) are undertaking the second round of fieldwork at the same spots sampled in 2011 along Vouga river basin. At the end of this stage (by June 2012) we will be able to get enough data to achieve conclusive results concerning the relationships between the state of fish communities (obtained by electric fishing) and water quality parameters. We are now reaching some positive results about the river places that are advisable for species protection, restocking and gamefishing areas. At this moment, we are already able to propose some critical points to get some intervention in order to promote fish passages that can allow upstream spawning migrations.

FRANCE
Genetics, education and river margin habitat

INRA (ESE - U3E - Ecobiop) has been working in the AARC project to integrate different aspects of migratory fish conservation. Firstly, INRA has reviewed the best practices and innovations in river management, especially on ecological restoration of aquatic ecosystems, including work to understand how hedge networks benefit passive restoration by spontaneous recolonization of riverbanks.
Secondly, for fish undergoing various anthropogenic pressures (fishing, stocking, habitat fragmentation) INRA has studied the population genetic structure of several anadromous species (Atlantic salmon, brown trout, river and sea lampreys) and the factors influencing sex determination of the eel.
Thirdly, INRA are contributing to the creation of an Intensive Program Erasmus in Aquatic Ecology and has carried out student exchanges with several AARC partners in the context of an International Master's course.