



Year in Review 2021

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 *Foras na Mara*
Marine Institute



**THE MARINE INSTITUTE,
AS A GLOBAL LEADER
IN OCEAN KNOWLEDGE,
EMPOWERING
IRELAND AND ITS
PEOPLE TO SAFEGUARD
AND HARNESS OUR
OCEAN WEALTH.**



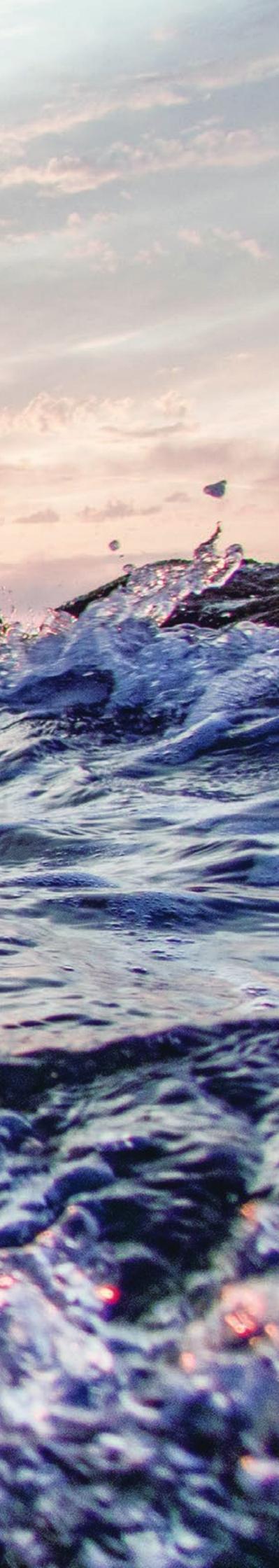
WHO WE ARE

The Marine Institute provides government, public agencies and the maritime industry with a range of scientific, advisory and economic development services that inform policy-making, regulation and the sustainable management and growth of Ireland's marine resources.

The Institute undertakes, coordinates and promotes marine research and development, which is essential to achieving a sustainable ocean economy, protecting ecosystems and inspiring a shared understanding of the ocean.







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PHOTO CREDITS

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MESSAGE FROM THE INTERIM CEO

I am delighted to present *Year in Review 2021*, a snapshot of some of the Marine Institute's many highlights and achievements during a busy and productive year.

The breadth and quality of some Institute activities captured in this publication are a testament to the commitment and innovation of our people as we work to realise our vision of the Marine Institute as a global leader in ocean knowledge, empowering Ireland and its people to safeguard and harness our ocean wealth.

Providing scientific advice and services to the Department of Agriculture, Food and the Marine (DAFM) and other government departments, agencies and stakeholders, including the public, is essential to achieving a sustainable ocean economy, protecting and managing our marine ecosystems, and meeting EU obligations.

The Institute provided detailed scientific data and analysis to support DAFM, particularly with regard to fisheries management. This included the publication of the annual Stock Book with the latest scientific advice on 74 key fish stocks of interest to Ireland.

In 2021, our Research Funding Office administered €8.6 million in new research investments awarded under the organisation's Marine Research Programme. This included €3.2 million for ship-time on the research vessels and remotely operated vehicle, and €5.4 million on research projects.

The RV *Celtic Voyager*, RV *Celtic Explorer* and ROV *Holland I* delivered busy schedules in 2021 despite additional pressures created by Covid. Some 6,152 km² of the Celtic Sea seabed was surveyed by the Institute's Advanced Mapping Services, with our partner Geological Survey Ireland. Important data and IT services were developed and delivered across the organisation.

Ireland's new multipurpose marine research vessel, RV *Tom Crean*, reached a key milestone in November when the hull was completed. The build process continues on schedule and on budget with the vessel due to come into service in 2022.

Ireland's maritime industry faced unprecedented challenges in 2021, arising from the impacts of Covid-19 and the departure of the UK from the EU. The Irish Maritime Development Office (IMDO) worked to address and overcome these challenges, through its work as advisor to the Department of Transport, its business development activities and supports it provides for research and education. The IMDO iShip Index, a quarterly weighted indicator that outlines trends within Ireland's shipping industry, grew by 5% in 2021 (the fastest rate of growth in the Index since 2017).

