

Impact of sediment pollution on Salmon and Trout fisheries

Dr. Fred Theurer of the United States Department of Agriculture, Natural Resources Conservation Service (NRCS) conducted a three month OECD-funded study visit at the invitation of the Environment Agency and the Soil Survey and Land Research Centre (SSLRC). The purpose of the project was to collate evidence on whether fine sediment from rural land is affecting salmon spawning habitats in England and Wales.

The work follows widespread concern as salmonid populations have fallen to critically small numbers from the abundance of historical times. More than 120 fisheries specialists were contacted during the study both inside and outside the Environment Agency. Dr. Tim Harrod (SSLRC) accompanied Dr. and Mrs. Theurer to familiarise them with soil and water management conditions in this country.

Agriculturally derived fine sediment is recognised as a major threat to salmonid stocks in the USA. As a result of their study visits, the authors believe that sediment pollution is widespread in England and Wales and is having a deleterious effect on salmonid fisheries. Most riffles examined during the study had significant amounts of fine sediment in the pores of the gravel. However, it became apparent during the work that there is little hard, documentary evidence available to indicate the scale of the problem.

Much of the time was devoted to briefing Agency staff on how fine sediments affect egg and alevin survival, based on work done in the USA. The principle process identified is sediment intrusion into gravels after a redd has been constructed. The rate of intrusion depends on suspended solids concentrations. A significant source of fine sediment in rural areas is from agriculture. It was noted that sediment generation in England and Wales is encouraged by the absence of any culture of integrated soil and water conservation in rural land management.

During site visits, it was clear that the Environment Agency staff have identified bank erosion as a source of sediment and have several projects in hand to deal with it. However, there are few tailored to deal with the substantial source of sediment that originates away from the river corridor.

The key recommendations of the study are that the Environment Agency should:

- undertake research to gather the necessary evidence to determine the impact of sediment pollution on salmonid fisheries in England and Wales. This should be coordinated by the National Salmon Centre;
- improve communication between Agency functions so that an holistic approach can be taken to tackle sediment pollution; and
- seek outside expertise from both the UK and abroad.

This R&D Technical Summary relates to information from R&D Project P2-103 in the following output:

R&D Technical Report P194 "Sedimentation and Salmonids in England and Wales"

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Soil Survey and Land Research Centre

Copies of the Technical Report are available internally from the Regional Information Centre (Library) and externally from the Environment Agency R&D Dissemination Centre, c/o Water Research Council, Frankland Rd, Blagrove, Swindon, Wiltshire SN5 8YF Tel 01793 511711 Fax 01793 514562.

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