Bringing data to life in an award-winning new atlas

The Coastal Atlas of Ireland

The Challenge

• Make data and research about Ireland's coastline meaningful and accessible to the general public

The Benefits

• Top quality illustrations for a top quality publication
• Complex, professional maps created easily
• Improved awareness of all-Ireland coastal issues
• Bonus information to explore beyond the pages
• Clear understanding of the challenges for the future

An award-winning atlas, the Coastal Atlas of Ireland, features over 500 map images, created using ArcGIS software. Colourful, detailed and intriguing, the maps engage readers' interest in a wide range of topics and improve understanding of issues that will shape Ireland's coastline and coastal communities for decades to come.

The Challenge

Creating an atlas of the coastline of the whole island of Ireland was a long-standing ambition of Robert Devoy. He assembled a team of co-editors, including Val Cummins, Barry Brunt, Darius Bartlett and Sarah Kandrot, and invited people from Ireland and beyond to contribute information to the atlas based on their areas of expertise. The contributors included academics across the fields of geography, ecology, climate change, geology, geomorphology, marine environments, industry, economics, culture and heritage.

"We wanted to bring together a huge variety of coastal data from across the whole of academia and present it in a way that would be accessible and meaningful for the general public," says Sarah Kandrot, co-editor and cartographer. "Because the atlas has explicitly all-island coverage, this often meant we had to bring together datasets that originated in each of the two jurisdictions, with all the challenges of data (non-) interoperability that implies."

The Solution

Kandrot selected Esri's ArcGIS solution and utilised this software on the desktop to create over 500 clear, attractive and informative maps to illustrate the atlas. The use of a professional geographic information system (GIS) enabled Kandrot to easily combine vast datasets, often in different formats, from a wide variety of sources, ranging from individual researchers to government agencies in the Republic of Ireland and Northern Ireland, as well as the EU. She could use specialist geospatial tools within ArcGIS to analyse and filter the data, view patterns and highlight key coastal issues.

Addressing an incredibly diverse range of topics, the maps illustrate everything from how critical habitats for seabirds are diminishing to how coastal communities were impacted by the great Irish famine of 1845-1852. Some maps plot the locations of coastal leisure facilities, such as golf courses and blue flag beaches, while others show the extent of search and rescue operations, the urbanisation of coastal cities over successive decades and the sites of prehistoric tombs and standing stones.

Following the publication of the Coastal Atlas of Ireland, Kandrot used Esri's ArcGIS Online to create a StoryMap, enabling people explore some of the maps and themes featured in the publication in more detail online. Comprising interactive maps, stunning imagery from professional and amateur photographers, and narratives written by subject experts, the StoryMap can be accessed free of charge by anyone. "The ArcGIS StoryMap provides extra information and an added dimension that the printed publication cannot give," Kandrot says. "It is a great complement to the atlas."

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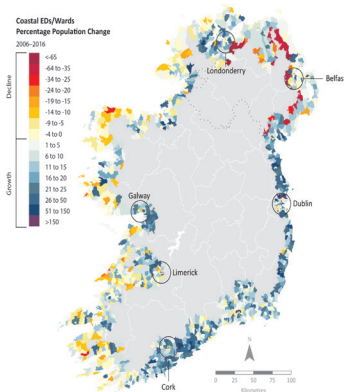Holywood | BT18 9AD
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Sarah Kandrot, co-editor of the Coastal Atlas of Ireland

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Percentage population changes in coastal electoral divisions and wards (2006–2016).

The Benefits

Top quality illustrations for a top quality publication
The maps created with ArcGIS are an essential part of the Coastal Atlas of Ireland. Produced in full colour, the maps add clarity and interest to the atlas and have contributed significantly to its success. In the 2021 An Post Irish Book Awards, the atlas was named the Journal.ie Best Irish Published Book of the Year.

Complex, professional maps created easily
The use of ArcGIS enabled Kandrot to easily consolidate data from the Republic of Ireland and Northern Ireland and work with data in different formats to create consistent all-island maps. She could also manipulate the data and filter out the data that she didn't need, in order to focus on coastal areas specifically. For example, she was able to use ArcGIS to show the locations of tower houses (15th-17th century fortified residences) that are within 5km of the coast.

Improved awareness of all-Ireland coastal issues
The diversity of the maps in the atlas helps to arouse the general public's interest in different aspects of Ireland's coast and draw attention to a wide range of topics, affecting coastal areas around the whole island of Ireland. One unusual and fascinating map shows the thousands of miles travelled by five seals around the coast of Ireland and beyond. "ArcGIS has enabled me to bring information to life and create maps to help people understand a variety of coastal issues," Kandot says.

Bonus information to explore beyond the pages
The ArcGIS StoryMap enables people to delve into more detail about some of the topics covered in the atlas, providing significant added value from the project. For example, people can zoom into maps of Machair habitats, one of the rarest kinds of coastal habitat in Europe, to see satellite imagery of what they look like, as well as where they are. People can also use the StoryMap to compare different sets of data on one screen, something that is more difficult to do by flicking over pages in the printed publication.

Clear understanding of the challenges for the future
The Coastal Atlas of Ireland, together with the StoryMap, shine a light on climate change, the impact it is already having on Ireland's coast and how we must adapt to it. "The maps in the printed publication and the StoryMap put the facts about climate change into context and promote discussion about what we must do to manage it," Kandrot says. "The huge amount of interest that we have seen in the Coastal Atlas of Ireland gives me hope for the future that people will take coastal climate change seriously."

Learn more at: esri-ireland.ie