The Institute continued to play a vital support role for the work of DAFM, with its focus on quality science-based support towards the protection of marine environment, monitoring and advising on marine legislation requirements for Government, and ensuring the protection of consumer seafood safety.

The Oceans of Learning Engagement and Education series was supported by 33 partners and offered a new podcast series, live webinar, educational videos and 'Spotlight on Research' news features.

The Institute's investment in and commitment to our teams and people management processes was recognised through the achievement of platinum certification from the National Standards Authority of Ireland (NSAI) against Excellence Through People (ETP) 1000:2017.

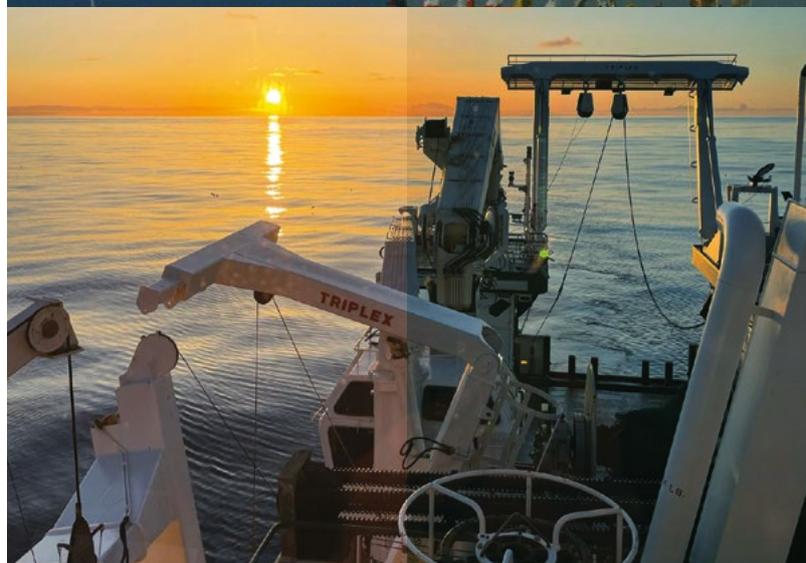
Thank you to Professor Alan Dobson, Professor J Owen Lewis and Lorcán Ó Cinnéide who retired from the Board in late 2020. Dermot Clohessy was re-appointed for a second term of office during 2021 and we welcomed Aodh O Domhnaill, Charlotte O'Kelly de Gallagher and Tom Tynan as new Board members.

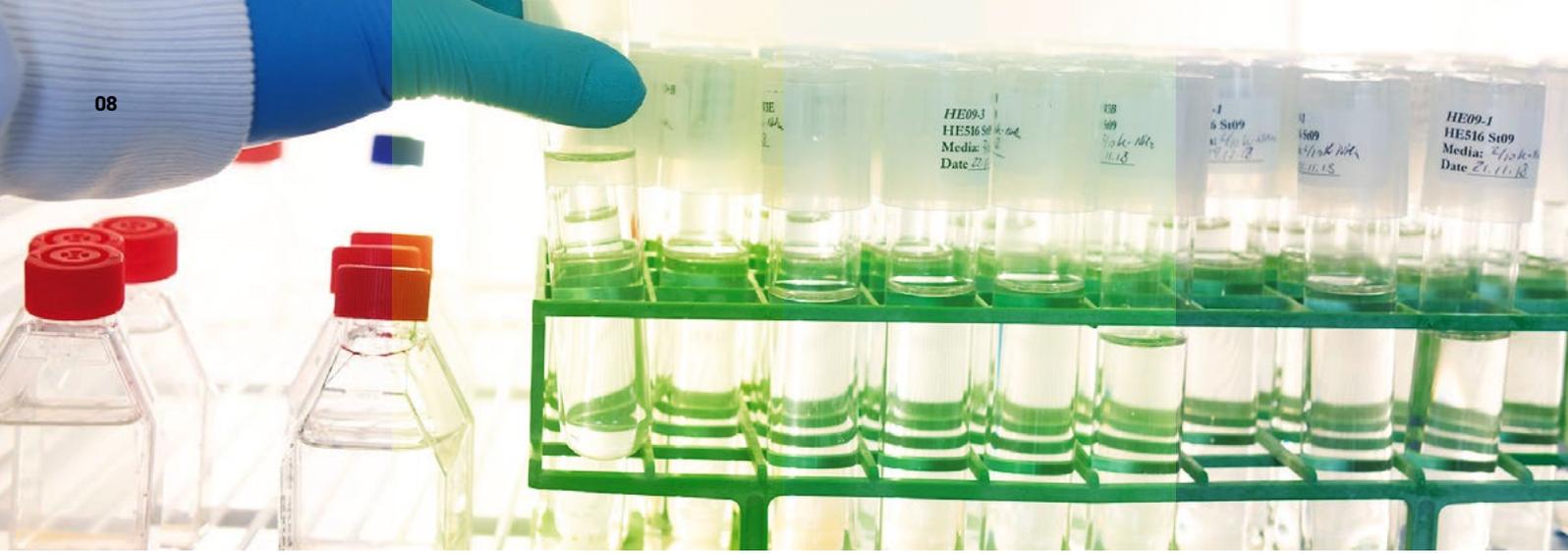
We thank the continuing Board members, Dr John Killeen, Professor Patricia Barker, Dr Berna Grist, Donal Kelly and David Owens

