Developments in Inland Fisheries Ireland Research

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Iascach Intíre Éireann
Inland Fisheries Ireland

Welcome to the Newsletter

Citizen science has become an important part of research into Ireland's recreational fisheries. Anglers and other interested stakeholders help to fill gaps in fisheries data with their observations. Furthermore, volunteering for citizen science engages stakeholders to learn more about their fisheries and to contribute towards management decision-making.

In this issue, we highlight projects in which anglers have contributed towards fisheries research by providing data and observations or by helping to capture fish for tagging studies.

As always, we thank all IFI staff who contribute to our research programmes and to this newsletter.

Slán,

Dr. Cathal Gallagher, Head of Research & Development

In this issue

The IMREC Project — Sea Anglers Sign Up for Award-Winning Citizen Science

IMREC team receiving Esri Ireland's Community Engagement Award (l-r): Pat Mannix, Claire Colfer, Eoin Leonard, Willie Roche & Diarmuid Ryan. IMREC team includes Paul O'Reilly (IFI Business & Development).

IFI is encouraging more sea anglers to get involved in gathering data on Ireland's marine fish stocks with an award-winning citizen-science web app. Using surveys at angling marks and an online diary web app, the Irish Marine Recreational Angling Survey (IMREC) is collecting data on fishing effort and catches around Ireland's coastline in compliance with EU regulations mandating member states to collect, manage and use data to advise fisheries management policy. IMREC acknowledges anglers as important stakeholders and gives them the opportunity to act as citizen scientists and to support fisheries conservation at the national and European level.

In March, the IMREC project was awarded Esri Ireland's Community Engagement Award, which recognises organisations that demonstrate excellence in communicating and collaborating with citizens to promote informed decision-making and to support community engagement on important initiatives. The IMREC web app uses Esri's ArcGIS Survey123, a data-gathering form that allows anglers to upload real-time information via a web browser on their mobile phones to an online geographic information system (GIS) database.

In 2022, the top five marine fish species caught by IMREC participants were mackerel, pollack, dogfish, seabass, and whiting, and the hotspots for catch rates were Cork, Clare, Donegal, Kerry and Wexford. The data showed that on average, IMREC participants logged 42 hours of angling, caught just over 80 fish in total annually, caught fish from 6 different species and caught just over 6 fish per session. Catch-and-release rates were over 80%, highlighting sea anglers' awareness of the importance of stock conservation.

In addition to providing valuable data on Ireland's recreational marine fisheries, the easy-to-use IMREC web app has great features for sea anglers, providing a free online tool that allows them to record their fishing trips in a personal angling diary, to attach photos of their catches, to record details such as tide, weather and bait used and to look back over previous sessions on their own interactive map. Participating anglers can also opt to enter regular prize draws.

Find out more about IMREC or sign up now to start logging your fishing sessions at https://imrec-ifigis.hub.arcgis.com/.

Pollack: one of the species most frequently caught by sea anglers in 2022

Interviewing a sea angler for IMREC

Marine Sports Fish Tagging Programme: Open Data on Elasmobranchs Now Available

IFI has published a new dataset on the distribution of elasmobranchs in the seas around Ireland. Since the 1970s, charter boat skippers and sea anglers participating in the Marine Sports Fish Tagging Programme have caught, tagged and released sharks, skates, rays and dogfish, which are known collectively as cartilaginous fish, or elasmobranchs.

The voluntary efforts of these citizen scientists has provided valuable data on the movements of elasmobranchs at sea, which helps the conservation of these species, many of which are relatively rare or are vulnerable to threats.

The newly released dataset includes the grid location of initial capture and tagging for over 47,000 individuals from 23 fish species tagged over the period 1970–2018. The dataset can be downloaded from IFI's open data portal or explored online using an interactive webmap: https://opendata-ifigis.hub.arcgis.com/apps/irish-marine-sports-fish-tagging-programme-app.

Tagged porbeagle shark

Screenshot of the elasmobranch tagging dataset webmap

Want to report a tagged shark, skate or ray?

- Record as much information as possible:
  - Tag number
  - Precise recapture location (GPS co-ordinates if possible)
  - Length & weight (estimate if necessary)
  - Date, time & method of recapture
- Contact us by email at info@fisheriesireland.ie
- For more information, please visit our citizen-science webpage.

