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 |
| **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) |
| **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 |
| **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. |
| **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** |  |