My sincere thanks to all of our partners and stakeholders, and to the staff of the Marine Institute for their commitment, flexibility and teamwork during this past year. We look forward to continuing to progress our activities in 2022 with your support.

MICHAEL GILLOOLY

Interim CEO - 31 January 2022
Marine Institute





SCIENTIFIC ADVICE AND SERVICES

A wide range of scientific advice and services are provided by the Institute to Government departments, agencies and stakeholders. These services play a vital role in protecting and managing our ecosystems, meeting EU obligations and achieving a sustainable ocean economy.

Key role in providing evidence basis to the Department of Food, Agriculture and the Marine

Throughout 2021, the Marine Institute carried out analysis and provided scientific support on a wide range of fisheries topics including Brexit. The restrictions imposed by Covid-19 continued to be mitigated through flexibility, innovation and resourcefulness.

Under the Data Collection Multiannual Programme (DCMAP), 18 research surveys were carried out on a variety of commercially exploited species to provide the basic data that supports stock assessment. A total of 1,775 scientist days were spent at sea focused on a broad range of species including mackerel, blue whiting, herring, anglerfish, megrim, Nephrops, cockles, scallop and lobster.

The annual Stock Book, delivered to DAFM, provided the latest scientific advice on 74 Irish stocks exploited by the Irish fishing fleet. The publication provides an evidence basis to support decision makers in setting sustainable catch levels, and is an invaluable reference guide to a wide audience.

The Marine Institute continued to support the Department in the development of the European Maritime, Fisheries and Aquaculture Fund (EMFAF) operational programme, which will fund much of the Institute's seagoing, biodiversity and fisheries work over the next seven years.

Marine Institute supporting implementation of Marine Spatial Planning

The Institute's assistance in developing the National Marine Planning Framework (NMPF) was acknowledged as a great example of cross-Government team work. This framework will be the key tool for marine planning decision-making. In December, the Maritime Area Planning Act was passed to empower the NMPF and establish the Maritime Area Regulatory Authority.

Supporting the Irish maritime industry through scientific advice and services

The Irish maritime industry was negatively impacted by the Covid-19 pandemic with trade and tourism volumes declining, and by Brexit as customs controls on movements between Ireland and the UK disrupted travel and established trade patterns.

The industry's response to these challenges has been impressive and was assisted by the IMDO through the provision of weekly trade updates and quarterly trade bulletins that monitored and reported on changes in trade volumes and patterns, and the provision of policy advice to the Department of Transport on maritime transport and related areas.

Marine Institute Seafood Safety Programmes

2,442 shellfish samples were sampled for the detection and quantification of toxins, which gave rise to 12,391 individual analyses. A number of samples during the summer months were observed to contain toxin concentrations above regulatory levels for DSP (Diarrhetic Shellfish Poisoning) which resulted in closures in the southwest and west of the country between July and August.

76 test reports were issued for cadmium in whole crab (181 crab dissections) for export following rapid turnaround analysis. Additionally, fish landings were sampled at ports (28 diverse samples analysed for environmental contaminants).

Seabed mapping exploring what lies deep below

Mapping the seabed provides key baseline data to support coastal and inshore infrastructural and economic development across a broad range of sectors including fisheries and aquaculture, maritime transport, marine renewable energy and marine tourism and leisure.

