

NI Coastal Observatory

MEDIN Open Meeting 2024

Aoibheann Rooney, DAERA NI



Welcome to the Northern Ireland Coastal Observatory

The Northern Ireland Coastal Observatory is a platform that has been created to collate, store, display and share coastal data.

The Northern Ireland Coastal Observatory aims to:

- Improve the evidence base of change along the Northern Ireland coastline
- Improve the awareness of coastal change in Northern Ireland and the impacts of our changing climate
- Empower stakeholders with information to help improve the management of coastal change in Northern Ireland

To access the Northern Ireland Coastal Viewer directly, please click on the map



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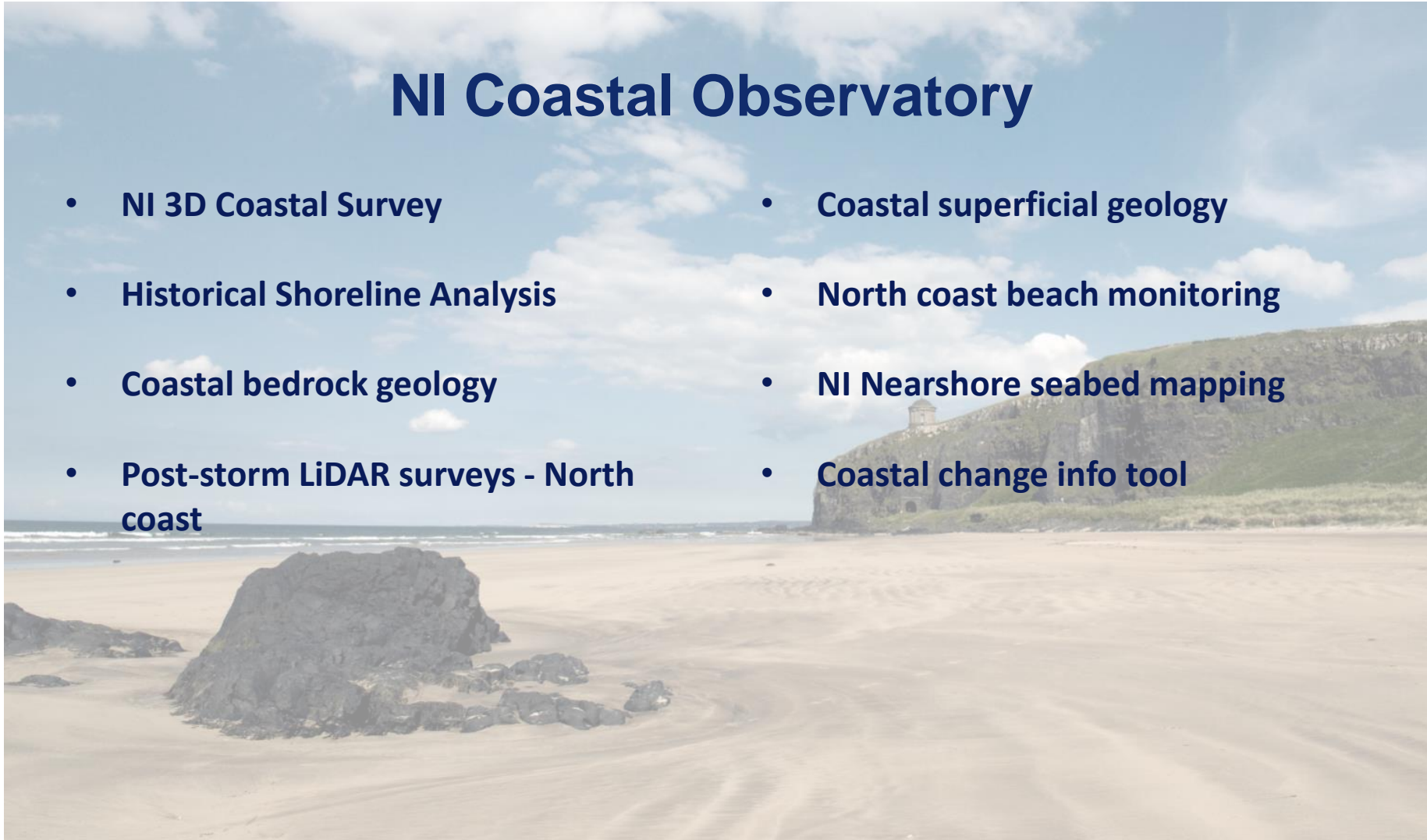
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NI Coastal Observatory