Invasive Alert — Pink Salmon Reappear in Ireland in 2023

IFI is asking anglers and the public to look out for pink salmon, also known as humpback salmon (*Oncorhynchus gorbuscha*). Native to river systems flowing into the North Pacific and Arctic Oceans, this migratory species has established populations in northern Norway after previous stocking in rivers in northwest Russia. These invasive populations have expanded their range westwards in recent years, first appearing in Ireland's rivers in 2017 and odd years thereafter.

Pink salmon populations have a two-year cycle for migration and spawning, which means that the population invading Ireland is expected to appear again this year. The first pink salmon of 2023 in Ireland was caught on June 25th in the Ridge Pool in Ballina on the River Moy.

For more information on recognising pink salmon, please visit https://www.fisheriesireland.ie/species/pink-salmon-oncorhynchus-gorbuscha.

Want to report a pink salmon?

- Retain the fish & record:
  - Date & location of capture
  - Length & weight of the fish
  - Take a photograph
- Contact IFI immediately: Email at info@fisheriesireland.ie
  Phone 1890 34 74 24

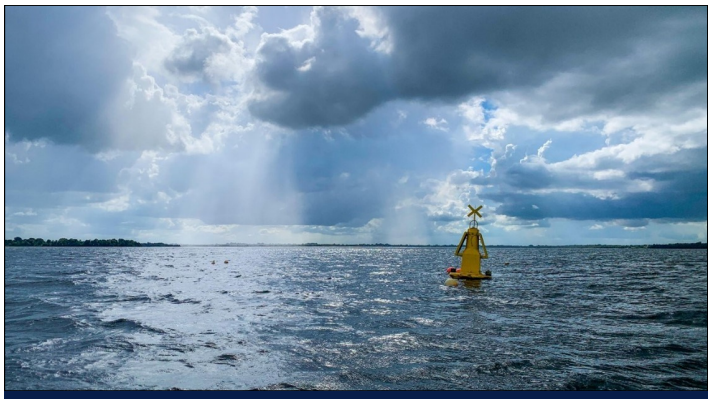
Lough Sheelin Tracking Project — Do Extreme Weather Events Impact Fish Movements?

The Lough Sheelin Fish Tagging Project got underway this May to investigate the effects of climatic change and extreme weather events on lake habitat and fish behaviour. With the help of the Lough Sheelin Trout Protection Association (LSTPA) and local anglers, research staff from IFI captured and tagged a number of brown trout with acoustic transmitters to track their movements around the lake.

Understanding the movement ecology of fish is fundamental for fisheries management and for developing effective conservation policies. It is informative to understand how fish use lake habitat, for example, understanding when fish prefer deep water versus shallower bays. Understanding fish behaviour in conjunction with climate events, such as heatwaves and elevated water temperatures in summer, provides an important perspective on management of lakes in an era of climatic change.

The tagged trout were fitted with surgically implanted acoustic transmitters that will be tracked via an array of receivers strategically deployed around Lough Sheelin to map their position. Over the coming months, telemetry data will be used to investigate the movements and depth preferences of tagged fish. This work will also determine which tributaries are used for spawning and the relative proportions of fish that spawn and that overwinter in the lake. The tracking study will also characterise fish species' habitat use, with a specific focus on depth preference in relation to changes in water temperature and oxygen levels. Changes in these environmental variables over the year may constrain oxythermal habitat available to fish, resulting in behavioural responses and movement activity as fish cope with extreme weather events, such as heatwaves.

Integrating telemetry on fish movements with data on ambient environmental conditions is an intuitive next phase in the Climate Change Mitigation Research Programme (CCMRP) and OPW Climate Resilience Research Project, which have built catchment-wide networks of environmental sensors around the country to assess the impact of climatic change on freshwater fisheries and to build capacity for conservation measures and mitigation strategies. The research team also hope that by participating as citizen scientists capturing fish for tagging, anglers will gain more awareness about environmental issues in the natural systems they care about.