Advanced Mapping Services (AMS) INFOMAR survey activity during 2021, in partnership with Geological Survey Ireland, took place during 90 days of survey operations on the RV *Celtic Explorer* and RV *Celtic Voyager*. Over four separate surveys, 20 shipwrecks were investigated and 27 seabed samples acquired.

During 2021, AMS published the European Maritime Fisheries Fund (EMFF) funded SeaRover synthesis report, summarising three years of offshore reef habitat Remotely Operated Vehicle survey results (2017-2019). The project output will inform and support a range of areas including Marine Spatial Planning, fisheries management and Marine Protected Areas designation, reporting on Marine Strategy Framework Directive and more.



543,000

Fish and shellfish were measured and 56,000 individuals aged under the Data Collection Multiannual Programme



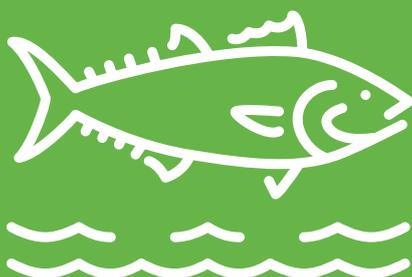
2,841

Seawater samples were analysed for toxic phytoplankton via light microscopy, and a further 210 samples were analysed under the Water Framework Directive for chlorophyll levels and occurrence of blooms



6,152km²

The area of seabed mapped in the Celtic Sea by the Marine Institute as part of the INFOMAR programme, in partnership with Geological Survey Ireland. This exceeded the Marine Institute annual target by 16%.



3,163

fish tested by the Fish Health Unit for diagnostics, research, or surveillance purposes. These were primarily Atlantic salmon but also included trout, wrasse and lumpfish and coarse fish.

FORECASTING OCEAN AND CLIMATE CHANGE

The Marine Institute works with national and international partners to observe and understand how our ocean is changing, to respond to current patterns of change, and to model likely future scenarios

Highlights of 2021 include:

Ocean Climate and Information Services (OCIS) continued to support Ireland's climate change research with a glider mission in deep waters off the west coast in early 2021. It also successfully completed the Ocean Climate annual survey and glider mission in the deep and shelf waters to the west of Ireland during March.

Three Argo floats, measuring temperature and salinity through the water column down to a depth of 2,000 metres, were deployed in the Rockall Trough to increase global data collection coverage efforts to improve modelling of ocean and climate change.

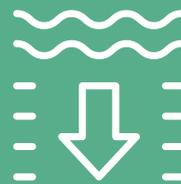
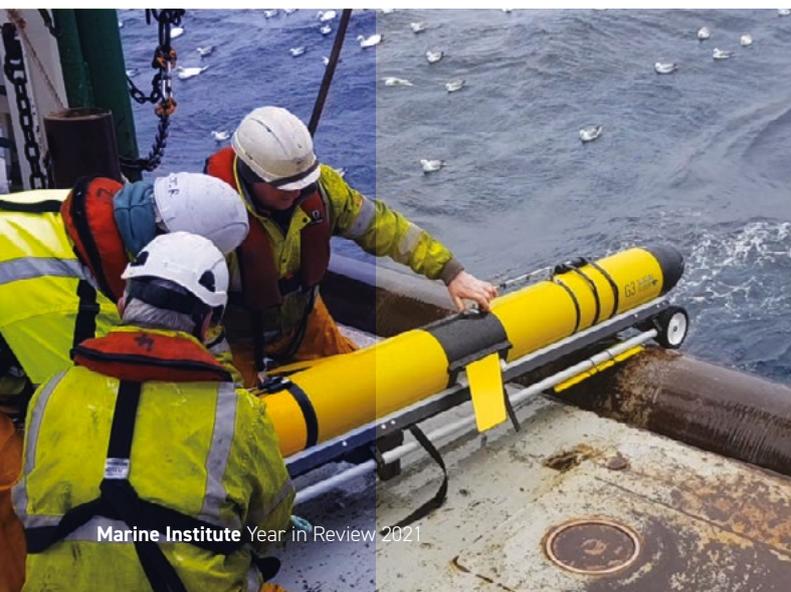
The Institute coordinated CoCliME project (completed in 2021) produced a number of products/services including; an ocean climate model for southwest Ireland, a harmful algal bloom (HAB) climate service with applications providing estimates for the present (1997-2016) and future (2017-2035), and outreach material to raise awareness about the ocean and ocean climate change.