- NI 3D Coastal Survey
- Historical Shoreline Analysis
- Coastal bedrock geology
- Post-storm LiDAR surveys - North coast
- Coastal superficial geology
- North coast beach monitoring
- NI Nearshore seabed mapping
- Coastal change info tool



Nearshore Seabed Mapping Project



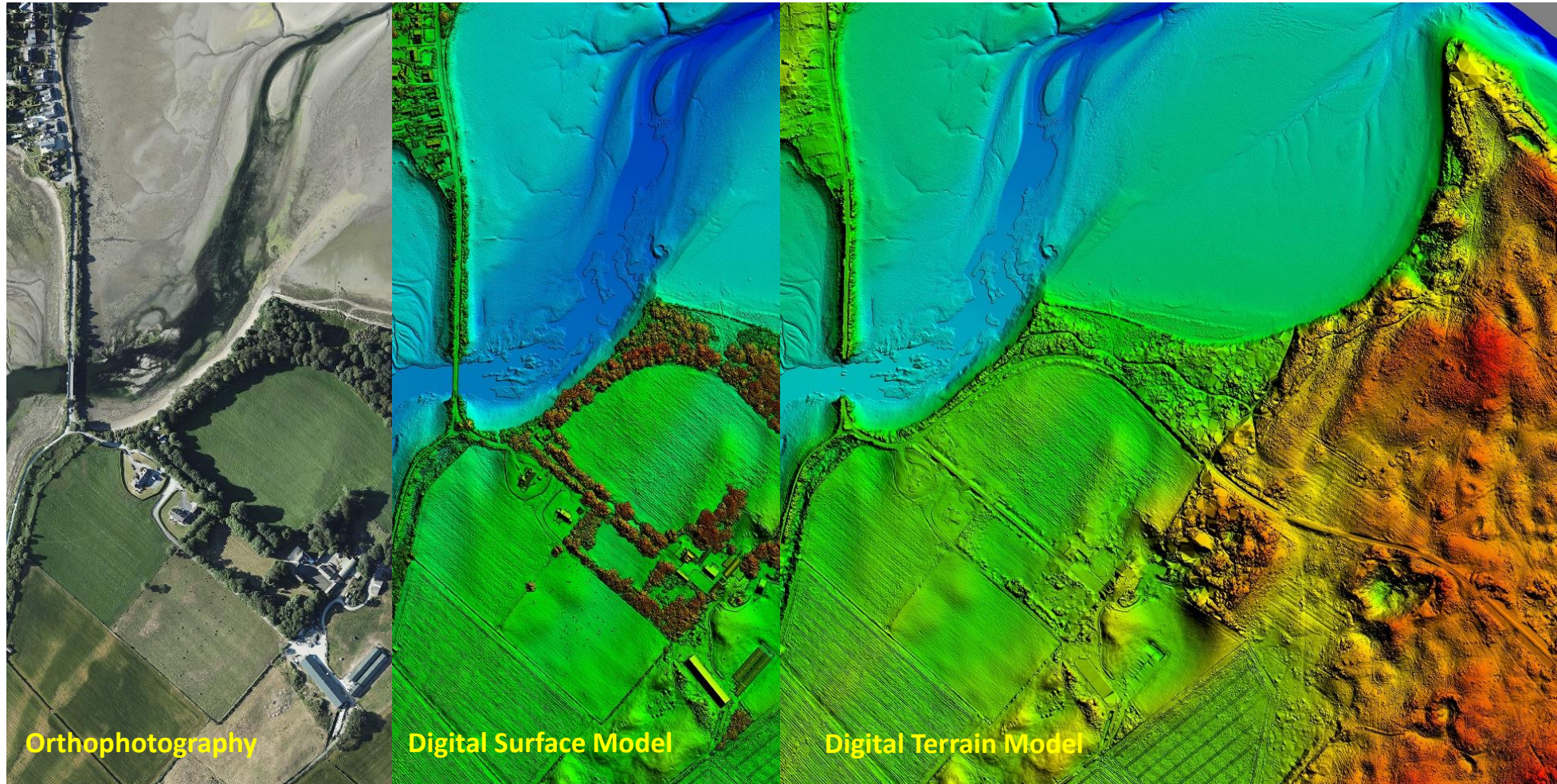
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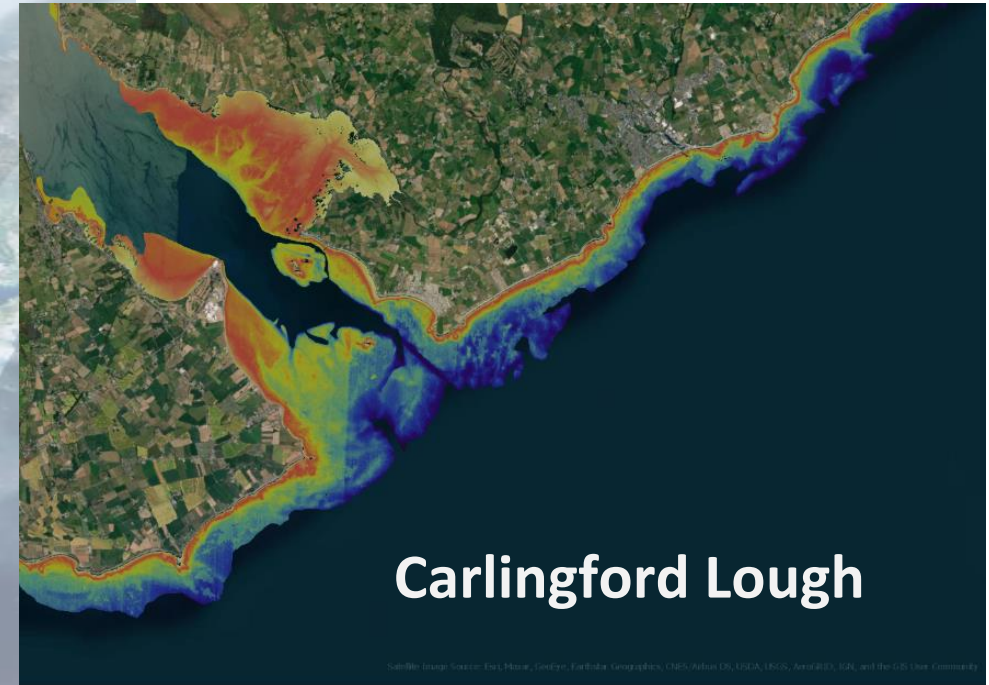
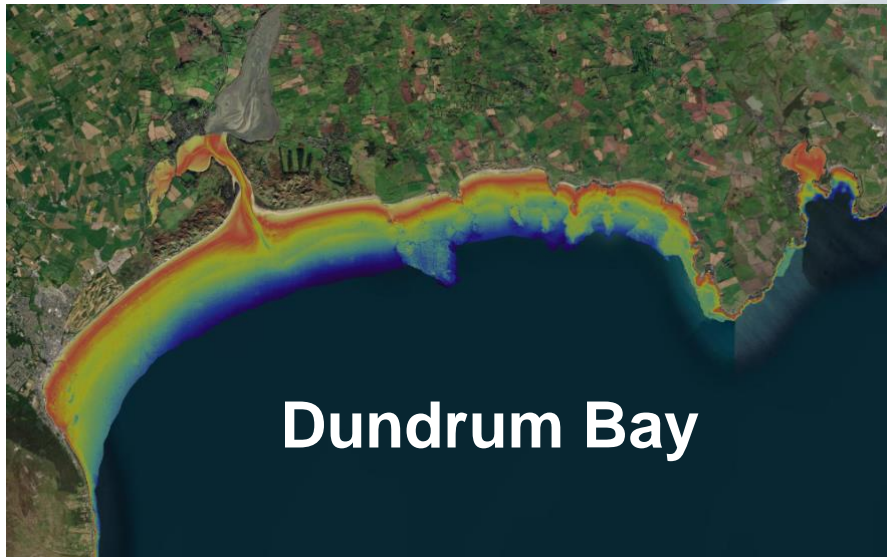
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Topographic LiDAR and Orthophotography



