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THE CELTIC SEA TROUT PROJECT: AN OUTLINE.

The **Celtic Sea Trout Project** is a ground-breaking, €2 million, multi-agency partnership investigation into the sea trout stocks and their associated fisheries of the many rivers entering the Irish Sea. It is funded by the EU Interreg 4A Ireland Wales Programme with additional support from government agencies, voluntary bodies and private fishery interests in Southwest Scotland, Northwest England, Wales, Ireland (east and south coasts) Ireland and the Isle of Man. The active fieldwork programme will take place over three years from April 2010.

GENERAL BACKGROUND.

Sea trout and brown trout are different forms of the single biological species *Salmo trutta L.* The brown trout spends its entire life in freshwater while the sea trout spends its juvenile life in freshwater and its adult life in the sea; only returning to freshwater to spawn. Within any river system, variable proportions of the juvenile trout may become sea trout in any year depending on the local environment. Generally speaking, it is believed that migration by trout to the sea is associated with the growing conditions they experience in freshwater. Sea migration is a risky business for trout, exposing them to predation and energy costs; however these appear to be offset by favourable growing conditions in the sea.

Thus, the sea trout requires suitable environmental conditions in both the freshwater, estuarine and marine environments in order to complete its complex and variable life history. Our current understanding suggests that the distribution, abundance and composition of our sea trout stocks are sensitive to poorly understood changes in the environments in which they live. These life history requirements and their widespread distribution throughout much of Europe make them a unique and potentially valuable indicator of environmental change and the quality of the aquatic environment in and around the Irish Sea.

The sea trout supports and sustains important and valuable recreational (rod) and commercial (net) fisheries throughout the study area. In parts of Western Britain, including the Irish Sea, many of these fisheries are showing a decline in the numbers and size of the sea trout captured: but the

general pattern is mixed and the causes of the downward trend are not well understood.

PROJECT DEVELOPMENT

The CSTP is derived from the principal recommendations of the 1st International Symposium on “*The Biology, Conservation and Management of Sea Trout*” held in Cardiff in July 2004. This identified the various strategic gaps in our knowledge that limited our ability to protect and conserve our sea trout stocks and manage them in sustainable ways for future generations. Thus, the CSTP will address the following key questions:

- What happens to sea trout after they have migrated to sea and how are the various stocks structured and interlinked?
- What is their marine ecology in terms of their feeding behaviour, diet and life history variation?
- What environmental and other pressures are they exposed to?
- How do their life histories respond to environmental variation in terms of stock structure and composition and, therefore, the subsequent quality of the fisheries?

AIMS & OBJECTIVES.

The overall aims of the CSTP are:

1. To further the pro-active conservation of trout biodiversity (including genetic diversity) and to enable the better management of the sea trout stocks in their freshwater and marine environments so as to strengthen their social, economic and cultural benefits to local and regional communities.
2. To promote cooperative working, the effective dissemination of knowledge and wider general awareness of management needs and options for the conservation and sustainable management of sea trout stocks and fisheries.

Within this framework, the specific objectives may be summarised under the following task headings:

- 1. Fishery Inventory.** To describe the commercial (net) and recreational (rod) fisheries in terms of their location, type, declared catches, fishing effort, trends in performance, socio-economic value and potential for further development.



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2. Stock Discrimination. To develop a database of the genetic and micro-chemical profiles of the juvenile sea trout and brown trout populations of individual catchments to provide a benchmark for determining the river/region of origin of adult sea trout caught in estuarine, coastal and offshore waters.

3. Marine Ecology & Behaviour. To investigate the distribution and pattern of marine movements, feeding behaviour and diet of adult sea trout in estuarine, coastal and offshore waters.

4. Freshwater Production. To evaluate the distribution, quality and availability of spawning and rearing habitats for juvenile trout in selected catchments, describe their freshwater production capacity in terms of smolt yields and explore the potential for modelling sea trout production using habitat features.

5. Life History Variation. To describe the life history variation for different stocks of adult sea trout from 20 selected rivers, to consider the linkages between environmental conditions within the freshwater and marine environments and the life history strategies adopted by sea trout, and to develop preliminary models to illustrate the impact of life history variation on fishery performance.

6. Communication. To promote a wider awareness and understanding about the management of sea trout stocks and fisheries and the need for integrated, cross-border cooperation in the protection and management of sea trout (and other migratory fish) in the marine environment.

FIELDWORK SAMPLING PROGRAMME.

The CSTP will require a massive commitment to collect the information and material required for the different elements of the study. This entails the collection of scale samples and capture details from anglers and netmen to support the genetic and life history studies for some 20 rivers, the routine electro-fishing in some 80 rivers to obtain fin-clips from juvenile trout to establish the genetic database, and experimental fishing with different types of net in estuaries, coastal and offshore waters at carefully selected locations throughout the entire Irish Sea to support the investigations into marine movements, feeding behaviour and the river/region of origin of captured fish. Local netmen and coastal fishermen will be employed to assist with the marine sampling programme

whenever practicable and every effort will be made to provide information and material from any marine fish species captured incidentally during the sampling programme to support the scientific and management studies undertaken by other workers.

PROJECT SPONSORS.

The CSTP is variously sponsored by a wide range of partners, associates and supporters from each of the geographical regions bordering the Irish Sea. In addition to many angling associations and fishery owners, these include:

Ireland:

Central Fisheries Board
Marine Institute
Eastern Regional Fisheries Board
Southern Regional Fisheries Board
Southwestern Regional Fisheries Board
University College Cork
Loughs Agency (cross-border body)
Department of Culture, Arts and Leisure (DCAL)

Wales:

Bangor University
Welsh Assembly Government
Environment Agency Wales
Countryside Council for Wales
Clwyd & Conwy Rivers Trust
Carmarthenshire Rivers Trust
Teifi Rivers Trust

England

Environment Agency
Centre for Environment, Fisheries & Aquatic Science

Scotland

Atlantic Salmon Trust
Nith District Salmon Fishery Board
Annan District Salmon Fishery Board
Galloway Fisheries Trust
Buccleuch Estate
Solway Sea Trout Group

Isle of Man

Department of Agriculture Fisheries & Food

FURTHER INFORMATION

The CSTP web-site www.celticseatrout.com will be on-line from 1st April 2010 and will contain more detailed information and news about the project and provide updates on progress.