Technical summary

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Defining Angler Opportunity

R&D Technical Summary W2-084/TS

The overall objective of this project was to increase understanding of how the Agency can encourage angling participation and thus meet it's objectives in enhancing both peoples' quality of life and the natural environment. As an initial step in answering this question, the project pilots a method for relating angling opportunity to participation in South East Wales.

The practical objective of the project was to develop a tool that would enable fisheries managers to take into account the potential social and economic benefits from river regeneration where it results in increased fishing opportunities. For example, where decisions have to be made between competing potential sites for river regeneration, the project pilots a methodology that will help fisheries managers to identify the locations where creating a fishery will result in the greatest socio-economic benefits.

Previous studies have suggested that distance (travel cost) is a significant factor influencing participation in recreational activities, so the empirical aims of the project were to a) classify and then map the angling opportunity in South East Wales Area, in order to evaluate current availability, and b) to quantify the relationship between distance from centres of population to fisheries and participation in angling.

The study used a Geographical Information System (GIS) to analyse a databases of fisheries and produce a number of maps showing various types of angling opportunity in the study Area. The GIS was also used to calculate, on a relatively broad spatial scale, the distances between centres of population – postcode districts – and fisheries. After a number of preliminary and descriptive analyses, statistical models were used to estimate the relationship between the supply of fisheries and angling participation. The main findings of the study are as follows.

Availability, as measured by distance-to-fishery (day ticket fisheries only), has a significant and measurable impact on the number of rod fishing licences purchased in a postcode district. These results confirm the findings from a large number of previous studies that have modelled recreation demand, both in the UK and abroad.

- The preferred models showed that a 1km increase in distance to trout and coarse fisheries decreases trout and coarse licence sales by between 4 and 10%. The same increase in distance to migratory salmonid fisheries reduces licences sold by 6%. The relationships were modelled using both Ordinary Least Squares (OLS) and Generalised Linear Models (GLM); goodness of fit measures indicated that the GLM provided a better fit of the data than OLS regression, and that a log-linear specification of the relationship between the number of licences and distance-to-fishery in the GLM provided the best fit of the data.

- In Section 5 of the report an example is given of how the quantitative results can be used in conjunction with the GIS tool to predict approximate increases in the numbers of rod licences by postcode district, from the creation of a new fishery. The example used is a new day ticket trout fishery on the River Rhymney in Cardiff, which results in distance reduction for 6 postcode districts and a resulting approximate increase of 230 licences across these 6 districts.

- In general the results are encouraging, although the limited timeframe of the study meant that there are a number of recommendations for refinements to the methodology and additional modelling.

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These include: using licence data on a finer spatial scale for example by postcode sector and using GIS route-finding capabilities to calculate distances; modelling the angling opportunity-participation relationship for junior licence sales/holders, and for more specific types of fishery.

This project pilots a geo-spatial methodology that can be used as a strategic input into fisheries development, to be used by fisheries managers and regional strategy staff. The purpose of this project was to show how the methodology can be used by fisheries managers to assess angling opportunity in an Area, and to assess the potential socio-economic benefits of new angling opportunities.

This R&D Technical Summary relates to information from R&D Project WR-084 reported in detail in the following outputs:-

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