Satellite Derived Bathymetry



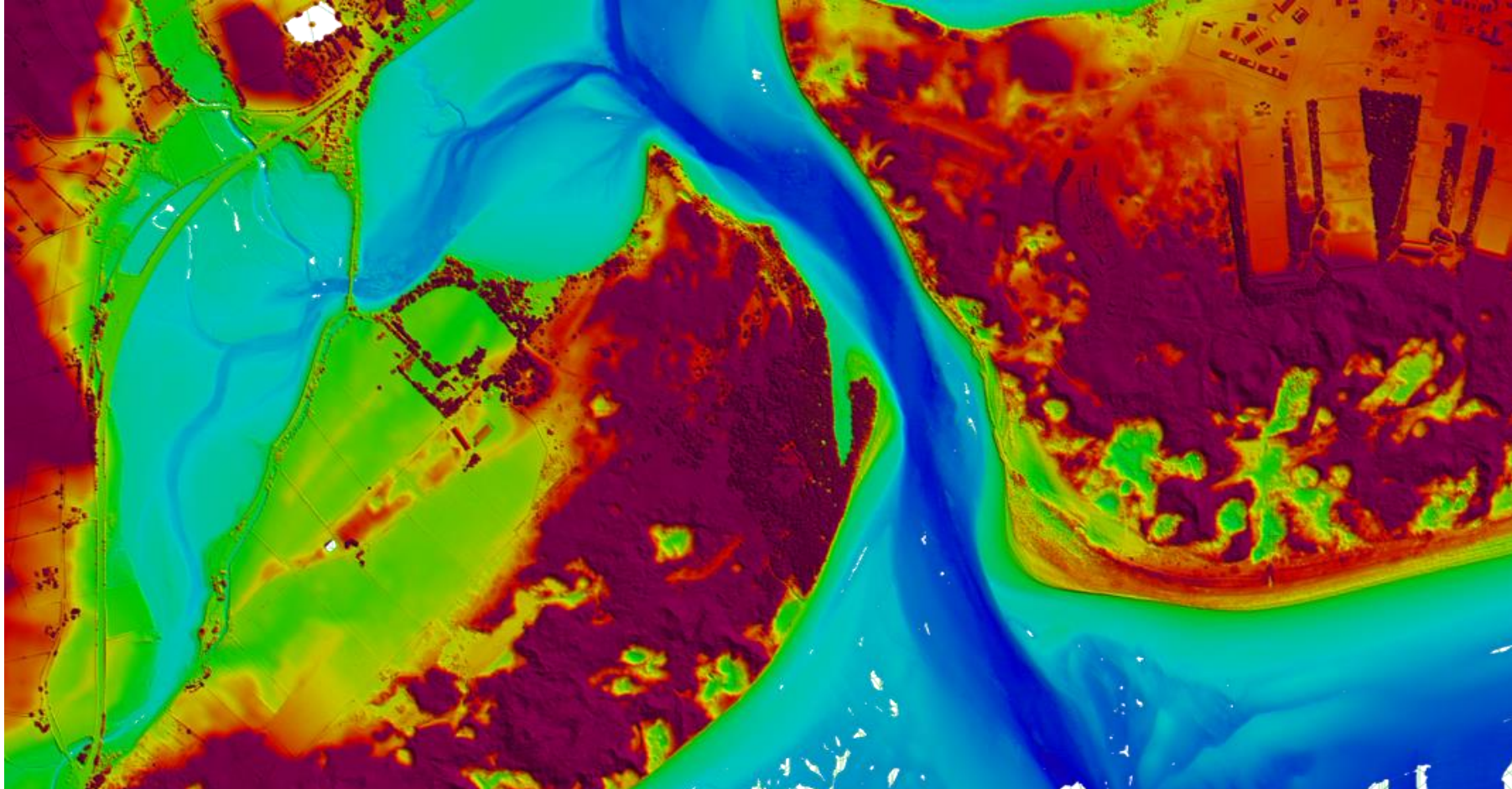
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Bathymetric Lidar



