NOOS annual report 2018

**Member report - IMI**

November 2018

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| **Country** | Ireland |
| **Institution** | Marine Institute |
| **Observations****Status and new initiatives**  | ***Status:*** ***Operational***:* Weather buoy network consisting of 5 platforms (4 on shelf around Irish coast and 1 deep sea west of Porcupine Bank). Real time measurements of air pressure, air temperature, wind, sea temperature, wave height and period (the 4 coastal platforms measure wave spectra)
* 4 spectral wave buoys located on west coast of Ireland. Real time wave spectral and statistics data
* 17 operational tide gauges around Irish coast providing water level data in real time.
* 10 Argo floats currently operational
* Underwater Observatory in Galway Bay with operational instruments (CTD/DO, Fluorometer, ADCP, High Definition Camera, Hydrophone, Active Sonar)
* Acoustic Monitoring Buoy in Galway Bay
* Several monitoring cruises to collect physical, chemical and biological (esp. fisheries) data.

***New Initiatives:**** 2018 has seen the procurement of Ireland’s first biogeochemical profiling ARGO float
* Deployment of 12 Multi node underwater Acoustic array in Galway Bay test Site in 2019
* 5 new tide gauges came on stream in 2017/2018. Rosslare (southeast Ireland) is imminent.
* 3 Argo floats deployed in 2018
* Deep mooring (climate monitoring) deployed in Rockall Trough at location 15.5W, 53N in October. Includes Seabird CTD string and 2 Longranger ADCPs (500 and 1000m)

***Under development:**** GLOSS tide gauge infrastructure at Malin Head being upgraded to make it fit for purpose (operated by the Office of Public Works)
* GLOSS tide gauge site being assessed in southwest Ireland (Union Hall) and east Ireland (Howth)
* Ocean climate cruise (Rockall) to be moved from Jan/Feb to June in 2019 due to continual weather disruption of winter cruise
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| **Modelling****Status and new initiatives** | ***Status:******operational:**** Baroclinic (ROMS 3.7) model of northeast Atlantic (1-2 km resolution) with 2 nested models (~200 metres resolution) for west and southwest Ireland. Daily 3-day forecasts
* Wave model (SWAN) of IBI region waters (0.025 degree resolution). Daily 6-day forecasts

***New initiatives***:* A number of high resolution models (50-100 m) for the western seaboard of Ireland developed in 2017/2018 to support H2020/Interreg projects

***under development:**** Inclusion of wetting and drying and operational riverine input into our operational 200m Galway Bay model with boundary forcing directly from CMEMS IBI
* SW Ireland 1 km resolution model for climate services for aquaculture (HABs); 20 year hindcast + future climate scenarios (using high resolution (2km) atmospheric forcing (MERA reanalysis) for hindcast)
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| **Dissemination****Status and new initiatives** | ***Status:******Operational:**** Data Catalogue (data.marine.ie)
* Dissemination of observed and modelled data via ERDDAP (erddap.marine.ie) and on request
* Data contributions to ICES (CTD), SeaDataNET, EMODNET, CMEMS
* Modelling products (e.g. wave forecast time series, Lagrangian particle tracks for HABS bulletin, boundary data for external partner, web app “ADRIFT” for search and rescue (available on github))

***New Initiatives:**** Expansion and improved usability of data catalogue using Drupal software
* Begun the process of adopting an IODE Quality Management Framework to improve our data management processes and procedures

***Under development:**** Development of tidal atlas for Irish waters using constituents derived from operational northeast Atlantic model
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| **Relevant national projects** | * Restoration of native oyster in Galway Bay (EMFF-funded project)
* Imminent announcement of €2 million MI funded research programme for ‘Oceans in a Changing Climate’ incorporating improved observations, oceanographic and climate research.
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| **Relevant International projects** | * CO-CLIME (EPA funded under Joint Programming Initiative)

*(Co-development (11 partners) of Climate services for adaptation to changing Marine Ecosystems)** AtlantOS (H2020)

*(Optimising and Enhancing the Integrated Atlantic Ocean Observing Systems)** Jerico Next (H2020)

*(strengthen and expand the network of European coastal observatories)** TAPAS (H2020)

*(Tools for Assessment and Planning of Aquaculture Sustainability)** CleanAtlantic (Interreg AA)

*(protect biodiversity and ecosystem services in the Atlantic area by improving the capabilities to monitor, prevent and remove (macro) marine litter)** COMPASS (Interreg VA)

*(deliver the first fully coherent network of monitoring buoys across the regional seas of the Republic of Ireland, Northern Ireland and West Scotland)** iFADO (Interreg AA)

*(create marine services at regional and subregional scale using the EU Atlantic Waters as a case study)** MyCOAST (Interreg AA)

*(build a coordinated Atlantic Coastal Operational Observatory in the Atlantic area)** ProAtlantic

*(Delivering the EMODNET Atlantic checkpoint is a basin scale monitoring system assessment activity, based upon targeted end-user applications)* |
| **Additional information** |  |