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Improving the efficiency of national park maintenance
Broads Authority

In the Broads National Park, Esri's ArcGIS platform is helping to improve the maintenance of a 200 km network of navigable waterways. Employees work more efficiently by using ArcGIS to collect information about maintenance requirements in the field and have better information for planning maintenance activities.

The Challenge

- Improve the efficiency of maintenance checks

The Benefits

- More efficient maintenance process
- Up to 24 days of manual effort eliminated annually
- Better informed decision making
- A single system for park information
- An inspiration for new GIS projects

The Challenge

The Broads Authority is responsible for managing and conserving the Broads National Park in Norfolk and Suffolk. Covering an area of 303 km2, the park is the largest area of protected wetland in Britain and provides a precious habitat for a quarter of Britain's rarest species of animals, birds, insects and plants.

Throughout the year, teams of rangers at the Broads Authority perform fortnightly or monthly site checks of around 110 sites and an annual visual inspection of assets along the park's 200km network of navigable waterways, checking that signage isn't missing, mooring posts are secure and channel markers are not damaged. Rangers used to record details about any maintenance required on paper and in spreadsheets, and this information then had to be centrally collated in a manual process that took two days per month. The Broads Authority wanted to improve the efficiency of this maintenance checks process, as well as gain better information to support its ongoing maintenance planning.

The Solution

The Broads Authority had been using geographic information system (GIS) solutions from Esri for a many years and had recently upgraded to Esri's ArcGIS Enterprise. This platform gave it access to all the mobile data collection, visualisation and analysis tools it needed to transform its maintenance checks process.

Now, up to twenty rangers use Collector App for ArcGIS on tablets to record any assets that are broken, missing or in need of other maintenance. This data is uploaded electronically to ArcGIS Enterprise and collated with no manual intervention or delays. As soon as ArcGIS Enterprise receives new maintenance requests, email alerts are generated via integration with a third party workflow tool to notify teams immediately of repairs needed and ensure urgent issues are escalated promptly.

Furthermore, all of the organisation's 130 employees can use an ArcGIS web app to view the status of maintenance requirements via interactive maps. ArcGIS is tightly integrated with Microsoft SharePoint, so employees can zoom into any area of the park in the ArcGIS web map, view all maintenance issues at that site and click on the asset to go directly to relevant reports or policy documents in SharePoint. Rangers can easily see the status of faults they have reported, while managers can perform geospatial analysis of resolved and outstanding maintenance requests to help them identify any recurring issues and determine appropriate action.

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Vicky Short, GIS Officer, Broads Authority

The Benefits

A more efficient maintenance process

The new ArcGIS maintenance checks process has eliminated up to 24 days of manual data collation a year and created a far more efficient, end-to-end process for reporting and resolving maintenance issues. Rangers work more efficiently in the field, using Collector App to collect data instead of paper and spreadsheets. When they identify concerns, such as a bent ladder or missing sign, the matter is escalated electronically from the field directly to the right team.

Better-informed decision making

The use of ArcGIS gives the Broads Authority improved insight into past and current maintenance issues, enabling it to make better-informed decisions and plan repairs more strategically and cost efficiently. Employees can, for instance, easily see if a section of river bank has collapsed two years running and plan remedial work to reinforce it, eliminating further reactive repair costs, year after year.

A single system for park information

The ArcGIS platform provides the Broads Authority with a single system for viewing and sharing park information, in place of a series of disparate systems. Employees can, therefore, find information far more quickly and switch effortlessly between the ArcGIS web map and related documents in SharePoint.   For example, planning policy officers can now more easily identify which policies apply where and use this information to comment effectively on proposals from nearby councils.

An inspiration for future GIS projects

Following the success of the maintenance checks process, the Broads Authority is now developing new ArcGIS solutions to improve the efficiency of several ecology projects, including a survey of the condition of water plants. "The maintenance checks process has been a pivotal GIS project at the Broads Authority," says Vicky Short, GIS Officer at the Broads Authority.   "It has really showcased what ArcGIS can do and now I have lots of people knocking on my door with ideas! ArcGIS gives us the ability to collect, visualise, analyse and share all kinds of data more efficiently."

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