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# SALMON AND SEA TROUT ANGLING: ANGLERS' CONSERVATION PREFERENCES

GIANLUCA GRILLI, JOHN CURTIS AND STEPHEN HYNES



# Salmon and Sea Trout Angling: Anglers' Conservation preferences<sup>1</sup>

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\*Gianluca Grilli (ESRI), John Curtis (ESRI), and Stephen Hynes (NUIG)

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## OVERVIEW

The year 2019 is designated 'International year of the salmon' by the North Atlantic Salmon Conservation Organization (NASCO), to stimulate research and encourage the general public to support salmon conservation. This research, which has been funded by Inland Fisheries Ireland, responds to the wider international call for establishing the conditions for resilience of salmon stocks in a changing world. Salmon and sea trout stocks have declined dramatically over the last few decades due to excessive fishing, habitat decline and the impacts of climate change.

The research considers anglers' preferences for salmon and trout conservation from two perspectives: their attitudes to fishing catch and release (which limits the loss of spawning potential) and their preferences for conservation-oriented options for fishery management.

Over the 2010-2016 seasons, and excluding mandatory releases, anglers released just 38% of the fish they caught. In a time of declining stocks, where anglers have the free choice between keeping a caught fish or releasing it, most fish are killed for personal consumption. We find an inverse relationship between fish size and the propensity to release fish back into the wild. Larger fish are more likely to be kept for personal consumption, while smaller fish are more likely to be released. Across all anglers, the weight of a fish that anglers are equally likely to either release or keep for personal consumption is 1.5kgs, on average.

Investigating salmon anglers' views on fishery conservation measures, such as barrier removals (e.g. weirs), bank stabilisation, pool restoration, and angler

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<sup>1</sup> This Bulletin summarizes the findings from 2 papers:

Gianluca Grilli and John Curtis (2019): "Choice experiment assessment of anglers' salmonid conservation preferences", *Journal of Environmental Planning and Management*, <https://doi.org/10.1080/09640568.2019.1614816>, and Gianluca Grilli, John Curtis, and Stephen Hynes (2019), "Modelling Anglers' Fish Release Choices Using Logbook Data", *Journal of Environmental Economics and Policy*, <https://doi.org/10.1080/21606544.2019.1640140>

harvest limits, we identify two broad groups of anglers of similar sizes. One is generally satisfied with current circumstances with respect to river quality and stock levels and is willing to contribute financially to conservation measures, such as barrier removals and bank stabilization. They are also willing to accept a reduction in the annual bag limit for anglers. The second group is dissatisfied with current stock status and favours an even larger reduction in the annual bag limit to four fish per year but the only other conservation measure that they are willing to contribute towards is barrier removal on river courses.

## **BACKGROUND**

The data upon which this research is based are from two sources. The first is angler logbook returns, where salmon and sea trout anglers report details of their catch irrespective of whether kept for consumption or released. The second part is based on a survey of 227 avid anglers. Respondents were asked to express their preferences between multiple conservation scenarios, including barrier removal in rivers, river bank stabilization, pool restoration and annual bag limits. Using statistical techniques we identify the factors that affect catch and release fishing and the relative importance of different attributes of fishery habitat and stock conservation.

## **POLICY IMPLICATIONS**

Where anglers have a free choice between keeping a caught fish or releasing it, 62% are killed for personal consumption. The research further shows that there is a strong association between fish weight and the propensity to release. Larger fish (with greater spawning potential) are most likely to be kept for consumption. In assessing fish stocks and regulating fishing activity, fishery managers should be cognisant that the average fish released has a lower spawning potential compared to the average fish kept for consumption.

While the study of anglers' preferences finds some agreement across anglers, for example that the annual angler bag limit should be reduced, there is little consensus on other conservation measures among this surveyed group of more avid or regular anglers. Any new conservation initiatives, for example improving habitats (e.g. pools, banks, barriers, etc.), are likely to have both proponents and detractors and generating 'buy-in' among stakeholders will be difficult. Even where there is support for reduction in the annual angler bag limit there is no consensus on how much it should be reduced; however, the vast majority of anglers catch less than 2 fish a year so a new bag limit of four salmon per annum compared to the current ten is unlikely to be binding for most anglers.

A surprising result from our survey analysis is that there is a substantial minority of anglers, at 15% of those surveyed, who do not believe that wild salmon and trout stocks are critically endangered. In this regard, new communication efforts may be necessary to raise awareness of declining stocks and the threat to the viability of salmon and trout fisheries.

Whitaker Square,  
Sir John Rogerson's Quay,  
Dublin 2  
Telephone **+353 1 863 2000**  
Email **admin@esri.ie**  
Web **www.esri.ie**  
Twitter **@ESRIDublin**