

An Observing and Modelling System to Monitor and Forecast Extreme Marine Events

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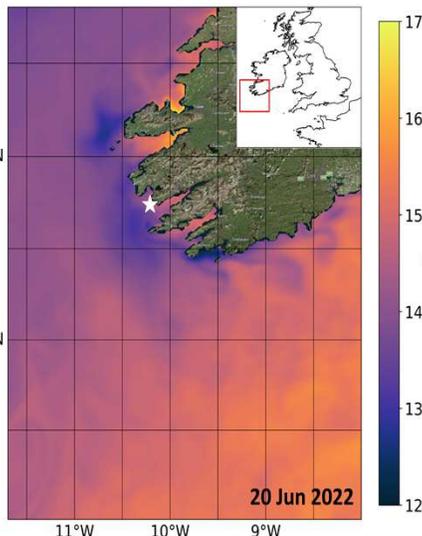
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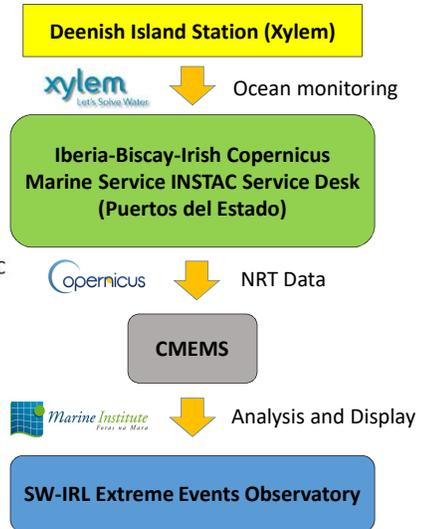
Aquaculture in the Southwest of Ireland coastal waters is an important economic activity. Stakeholders have expressed concern over the impact of climate change on aquaculture and biodiversity, mainly due to marine heat waves and possible drops in dissolved oxygen concentration.



Deenish Island Station



SST forecast and Deenish Island site (white star)



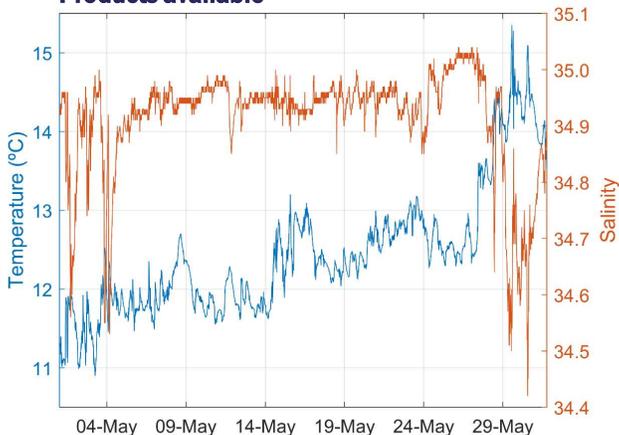
In-situ data flow

The recent deployment of a monitoring station at the Deenish Island (51°44'24.6"N 10°12'38.4"W) salmon farm, together with the availability of remote-sensing SST and hydrodynamic and biogeochemical models, makes it possible to provide stakeholders with up-to-date observations and forecasts of the marine conditions and harmful events at the farm.

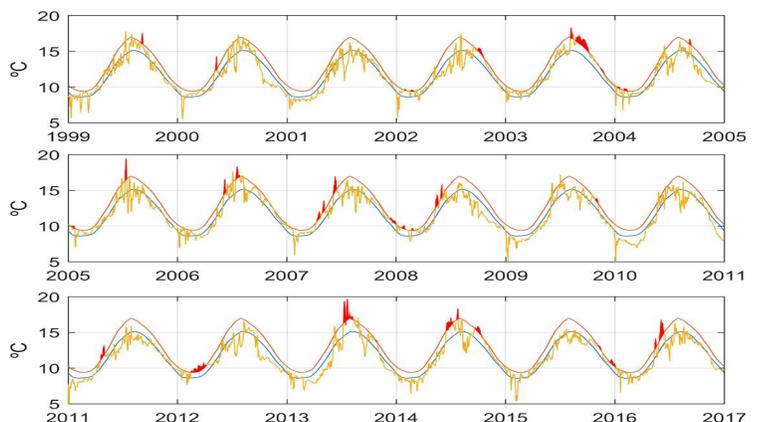
A web service delivering such information is presented. Forecasts will rely on the Met Office's Northwest Shelf Analysis and Forecast system. Remote-sensing data and Deenish Island in-situ measurements will be accessible through this portal too.

Diagram of the data flow from the Deenish Island Station to the Southwest of Ireland Extreme Marine Events Observatory web portal

Products available



Temperature and salinity from the Deenish Island buoy May 2022



1999-2017 surface Marine Heat Waves at Deenish Island from hydrodynamic model

Observations and 6-day forecasts from any site selected by the user from the map above. Temperature, salinity, pH, [O₂] and Chl *a* will be available. Where possible (e.g. Deenish Island), in-situ data will be shown

Warnings of Extreme Marine Events, including marine heat waves and low oxygen concentration events. Maps and time series of forecasted harmful events will be available. This will help in the assessment of damages to the aquaculture sector due to extreme environmental conditions.