In the Interreg CleanAtlantic project, the Institute and the UK's Centre for Environment, Fisheries and Aquaculture (CEFAS) carried out regional studies aimed at identifying natural hotspots for the accumulation of marine litter originating from land sources i.e. major rivers and ports.

The Institute initiated the development of a 30-year climatology product of temperature and salinity over the last half century (1971-2020), for the northwestern European continental region, in collaboration with Marine Scotland.

OCIS provided operational marine science services for the European Multidisciplinary Seafloor and water column Observatory (EMSO) SmartBay regional facility. The SmartBay Galway Bay facility makes a valuable contribution to the pan-European marine observation network of regional facilities operating as part of EMSO.

The Institute contributed to chapters of the Environmental Protection Agency's (EPA) climate state report in August for the Global Climate Observing System. A baseline report on essential ocean variables was also published in 2021.



MORE
THAN **50**

More than 50 stations were occupied, sampling critical ocean parameters (Conductivity, Temperature, Depth) in the Rockall Trough, as part of the Ocean Climate annual survey

RESEARCH AND INNOVATION

The Institute supports, coordinates and promotes marine research and innovation at national and international levels. It is also a research performer, participating in and leading national and international research partnerships that are strategically aligned with its advice and services.

€8.6 million in research awards granted under the competitive Marine Research Programme

In 2021, the Institute's Research Funding Office managed €8.6 million in new research investments under the organisation's Marine Research Programme. This included €3.2 million for ship-time on the research vessels and remotely operated vehicle, and €5.4 million on research projects.

The Programme funded a range of scholarship, fellowship, networking and project-based awards. There were seven new scholarships awarded under the 2021 Cullen Scholarship Programme call with a total investment of €770,000.

A substantial investment of €2.6 million was made in two major research projects focused on Blue Carbon and marine carbon sequestration (co-funded with the EPA), and €1.06 million in funding for three new post-doctoral fellowship awards, addressing research topics in ocean renewable energy, marine and coastal tourism and resilience in coastal communities.

Leading on new research into Paralytic Shellfish Poison in Ireland

Marine Environment and Food Safety Services (MEFSS) was awarded a DAFM Flexigrant research award as project lead, with Galway-Mayo Institute of Technology (GMIT) and University College Dublin (UCD) as research partners.

This four-year project will investigate the increasing abundance and distribution of Paralytic Shellfish Toxins in Ireland. This group of naturally occurring marine toxins -




€8.6M

in research awards granted under the Marine Research Programme in 2021

€11.7M

Total funding awarded to Marine Institute researchers from the EU Horizon 2020 programme (2014-2020). This represents a 180% increase on the funding achieved under the previous programme (Framework Programme 7).

which can occur in shellfish - can cause serious illness and fatalities to humans if consumed. The comprehensive sampling and analytical programme will be conducted in aquaculture areas, to identify the causes, timing, environmental factors and mechanistic pathways of toxin occurrence.

Two research projects delivering value for the Irish maritime industry

The IMDO's expertise in the maritime industry is augmented by research, with two external research projects already delivering value for the Irish maritime industry in strategically important areas.

The SHIP project, based in Queen's University Belfast, will deliver a roadmap that will guide Irish ports towards a sustainable future. The second research project is based in NUI Galway's Socio-Economic Marine Research Unit (SEMRU) and seeks to establish the socio-economic value of investing in the development of Ireland's maritime industry.

Innovative fisheries, ecosystems and aquaculture projects

The Marine Institute was successful at becoming the sole European tagging partner to the International Commission for the Conservation of Atlantic Tunas (ICCAT), in partnership with Stanford University. 14 more Bluefin tuna were tagged with satellite tags in 2021, bringing the total number tagged to over 90 since the collaboration began.

Innovative projects looking at fish movement continued with the SEAMONITOR project, successfully deploying and recovering an autonomous glider to track tagged salmon smolts. The Ecosystem Based Fishery Management and Aquaculture research teams secured major awards in SEAwise, MEESO, IFISH, Mission Atlantic and HYDROfish projects.

