

Developing Quality Assurance for Fish Counter Data

R&D Technical Summary W2-055/TS

The use of fish counters to monitor and enumerate the annual migrations of salmonids has become well established in the UK since the original concept was developed in 1949. Relatively little further development of note occurred until the late 1960s, however, development and refinement has continued since, and during the course of the last 30 years the present network of fish counters in England and Wales has evolved.

In 1999 the fisheries function of the Environment Agency initiated a review of its fisheries monitoring, including existing fish counter systems. The review largely confirmed the perceived problems of the absence of consistent protocols and therefore the unacceptable variety in the methods of operation, data collection and validation, and in the analysis, interpretation and reporting of data. It was clear that data quality criteria were not always recognised and that no nationally consistent procedures for monitoring data quality were in place. This project was carried out to address these concerns.

Each of the 41 fish counters operated by the Environment Agency, either in the past, the present or proposed for the future, were examined in relation to four criteria:

1. Counter Purpose
2. Counter Location and Design
3. Operational Quality of Data Produced
4. Counter Costs

Each of these criteria was further broken down into a number of assessment categories. Individual scores were established for each counter to give a ranking.

The results clearly showed the wide variation in counter operation and design between sites within the

counter network and that this variation is irrespective of the relative "value" of that data to the fishery function. These variations reflected two things:

1. An under funding of the counter network in the past.
2. The non-targeted allocation or prioritisation of resources within the fish counter network.

There are no definitive "good practice" guidelines for fish counters, but the results highlight which counters could serve as a model for good practice. Some sites that appear to be well designed and ideally located have a low priority ranking from a funding perspective. Yet other sites with a relatively high priority appear to have design and location issues and show scope for improving the quality of data produced.

The conclusions derived from the work were:

1. The current network of fish counters in the Environment Agency comprises systems of various age and design, operating to variable standards. There is no consistent programme of maintenance or validation. Consequently the data produced are of variable and uncertain quality. There have been attempts to remedy this unacceptable position, however, to date these have not been successful.

2. The National Review of Fisheries Monitoring has confirmed that there is an ongoing requirement for data that can be produced by fish counters. This data is needed to inform Salmon Action Plans and catchment water management planning. Additionally there are other drivers for this data, including Catchment Abstraction Management Strategies (CAMS), requirements associated with the Habitats Directive and Asset Management Plan (AMP), and the emerging Water Framework Directive.
3. This work has served to identify, for the first time, the current operating standards of each counter in the network. This has already been used to prioritise systems for resourcing within the future national core fisheries monitoring programme.
4. The work has also identified the way forward. A quality assurance programme is needed to confirm current operating protocol at each site, the potential standard that could be achieved there, and to identify site investment plans.

This R&D Technical Summary relates to information from Project W2-055 contained in the following output:

**R&D Technical Report W2-055/TR
Developing Quality Assurance for Fish Counter
Data: Phase 1 An Assessment of the Salmonid
Fish Counter Network in England and Wales**

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