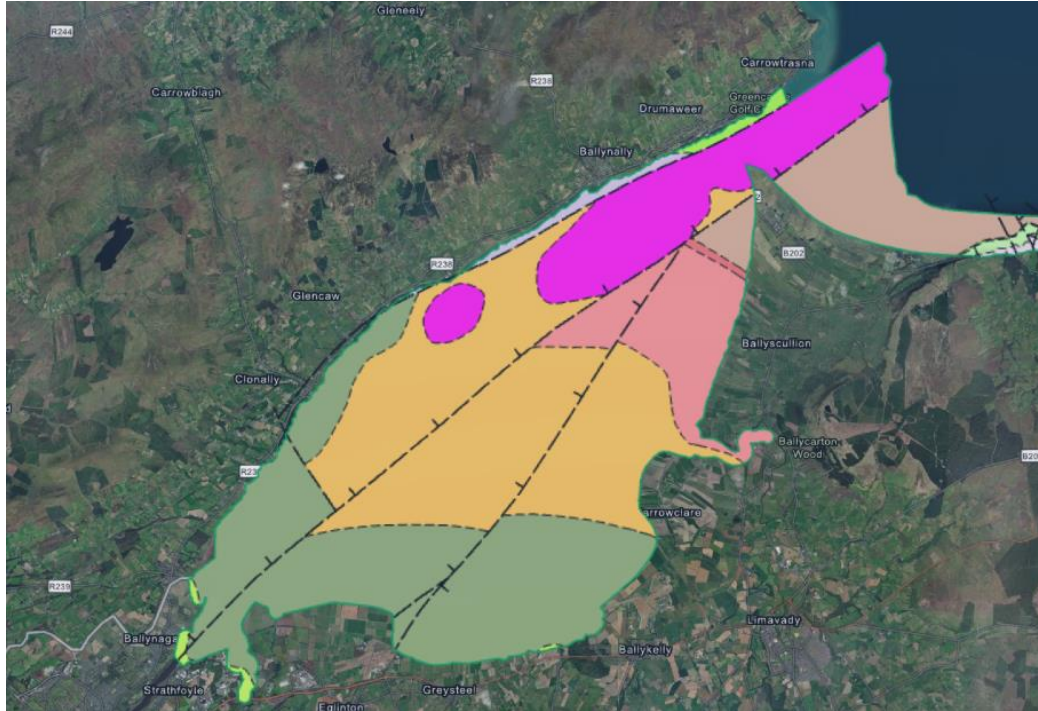
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Geological Coastal Bedrock Datasets



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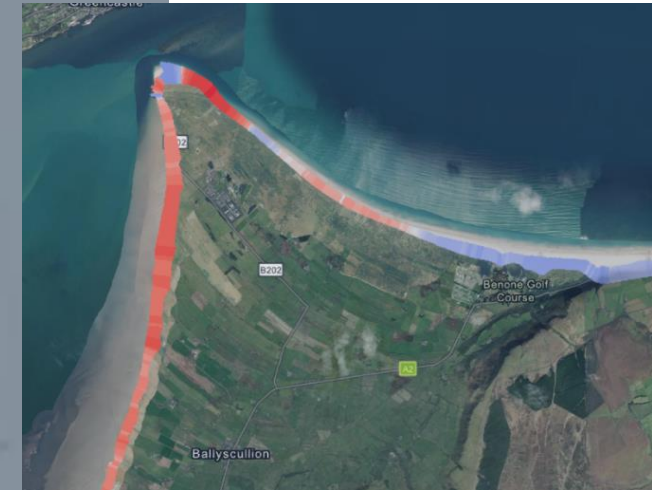
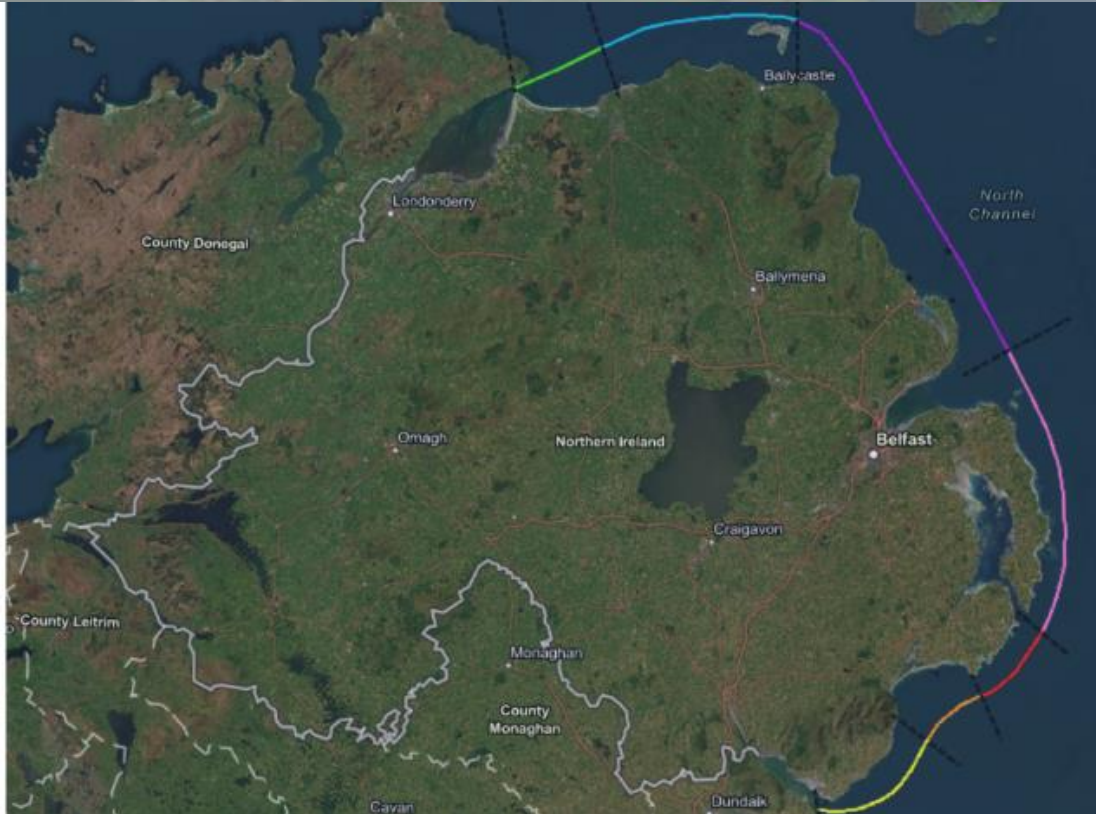
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Historical Shoreline Analysis

