

# Exploring Our Marine

## A Changing Ocean Climate

- The ocean plays a crucial role in the global climate system in a number of ways, including absorbing excess heat from the atmosphere and absorbing 30 per cent of the carbon dioxide added to the atmosphere by human activity.
- Heat in the ocean is at record levels, according to the State of the Global Climate 2020 report from the World Meteorological Organization (WMO). More than 80 per cent of the global ocean experienced a marine heatwave at some time in 2020, with widespread repercussions for marine ecosystems already suffering from more acidic waters due to carbon dioxide absorption.
- The Marine Institute operates many platforms at sea and around Ireland's coast such as offshore buoys, autonomous floats and vehicles, ship-based measurements and tide gauge stations which measure sea level, waves, temperature, salinity, oxygen, carbon, nutrients and ocean currents. These observation systems provide real-time data which is used to drive ocean forecast models.
- The Marine Institute works with national and international partners to observe and understand how our ocean is changing. Forecasting projections of our changing oceans and climate are essential to create effective policies and management decisions to safeguard our ocean.



*Foras na Mara*  
*Marine Institute*



The Marine Institute is Ireland's national agency responsible for marine research, technology development and innovation. By building ocean knowledge and delivering ocean services, the Institute aims to empower Ireland and its people to safeguard and harness our ocean wealth.

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