

Inspiring visitors at digital landscape exhibition

Northumberland National Park Authority

The Challenge

- Engage with members of the public at exhibition

The Benefits

- Longer exhibition visits and 94% visitor satisfaction
- Greater appreciation of the park's characteristics
- Improved understanding of the work of the Park Authority
- Recognition for innovation on a budget
- Inspiration for future GIS projects



Northumberland National Park Authority put its geospatial data and ArcGIS tools into the hands of the general public at a major new landscape exhibition. This groundbreaking use of GIS augmented visitors' interest in the biodiversity and archaeology of the park and gave them a deeper appreciation of how and why the organisation implements vital conservation schemes.

The Challenge

Covering an area of 1,051 km² from Hadrian's Wall to the Scottish border, Northumberland National Park combines natural habitats and biodiversity with fascinating archaeology and stunning scenery. The Park Authority's role is not only to conserve and enhance this precious environment, but also to help people understand and enjoy it.

When the organisation began to plan a major exhibition, it started looking for inventive new ways to help it engage more successfully with visiting members of the public. It decided to showcase the technology that it uses every day in the management of the park and took the bold decision to make its geospatial data and tools available for members of the public to explore for themselves.

The Solution

The Northumberland National Park Authority has been using geographic information system (GIS) solutions from Esri UK for a number of years. Field-based employees including park rangers, archaeologists, ecologists and farming officers have ArcGIS apps on their mobile phones, including Collector for ArcGIS and Survey123 for ArcGIS, which they use to collect a variety of GIS data while in the park. Back at the Park Authority's head office, employees manage geospatial data from field-based teams, GPS devices and drones, using ArcGIS Online web apps and dashboards, to gain insight into trends and evidence to inform conservation and park protection schemes.

Ed Hudspeth, GIS Officer, Northumberland National Park, says: "Rather than just telling members of the public about our use of ArcGIS tools to manage conservation projects, we decided to give them the opportunity to use it themselves. Esri's data visualisation tools are very easy to use, providing us with an ideal way to share our geospatial data with visitors."

Taking place at The Sill National Landscape Discovery Centre in June 2018, the Digital Landscapes exhibition showcased:

Collecting data

Visitors could use an Esri Dashboard to explore data collected in the field by park rangers on their mobile phones using Collector for ArcGIS, including live data on the maintenance of almost 800 miles of paths including the Hadrian's Wall National Trail.

Analysing data

Everyone could view GPS data from the collars of hefted (free-roaming) sheep and see how this data is combined with land cover maps to help the Park Authority identify patterns and risks to vulnerable habitats.

Interpreting data

An ArcGIS Story Map gave visitors the opportunity to explore drone imagery and 3D terrain models to help them interpret archaeological features on the ground in an area where archaeology was previously unrecorded.

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Ed Hudspeth, GIS Officer, Northumberland National Park



Visitors use interactive ArcGIS Dashboards to explore information about biodiversity and conservation

The Benefits

Heightened public engagement during exhibition

The innovative use of ArcGIS at the Digital Landscapes exhibition contributed to a highly successful event. “Visitor numbers exceeded the targets and the dwell time in the exhibition was, in many cases, an hour longer than previous exhibitions in the same venue,” says Hudspeth. “The whole event gained a 94% customer satisfaction rating from visitors.”

Greater appreciation of the park’s characteristics

Visitors to the exhibition were able to interact with Esri Dashboards to gain an improved appreciation of the park’s biodiversity and cultural heritage. Using the touchscreens, visitors could, for example, investigate the distribution of seventeen different bumblebee species or explore newly identified archaeological features in the landscape. “By giving people unprecedented access to our geospatial data and tools and allowing them to explore the park digitally, we have improved their understanding of the area and inspired them to get out into the landscape,” Hudspeth says.

Improved understanding of the work of the authority

By showcasing its geospatial data and tools, Northumberland National Park Authority was able to demonstrate how it uses GIS analysis to inform its decisions about park conservation. In particular, the display showing the movements of hefted sheep clearly illustrated why the park authority is working with farmers to encourage the sheep away from vulnerable moorland habitats. “By showing how we use ArcGIS to gather and analyse data, we were able to reassure the public and show that the Park Authority makes decisions based on evidence,” Hudspeth recalls.

Recognition for innovation on a budget

The trail-blazing digital exhibition welcomed numerous high profile visitors including the Minister of the Environment, the Minister for Digital and the Chief Executive of the Heritage Lottery Fund. “Our high profiled guests acknowledged the value of what we had achieved on a small budget,” Hudspeth says. “Giving people a behind-the-scenes look at how and why park staff collect and use data was one of the most popular elements of the exhibition.”

Inspiration for future GIS projects

As ArcGIS was so successful in engaging members of the public at the exhibition, the Park Authority has been inspired to develop new public-facing GIS apps to expand the number of ways in which it involves local people in its work. “As an organisation, we learned a lot from the exhibition, especially using spatial data and tools to engage with the public,” Hudspeth explains. “Since then we have started extending our data collection apps out to volunteers and exploring ways to allow the public to contribute to our spatial data in a meaningful way by crowdsourcing conservation data.”

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