

## Sustaining diverse and vibrant river catchments

# Forth Rivers Trust

### The Challenge

- Reach a wider audience with river management plans
- Improve the efficiency and accuracy of data collection in the field

### The Benefits

- Raised public awareness of river pressures
- Living – not static – management plans
- Up to 50% time savings on habitat surveys in the field
- Better data for grant applications and progress monitoring

A rivers trust in Scotland has improved the way that it engages with members of the public, stakeholders and partners to raise awareness of the pressures on some of Scotland's most diverse and vibrant river catchments. Using ArcGIS StoryMaps and mobile data capture solutions, it can now evidence the urgent need for conservation schemes and better articulate the success of its intervention projects.

### The Challenge

Covering a vast area of over 4,500 km<sup>2</sup>, the Forth district includes all rivers, streams and burns that flow into the Firth of Forth Estuary in Scotland. The area is a haven for diverse wildlife species and a popular destination for recreation, but its future is threatened by pollution, past and future development and climate change. The Forth Rivers Trust wanted to make people more aware of the pressures on these river catchments and secure funding for new projects to improve river environments, but feared that its reports were not reaching a sufficiently wide audience.

At the same time, the Forth Rivers Trust wanted to improve the quality of the data that it relied on for evidencing the need for conservation projects and monitoring the success of its interventions. Much of its data was collected laboriously using pen and paper, and a great deal of time was subsequently required to digitise it. Precise location references could not be recorded, and the trust's employees had no way of viewing or editing data in the field.

### The Solution

Forth Rivers Trust initially decided to leverage Esri's ArcGIS Online platform to transform its five-year river management plans from static pdf documents into highly visual, interactive digital narratives. The first of these pioneering new plans covered the Forth and Teith river catchments and used an ArcGIS StoryMap template to make detailed information about the pressures on these key river environments more engaging for partners, stakeholders, grant-givers and the general public.

As part of the process of creating the StoryMap, Forth Rivers Trust had to digitise a large amount of historic data, as well as clean, edit, merge and standardise all of the organisation's existing datasets. This data preparation was time-consuming, but paved the way for the trust to gain even more value from its data assets. "Once we had put all our data into ArcGIS Online for the StoryMap, we were only a few small steps away from making it possible for our staff to amend, edit, query and collect data in the field," says Michiel Voermans, Data and GIS Officer at Forth Rivers Trust.

Consequently, soon after the launch of the StoryMap, Forth Rivers Trust created a mobile solution with ArcGIS Field Maps that allows conservationists, ecologists and other staff members to view, collect and edit data in the field. The Field Maps app is very easy and intuitive for anyone to use on mobile phones, enabling the trust to capture accurate information and locations on issues including invasive species, sewerage outflows and river barriers.

Following the success of ArcGIS Field Maps, Forth Rivers Trust also began to use an Esri SWEET app to help it conduct complex phase one habitat surveys. Easy to use for non-GIS experts, this Esri-designed solution allows ecologists to capture detailed information, pictures and locations and map everything they see digitally on tablets, while in the field.

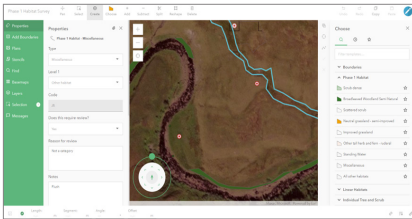
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“ ArcGIS StoryMaps enable us to engage with more people, raise awareness of the pressures on river catchments and highlight opportunities for improvement. ”

Michiel Voermans, Data and GIS Officer, Forth Rivers Trust



The Esri ArcGIS Sweet app used by Forth Rivers Trust for complex habitat surveys

### The Benefits

#### ***Raised public awareness of river pressures***

By converting its river management plans into ArcGIS StoryMaps, Forth Rivers Trust is able to reach a wider audience and improve public understanding of the diverse challenges for river catchment areas. “Our Forth and Teith Catchment Management Plan StoryMap received 2,400 views in the first year, whereas a pdf plan would not have reached 10% of this number, even in five years,” says Voermans. “ArcGIS StoryMaps enable us to engage with more people, raise awareness of the pressures on river catchments and highlight opportunities for improvement.”

#### ***Living – not static – management plans***

With its new StoryMap approach, Forth Rivers Trust has been able to turn its static, pdf river management plans into living documents that can be updated regularly as new information becomes available. The organisation can, for example, share up-to-date information on the status of projects, such as removing man-made barriers to fish migration. It no longer has to produce new plans every five years, as unlike the pdf plans, the StoryMap plans don’t get out-of-date. “ArcGIS has enabled us to take a huge leap forwards in the way that we monitor river catchments and plan new management schemes to protect and regenerate these vibrant and diverse environments,” Voermans says.

#### ***Up to 50% time savings on habitat surveys***

As the organisation no longer has to digitise data collected on paper in the field, it is saving a tremendous amount of time. “Digitising habitat data and hand-drawn maps in the office can take as much time as conducting the survey in the field,” Voermans explains. “Our use of Esri mobile data capture solutions is, therefore, leading to a time saving of up to 50%.”

#### ***Better data for grant applications***

ArcGIS Field Maps and the Esri SWEET app enable Forth Rivers Trust to capture more accurate, location-specific data and gain clear evidence to support bids for funding for new river restoration schemes. The data improvements also help the organisation to more precisely monitor the success of its interventions and continually strengthen the case for improving river environments for wildlife, communities and visitors alike. “Our role is to give a voice to the rivers,” says Voermans, “and ArcGIS helps us to do this.”

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