Ocean research and innovation continues to be a major focus

In 2021, the Institute continued its active involvement in the European H2020 funded project 'EuroSea' which seeks to improve and integrate the European Ocean Observing and Forecasting System. It was also actively involved in four EU Research Infrastructure Projects: GROOM-II, JERICO-D5, JERICO-S3 and E-ARISE.

The Eurofleets+ project, coordinated by the Marine Institute Research Vessel Operations (RVOps) team, had a successful third year of operations. Despite the challenges posed by Covid-19, seven Transnational Access expeditions were implemented in 2021 - a total of 62 Eurofleets+ Funded days, including a survey on the RV *Celtic Explorer* in May.

Expansion of the National Marine Research Database

The database was expanded in 2021 to include a new set of charts and heat maps to provide a visual representation of the information captured in the database. The heat maps display the intensity of funding to research performing organisations (RPOs) in Ireland and demonstrate the high level of international collaboration in marine research projects involving Irish RPOs. The database can be accessed on the Marine Institute website (marine.ie/Home/site-area/research-funding/marine-research-ireland/national-marine-research-database).

The collection and analysis of national marine research investment data has been carried out in collaboration with the Marine Research Funders' Forum, which is coordinated by the Marine Institute. The Forum collaborated with the Institute on preparations for the development of a successor to the National Marine Research & Innovation Strategy 2017-2021.

IRELAND'S OCEAN ECONOMY

In partnership with other agencies that underpin and promote sustainable economic development, the Institute supports Ireland's ocean and coastal economies through its research, ocean knowledge, infrastructure, advisory and regulatory services and maritime development opportunities.

More than 25 new or expanded shipping services commenced between Ireland and EU ports

The past couple of years have brought major challenges to the Irish maritime industry and to our ocean economy, caused by the impacts of the Covid-19 pandemic and by the UK's departure from the EU.

The IMDO engaged early with industry stakeholders and European ports, particularly those in France, Belgium and the Netherlands, in an effort to stimulate interest in new shipping services or the expansion of existing routes. These initiatives contributed to an unprecedented response from the shipping and ports sectors, resulting in the commencement of more than 25 new or expanded shipping services between Ireland and EU ports.

And they resulted in substantial increases in shipping capacity - below are just a few figures from 2021:

- The IMDO iShip Index, a quarterly weighted indicator that outlines trends within Ireland's shipping industry grew by 5% in 2021. This is the fastest rate of growth in the Index since 2017, and represents a return to the volumes of freight handled in 2018 and 2019, after the suppressive effect of Covid-19 on port traffic.
- Break bulk traffic across Irish ports rose significantly, increasing by 12%. This was driven by a return of construction activity in the domestic and international markets after severe restrictions within the sector in 2020.

- In the liquid bulk market, growth of 7% was driven by oil, Ireland's largest source of domestic energy. Imports of petroleum rose in all three of Ireland's Tier 1 ports in 2021, as demand for domestic and aviation fuel rose in line with the lifting of Covid-19 restrictions.

New technologies in the Blue Economy

The SmartBay facility in Galway Bay successfully hosted a variety of projects for the testing and proving of new technologies in the Blue Economy including: Chelsea Technology's verification trial of their new fluorometer, SEABER's trials of a new micro autonomous underwater vehicle (AUV) for mobile monitoring of coastal waters, National Oceanographic Centre's novel fibre optic artificial intelligence sensing of marine noise, seismicity, and seabed temperature, and TE Laboratory's demonstration of a novel nitrate/nitrite sensor.

INFOMAR activities in support of the Blue Economy

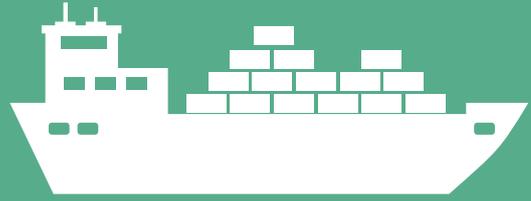
As INFOMAR moves into the final years of the national seabed mapping programme (ending in 2026), Advanced Mapping Services (AMS), working with Geological Survey Ireland, delivered two webinars during 2021 to communicate programme activities, and data, products and services, in support of the Blue Economy.

The first webinar provided specific updates relevant to the Offshore Renewable Energy (ORE) sector, while the second highlighted data and research capacity for supporting monitoring for resource and change management.