NI First Order Coastal Cell Delineation

Coastal Cells

- Greencastle (Carlingford Lough) to Bloody Bridge
- Dundrum Outer Bay (Newcastle Harbour to St John's Point)
- Lecale (St John's Point to Strangford)
- Outer Ards (Barr Hall to Ballymacormick Point)
- East Antrim (Whitehead to Fair Head)
- North Coast (Fair Head to Portstewart, including Rathlin Island)
- Portstewart to Magilligan



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North Coast Beach Monitoring



- **Monthly beach monitoring** at the five sites along the north coast.

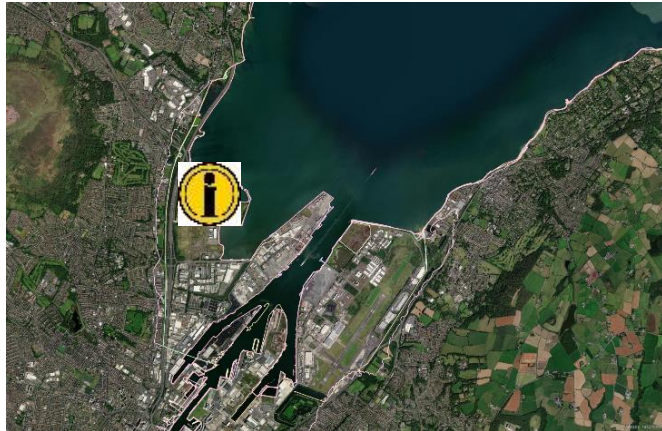
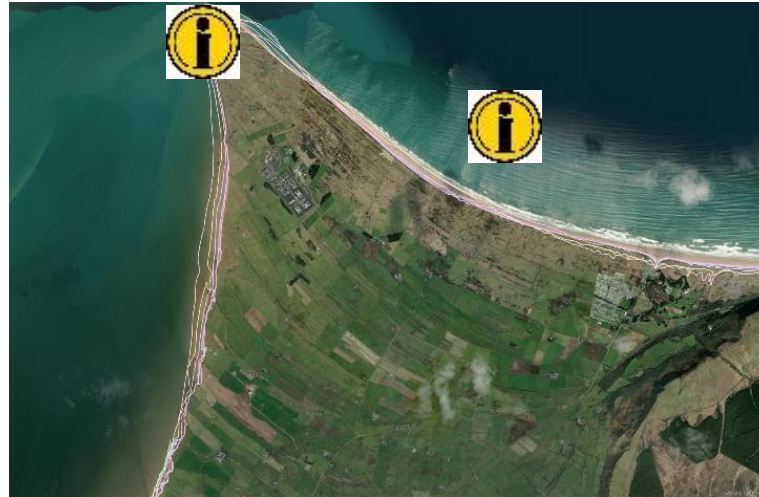
- **Survey report** contextualising the data collected with historical datasets acquired over a 17 year period.

