

Inspiring young people to discover and use marine data

INFOMAR

Educational Outreach Programme

The Challenge

- Encourage wider use of the INFOMAR marine databank

The Benefits

- Young people gain an introduction to INFOMAR during their transition year studies
- Educational programme develops skills and interest in GIS and marine mapping

Students in Ireland now have an exciting opportunity to use Esri web and mobile technology in an inspirational new programme of education that aims to stimulate greater use of marine data.

The Challenge

Everyone is familiar with Ordnance Survey maps that plot each street, river and mountain in the Republic of Ireland. Yet, few people realise that similar maps are available charting every underwater gully, sandbank and ridge in 125,000 km² of sea bed around the country.

A fully integrated and georeferenced map of the Irish near-shore sea bed, together with a comprehensive record of physical, chemical and biological marine features, was developed in 2007 as a joint venture between the Geological Survey of Ireland (GSI) and the Marine Institute. Known as INFOMAR (**IN**tegrated **M**apping **FO**r the Sustainable Development of Ireland's **MA**rine **R**esource), this vast geoscientific databank is being constantly enriched and extended.

INFOMAR has proved invaluable to specific groups of people working in marine fields, including commercial fishermen, ports authorities and off-shore energy developers. However, GSI was concerned that too few people knew about INFOMAR outside of these industries. It therefore embarked on a project to widen awareness of INFOMAR among the general public – and young people in particular.

“Young people are the stakeholders of the future,” explains Archie Donovan, a principle geologist at GSI. “We wanted to find a way to take our marine data to students and get them interested in it. We had to make it exciting, so that they would remember it and come back to it again in their professional lives.”

The Solution

GSI invited organisations to tender proposals for an Educational Outreach Project that would engage 15-16 year old transition year students with INFOMAR. It received a strong response from a variety of different organisations, but Esri Ireland stood out on two counts. Firstly, and most importantly, Esri Ireland had the geographic information system (GIS) technology and expertise to meet all of the project's criteria in full. Secondly, Esri Ireland was prepared to subsidise this educational project and could therefore offer a very competitive package, at one tenth of the price of other bids.

Working with Esri Ireland, GSI developed a five-week programme of study, accompanied by the detailed lesson plans, student work sheets and teaching materials that teachers would need. During the course, students have the opportunity to use Esri's ArcGIS Collector App to survey areas of coastline. They collect data on seaweed species and litter and upload their findings using mobile phones while still on the beach.



Esri Ireland

Dublin

Block B | Ashtown Gate

Navan Road | Dublin 15

T +353 (0) 1 8693900 | F +353 (0) 1 8693901

Belfast

T +44 (0) 2890730165 | F +44 (0) 2890730167

E help@esri-ireland.ie | W esri-ireland.ie

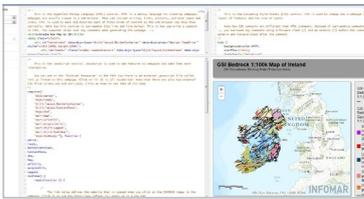
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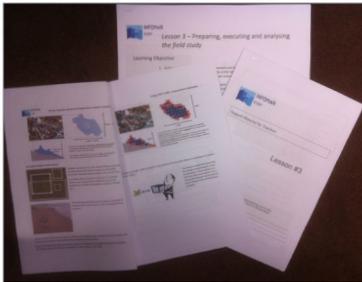
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Archie Donovan, principle geologist, Geological Survey of Ireland



An exercise showing students how basic web development can allow them to edit and manipulate their web maps by using basic HTML/CSS and JavaScript to change the appearance and content of their Maps.



INFOMAR provided the students with lesson plans and worksheets, also providing tutorial notes for the teachers.

Class Modules included “Developing a Web Map”, “Field surveys and data analysis” and Basic web development.

In the classroom, students use Esri’s cloud-based mapping solution, ArcGIS Online, to create their own maps of the survey area, using data from the INFOMAR database. They then incorporate the data they collected during their own beach survey and add contextual information, which enables them to perform analysis. ArcGIS Online acts as a geospatial content management system for the entire study programme, facilitating the sharing of data. “Students can see the connection between what they physically do on the seashore and the maps on their desktops, and then make sense of that information,” Donovan says.

Towards the end of the course, students have the opportunity to create their own GIS code, test it and publish it in a safe ‘sandbox’ environment, created by Esri Ireland in ArcGIS Online. Students can therefore edit JavaScript and experiment with techniques such as measuring polygons.

Benefits

Following a very successful pilot phase, the INFOMAR Educational Outreach Programme is now being made available nationally and is expected to play a significant role in helping to raise awareness of Ireland’s vast marine data resources. The course has been well received by the first student participants, and GSI is confident that INFOMAR has made a lasting impression on these young people. Certainly, Donovan believes that, “When the students grow up and get jobs in a marine industry or any aspect of geoscience, they will remember their first introduction to off-shore mapping data.”

The INFOMAR Educational Outreach Programme has the added benefit of giving young people exposure to advanced technology. Students have the opportunity to develop GIS skills that will help them in their future careers, as well as gain a deeper understanding of how GIS can benefit society, business and the environment.

“Our study programme stimulates students’ brains and demonstrates that maps are so much more than just posters on a wall in a classroom,” Donovan observes. “What we show students is the tip of the iceberg, but hopefully they will see that they can go on and do much, much more with GIS and the INFOMAR marine data.”

One student who took part in a pilot programme has already been inspired by his work with INFOMAR to use marine data in a project that he plans to enter in the Irish Young Scientist Competition. This alone clearly shows that the INFOMAR Educational Outreach Programme is achieving its goal and widening use of Ireland’s marine data.

Esri Ireland Dublin

Block B | Ashtown Gate
Navan Road | Dublin 15

T +353 (0) 1 8693900 | F +353 (0) 1 8693901

Belfast

T +44 (0) 2890730165 | F +44 (0) 2890730167

E help@esri-ireland.ie | W esri-ireland.ie

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