EU funded projects contributing to the development of the Irish maritime industry

The IMDO is currently involved in five EU funded projects, all of which offered opportunities for collaboration and integration across EU borders that benefitted the Irish maritime industry in 2021 and will continue to do so over the remaining lifetime of the projects. They are:

- The International Fast and Secure Trade Lanes (IFSTL) projects which will advance digitalisation in the maritime industry.
- The Ealing Project, a European flagship action for cold-ironing in EU ports, which involves ships using shore-based electrical power while in port.
- The Atlantic Smart Ports Blue Acceleration Network (AspBAN) – developing a dynamic acceleration services platform for Atlantic ports to work as blue economy hubs, thus diversifying their business models and revenue sources.
- The Atlantic Maritime Ecosystem Network (MarENet) – strengthening cooperation between maritime business and academia to increase the visibility of training and professional opportunities in the European Blue Economy sector.
- Maritec-X – an EU funded project that aims to establish the Cyprus Marine and Maritime Industry (CMMI), along broadly similar lines to Ireland’s Marine Institute.



54M

Just over 54 million tonnes of freight were handled at Irish ports in 2021, a 2.8 million tonne increase compared to 2020



More than 25 new or expanded shipping services commenced between Ireland and EU ports in 2021

OUR PEOPLE

The Marine Institute is committed to supporting a culture of high performance, driven by our people, whose skills, experience and passion for the marine are central to the work we perform for Government and other stakeholders.

The Institute's response to the Covid-19 pandemic highlighted the agility and flexibility of its people. All work programmes and essential service delivery have continued and the transition to a significant element of remote working has been smooth. This is a credit to the commitment, engagement, energy and effort of staff across the Institute, and the leadership and culture which drives and enables those qualities.

The organisation achieved platinum certification from the National Standards Authority of Ireland (NSAI) against Excellence Through People (ETP) 1000:2017 (a national human resource management scheme). Achieving this platinum certification for the first time recognises the Institute's investment in and commitment to our teams and people management processes.

Throughout the year, the Marine Institute celebrated the diversity of its people with video animations and Q&A profiles. Twenty-six people were featured in the 'Our People' series, sharing their study and career paths, the work they do at the Marine Institute and the important contribution their work delivers.



26

26 Marine Institute staff were featured in the 'Our People' series in 2021



The number of years that the Marine Institute has continuously held the prestigious Excellence Through People (ETP) certification

INFRASTRUCTURE

The Marine Institute operates national infrastructures that provide essential platforms for its Government services, national and international research and early technology development.

Research Vessel (RV) Operations

The RV *Celtic Explorer* completed a full survey schedule with the vessel carrying out 313 science days in 2021. This met all in-house survey requirements, ship-time funded programmes and externally funded surveys.

The RV *Celtic Voyager* completed the Marine Institute Underwater TV programme, the INFOMAR schedule for 2021, an internal oceanographic survey, as well as externally funded commercial surveys, third level training and academic research surveys. The vessel completed a total of 283 science days.

The Remotely Operated Vehicle (ROV) *Holland I* completed two science surveys in 2021.



New research vessel *Tom Crean*

Ireland's new state-of-the-art multipurpose marine research vessel, the RV *Tom Crean*, reached a key milestone with the completion of the vessel's hull in November.

The vessel, named after the renowned seaman and explorer, will replace the RV *Celtic Voyager* and will enable 300 operational days at sea and up to 3,000 scientist days each year. The build process continues on schedule, with the vessel due to come into service in 2022.

Our progress to "Get Greener"

The Get Greener team continued to engage with staff to promote efficiency in energy usage and encourage more sustainable operating practices during the year both at home whilst remote working and working in the field/onsite in our facilities.

The Oranmore facility has made a 44% energy saving since joining Optimising Power @ Work in 2015. Electricity consumption between 2015 and 2021 has reduced by 27% and LPG (Liquefied Petroleum Gas) consumption has reduced by 61% during this period.