- **Protocol** for an effective monitoring programme for soft sediment coastlines.

Coastal Change Info Tool



Geomorphological assessment to interpret changes observed in light of geological, dynamic and human factors. To include:



- Description of historic shoreline change
- Interpretation of changes observed (to include local information and geomorphological expertise)
- Identification of features of importance to shoreline dynamics at site (physical factors, engineered works)
- Statement of likely future shoreline behaviour



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Coastal Forum

The Northern Ireland Coastal Forum is a collaborative organisation which is made up of the Department for Infrastructure (DfI), the Department of Agriculture, Environment and Rural Affairs (DAERA), Chief Executives of Local Authorities with a coastal remit and the National Trust. The Forum is currently co-chaired by DAERA and DfI Permanent Secretaries and it is the agreed mechanism through which members work collaboratively in progressing coastal management issues in Northern Ireland. To learn more, please click on one of the topics below:

Coastal Forum

Coastal Forum Working Group

Coastal Forum & Working Group Members



Belfast
City Council



Coastal Forum Members

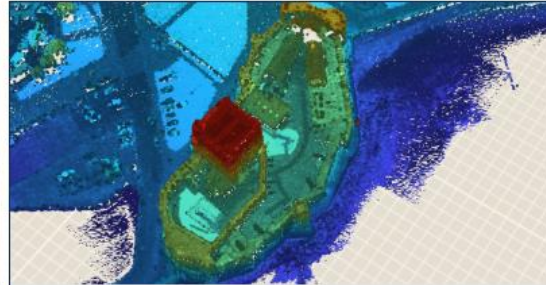


Learn About Our Datasets



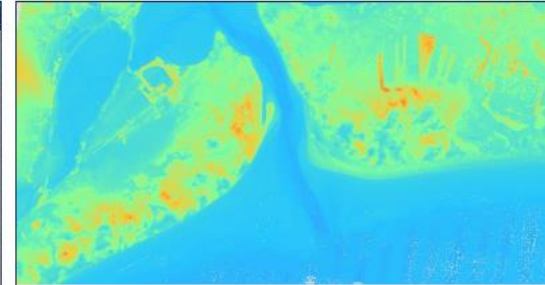
Orthophotography

[Click to Learn More](#)



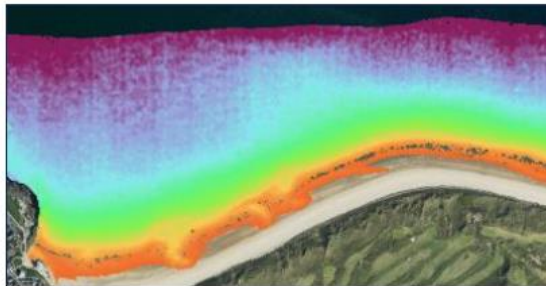
Topographic LiDAR

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Bathymetric LiDAR

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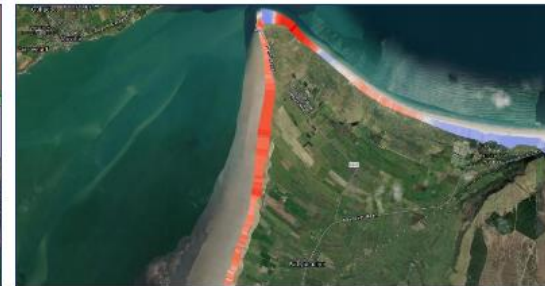
Satellite Derived Bathymetry

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Bedrock Geology

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Historic Shoreline Analysis

[Click to Learn More](#)



Project Information

To sustainably manage Northern Ireland's coastal environment, to protect our natural capital and to improve natural shoreline resilience, a detailed and comprehensive understanding of how our coastline has and continues to change is paramount. The Northern Ireland coastline is a hugely valuable resource, but it is currently facing increasing pressure from climate change. Sea level rise, in combination with an increase in extreme storm events, is resulting in greater energy impacting our coastline. Despite the importance of the coastline, the nature and scale of the issues arising from coastal change and sea level rise are currently not known and it has been acknowledged that insufficient baseline data is available. In response to this, DAERA has commissioned several projects which aim to provide a comprehensive baseline. It is anticipated that subsequent surveys will build on this, providing an accurate picture of exactly how, when and where the coastline is changing. These work areas are also a key objective of the Northern Ireland Coastal Forum.

