

Coordinating initiatives to conserve wild salmon

Scottish Fisheries

The Challenge

- No single, nationwide picture of interventions to protect wild salmon populations in Scotland
- Uninspiring, static pdf fisheries management plans

The Benefits

- First ever, nationwide view of planned interventions
- Improved ability to attract funding for interventions
- More adaptive and collaborative planning
- Clearer communication with stakeholders

Working with members and stakeholders, the Scottish Fisheries Coordination Centre has created the first ever national record of over 1,300 initiatives, planned across 44 fisheries districts, to improve conditions for endangered wild salmon populations. It uses ArcGIS Dashboards and ArcGIS StoryMaps to share information more dynamically, support collaboration and build up a clear understanding of the level of investment needed to make a positive impact on river habitats.

The Challenge

Wild salmon populations have been in steady decline in the UK ever since 1952 and are now classified as endangered. One of the organisations that is committed to reversing this trend is the Scottish Fisheries Coordination Centre (SFCC). Part of Fisheries Management Scotland, it coordinates with a wide range of stakeholders, including rivers and fisheries trusts, district salmon fishery boards and the Scottish Government, to drive initiatives to protect salmon and other freshwater fish.

For many years, 27 organisations have been involved in producing fisheries management plans for the 44 fisheries districts in Scotland. Although these plans were produced to a standard template, they were stand-alone, static, pdf reports comprising up to 50 pages. Consequently, people working in the fisheries sector could neither gain a clear oversight of the range of initiatives needed to protect salmon populations across Scotland nor gauge the likely cost of implementing them.

The Solution

SFCC already used Esri's geographic information system (GIS) technology, ArcGIS, in many aspects of its work. With funding from Crown Estate Scotland and the Scottish Government, it embarked on a project to use ArcGIS to make the 44 fisheries management plans more dynamic and engaging, as well as create Scotland's first ever centralised and comprehensive record of all of the intervention projects planned nationwide to help protect salmon populations.

Through workshops with key stakeholders, SFCC defined twenty categories of intervention that could be used, such as removing barriers in rivers, increasing tree planting or patrolling river segments. Then, using ArcGIS Pro, it collated information from all 44 fisheries areas and created a single nationwide dataset of all 'priority actions' that are in progress, planned or not possible due perhaps to access or legal restrictions.

To display this Priority Actions Data, SFCC created ArcGIS Dashboards that provide high-level overviews of the planned interventions, across the whole of Scotland. Using these dashboards, people working in the fisheries sector can see, at a glance, how many actions are needed, exactly where they are planned, how long they are due to take, what the status is and, critically, what the estimated costs are and whether they are financed.

In parallel, SFCC liaised with its member organisations and gained consensus for the traditional pdf fisheries management plans to be reimagined as story maps. It created a standard ArcGIS StoryMaps template and provided support to help members get started. Now, all 44 fisheries management plans are available as dynamic story maps, and they all draw on the same, centralised, authoritative Priority Actions Data. The story maps include information on everything from river catchment areas to fish population health statistics, and users can click on points within interactive maps to bring up boxes with more information.

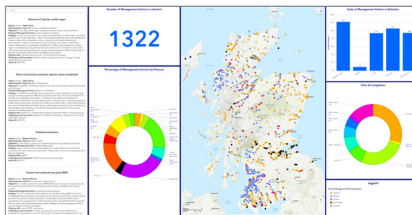
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“ We now know the precise level of investment required to improve conditions for salmon populations, at local and national level, and can use this insight to help us attract finance from new investors. ”

Sean Robertson, SFCC Manager



An ArcGIS Dashboard showing actions from Scotland's fishery management plans

The Benefits

First ever, nationwide view of planned interventions

Now, for the first time, SFCC, its members and stakeholders have a clear understanding of over 1,300 interventions planned nationwide to help improve conditions for wild salmon. “Previously, there was no way to gain an understanding of what was planned, at a national level, without trawling through 44 separate pdf reports,” says Sean Robertson, SFCC Manager. “Now, using ArcGIS Dashboards, we can see exactly where interventions are needed, across the whole of Scotland, what types of interventions these are and their likely cost.”

Improved ability to attract funding for new interventions

ArcGIS Dashboards clearly highlight £202 million in unfunded and partially funded projects ready for investment in the next five years, across Scotland. It is, therefore, now much easier for investors to find projects of the type they are interested in and in the locations where they want to invest. Private sector organisations can, for example, see where funding is needed for tree planting on riverbanks and invest to offset their carbon footprints. “We now know the precise level of investment required to improve conditions for salmon populations, at local and national levels, and can use this insight to help us attract finance from new investors,” Robertson says.

More adaptive and collaborative planning

The fisheries management plans created with the ArcGIS StoryMaps app builder are far more adaptive than pdf plans, so member organisations can update their management strategies easily, on demand, whenever an action has been completed or new ones arise. The story map format is also more effective at revealing opportunities for organisations to share resources, avoid duplication and work together on similar projects. “The ArcGIS story maps are stimulating greater collaboration and will, I believe, lead to better outcomes for Scotland's salmon and river environments,” comments Robertson.

Clearer communication with stakeholders

The 44 fisheries management plans are now far more interactive and engaging, improving communication between rivers and fisheries trusts and their audiences. “Story maps really hold people's attention and are much better than long text documents for showing people what interventions are needed and where,” Robertson explains. “Whether our member organisations are communicating with local residents, volunteers, landowners or government agencies, the ArcGIS story maps enable them to really demonstrate the value that their planned interventions can bring to the freshwater environment.”

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