Other infrastructure highlights:

- Final deployments of a significant range of observing infrastructure through EirOOS (Irish Ocean Observing System: A component of the European Observing System (EOOS)) project funded by Science Foundation Ireland and the Marine Institute to upgrade, replace and acquire new observation equipment.
- Glider missions undertaken at three locations: along the Rockall Trough, west of the Hebrides and north of Malin Head.
- Commissioning of two Global Sea Level Observing Stations (GLOSS) at Howth Harbour, Co. Dublin, and Union Hall Harbour, Co Cork.
- Increased coverage of the national waverider network from five buoys to six buoys through an additional waverider deployment in Clew Bay, Co. Mayo, supported through the Sustainable Energy Authority of Ireland (SEAI) Service Level Agreement.
- Deployment of the five new Irish Marine Data Buoy Observation Network (IMDBON) offshore observing platforms completed in 2021.



596



Survey days were undertaken collectively in 2021 by research vessels *Celtic Explorer* and *Celtic Voyager*

44%



Energy saving made by the Institute's headquarters at Oranmore, Co. Galway, since joining Optimising Power @ Work in 2015

DATA AND IT

Data is the foundation for the Marine Institute's evolving integrated advice and services portfolio and how it supports integrated maritime policy at national, EU and international levels.

Ongoing support and upgrades to the Institute's remote working, cyber security and network resilience capabilities took place in 2021 to facilitate continued remote working. Other improvements included new and upgraded services to improve digitalisation of the Institute's processes, and a new Storage Area Network (SAN), which will be used as the organisation's main storage system for the next seven years.

The Data and IT Matrix team progressed a number of areas such as external data sharing, digital collaboration, development of the Institute's digital platform and improvements to the Data Management Quality Management Framework. The IODE-accredited framework has now been applied to over 60 data processes, driving improvements in how data are processed, stored and reported, and providing greater confidence in the data processes underpinning the Institute's services.

Latest maps and data are available through Ireland's Marine Atlas (atlas.marine.ie), the Marine Institute data catalogue (data.marine.ie) and the national data catalogue (data.gov.ie).

120+ SPATIAL
LAYERS

The Marine Institute published 120+ spatial layers on Ireland's Marine Atlas data services, supporting the delivery of data for the National Marine Planning Framework, and for use in a Department of Housing, Local Government and Heritage web-based digital tool

30+ 

maps for the National Marine Planning Framework were developed from programme data from the Marine Institute and from many other organisations (as part of the Department of Housing, Local Government and Heritage Service Level Agreement)

ENGAGEMENT AND EDUCATION

Initiatives in engagement and education focus on increasing awareness and participation amongst citizens, communicating science and ocean knowledge and, encouraging a new generation of ocean professionals who will become leaders and champions for the marine environment.

Highlights of 2021 include:

The Oceans of Learning series (marine.ie/Home/site-area/areas-activity/education-outreach/oceans-learning-2021) was supported by 33 partners, and offered a new podcast series, live webinar, educational videos and short films, and 'Spotlight on Research' news features. The series produced high-quality content, including a new Sea Science Series with Mark Langtry ('The Science Guy') and a short film, *Ireland's Marine Life – Meet the Cast*, a collaboration with the Irish Chamber Orchestra and underwater filmmaker Vincent Hyland.

The Wild Atlantic – Sea Science exhibition at Galway City Museum (galwaycitymuseum.ie/sea-science/) was enhanced with new exhibition panels on climate change, 'Sea Our Surveys', seabed mapping and shipwrecks, deep sea species and scientific discoveries. A Remotely Operated Vehicle (ROV) simulator enables visitors to 'Dive Deep with the ROV *Holland 1*' and explore cold-water corals, shipwrecks and a rare shark nursery in Irish waters.

The Explorers Education Programme continued to adapt during school closures to deliver marine-themed modules to primary schools in Sligo, Donegal, Mayo, Galway, Clare, Kerry, Cork, Waterford, Dublin and Wicklow, reaching approximately 8,500 students. The programme also expanded to additional schools in Wexford, Limerick, Louth, and Leitrim.

In partnership with Geological Survey Ireland, AMS further developed and delivered a bespoke INFOMAR Seabed Mapping MSc module in NUI Maynooth and UCD, with fieldwork delivered in partnership with the Strategic Alliance for Marine Research & Training (SMART).

The IMDO also worked to increase interest in the maritime industry amongst school leavers, graduates, and the general public including through the Irish Seafarers Education Assistance Scheme (ISEAS) which provides training opportunities for cadets from the National Maritime College of Ireland (NCMI).





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