Surveys Complete

Since December 2020 DAERA has commissioned over £1.7 million on evidence gathering at the coast. Surveys have deployed multiple methodologies, ranging from LiDAR, orthophotography, satellite-derived bathymetry, Ordnance Survey maps and geology maps. The icons below provide information on each of surveys complete.

Historical Shoreline Analysis

NI 3D Coastal Survey

Coastal Bedrock Geology

Post-Storm LiDAR Surveys

Surveys Ongoing

There are several ongoing projects being undertaken by external contractors on behalf of DAERA. These projects are highlighted below and aim to build upon the evidence base collected from those already completed. For example, the Northern Ireland Nearshore Seabed Mapping project is a continuation and expansion of the Pilot Bathymetric LiDAR survey completed as part of the Northern Ireland 3-Dimensional Coastal Survey. The Superficial Geology survey is a continuation of the bedrock geology survey undertaken by the GSNI in 2022 and aims to build our understanding of coastal geology. Finally, the Beach Monitoring Programme aims expand on previous topographic beach profiling work on the north coast by Ulster University contextualizing beach profile variations across a 16 year time period. The icons below provide information on each of ongoing projects.

Nearshore Seabed mapping

Coastal Superficial Geology

Beach Monitoring Programme

Coastal Change Information Tool

Quality Control of Data

To view the quality control information for the Coastal Observatory datasets, click the "View Quality Control Information" button below.

View Quality Control Information

Northern Ireland Coastal Viewer

Explore 2DExplore 3D

Earthstar Geographics | Department of Agriculture, Environment and Rural Affairs (DAERA), Bluesky | Department of Agriculture, Environment and Rural Affairs (DAERA), Ulster University (Grottoli, E., Biaisque, M., Jac... Powered by Esri

Datasets have been optimised for performance. Raster data has been cached at zoom scales up to, but not exceeding, the optimal resolution scale of the source imagery.

To reset the viewers, please refresh browser.

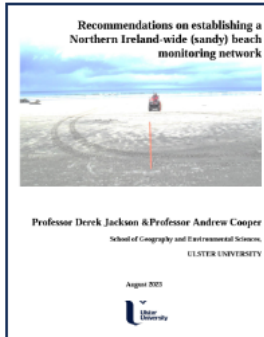


Reports

These reports relate to work commissioned by DAERA on coastal evidence gathering since January 2021.



Northern Ireland Historical Shoreline Analysis Project, April 2023 - Ulster University



Recommendations on Establishing a Northern Ireland Wide Beach Monitoring Programme Report



Coastal Heritage Resources Mapping Project 2022, October 2023 - DfC & DAERA



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Working towards FAIR Principles

The screenshot shows the OpenDataNI website interface. At the top, there is a search bar with the text "Search our data" and a "Go" button. Below the search bar, there is a navigation menu with links for Home, Datasets, Publisher, Showcases, Suggest Data, Links, News, About, and Contact. The main content area displays search results for the query "coast". The results are organized into sections for Organisations, Groups, Tags, and Formats. The first result is titled "16 datasets found for 'coast'" and is ordered by Relevance. It lists the Department of Agriculture, Environment and Rural Affairs as the organisation. Below this, there are three detailed results for "March 2022 - North Coast Post-Storm Survey - Digital Terrain Model". Each result includes a brief description of the survey and a list of available file formats (e.g., JSON, HTML, KML, CSV, SHP, GeoJSON).

The screenshot shows the MEDIN portal interface. At the top, there is a search bar with the text "Search for marine data across UK organisations" and a "Go" button. Below the search bar, there is a navigation menu with links for How-To, About, Contact MEDIN, and Share. The main content area displays a map of the UK and Ireland with a grid overlay. To the right of the map, there is a search form with fields for Date (From and To), Season of Interest, and Geographical bounding box. Below the search form, there is a section for DATA COLLECTIONS with buttons for UKHO, DASSH, Cefas, TCE, BODC, NIRW, MDSG, and BGS. There is also a section for ICES rectangles search. At the bottom, there are buttons for SEARCH, RESET, and MAP REFERENCE LAYERS.

Thank you

Aoibheann Rooney, 24th April 2024



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