Buoy for a sensor array in Lough Sheelin

Brown trout with implanted transmitters are marked with blue floy tags

Surveillance Monitoring of Rivers, Lakes & Transitional Waters 2022

In 2022, the National Surveillance Monitoring Programme (NRSP) surveyed 24 lakes, 169 river sites and 12 transitional waters as part of IFI's updated national fish monitoring programme. For the 2022–2027 monitoring cycle, the NRSP has adopted a strategic approach to monitor 67 index catchments across all river basin districts, thereby providing a broader overview of the health of fish stocks. The monitoring programme now also includes more lakes of interest to fisheries management and features a targeted focus on transitional waters (estuaries, lagoons & tidal freshwater) with substantive deterioration in ecological status.

The NRSP core team is grateful for the assistance of colleagues across IFI, especially for the support of regional staff in implementing the fieldwork programme. The programme's summary report and individual river, lake and transitional-water reports are made available on the WFD fish monitoring programme section of the IFI Publications webpage and on the wfdfish.ie website. Data on WFD fish ecological status for monitored rivers are also available on the IFI open data portal at https://tinyurl.com/3t5f86h5.

A bird's eye view of an NRSP lake survey

Same Challenges, Different Countries — River Restoration in Ireland and Finland

Aurora Hatanpää gives a talk on river restoration at IFI Citywest HQ

In May, IFI staff hosted a seminar and field trips for visiting counterparts in river restoration from Finland: Timo Yrjänä (ELY Centre for North Ostrobothnia), Aurora Hatanpää (Fishery Authorities of Finland), Esa Laajala (Neova Group) and Pauliina Louhi (Nature Resources Institute Finland). The seminar at IFI Citywest HQ featured interesting talks on river restoration, dam removal projects and wetland construction from the Finnish visitors, as well as overviews of fishery enhancement, project planning and barriers assessment in Ireland by IFI research staff, including Cathal Gallagher, Rossa O'Briain and Brian Coghlan, as well as Liam Gavin from IFI's Project Office.

Following the seminar, IFI research staff Karen Delanty, Ciara Fleming and Amy McCollom, together with local IFI operations and regional staff, hosted the visitors on a tour of fishery enhancement projects across Ireland. Some of the Finnish experts had visited Ireland for a workshop on salmonid habitat in 2002, and the group were keen to see the long-term outcomes of the Tourism Angling Measures (TAM) programme, which aimed to improve salmonid stocks in rivers by enhancing channel morphology. The restoration works implemented included restoring spawning gravels, engineering a more natural riffle-pool-glide flow pattern in channels modified by drainage, stabilising riverbanks to prevent erosion and encouraging riparian vegetation growth by planting trees and by excluding livestock to prevent trampling. These restoration measures continue to be developed and implemented by IFI's Environmental River Enhancement Programme (EREP).

In the Glenglosh Valley on the River Corrib, the group met Martin Butler and Eamon Walsh (IFI Galway), as well as former IFI staff member John Walsh, to visit TAM sites and to see the more recently developed soft engineering approach for bank protection. The group also met Declan Cooke (Projects Office) to discuss the effectiveness of enhancements for spawning and nursery habitats in the River Clare. On the River Robe, John Campbell and Padraig Kerrigan (IFI Galway) met the group to describe how fish habitat has developed since the implementation of EREP works.

No tour of rivers in the West would be complete without a visit to the Cathedral Beat in Ballina, where Barry Kelly and Philip Thornton (IFI Ballina) gave an overview of fishery management on the River Moy. On their return to Dublin, the group detoured via the River Stonyford, where Maureen Byrne and Robert Bergin (IFI Dublin) have worked on habitat enhancement. As well as fencing to prevent livestock access, a key part of this project was the installation of cattle drinkers, which are now routinely included in many enhancement projects to alleviate pressure from livestock on river habitat.

The parting words from our Finnish colleagues were a big thank you to all who made this trip very enjoyable and very educational… and of course, an invitation to visit Finland in the near future for another fruitful exchange of ideas.

Finnish visitors and IFI staff on their tour of river restoration works

Restoration site with bank stabilisation works in the Glenglosh Valley

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We Hope You Enjoyed the Newsletter

Feedback is always welcome, so please get in touch if you have any comments.
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