



Declaration on ocean observing and forecasting

Version 2, September 20, 2023 – including feedback from conference participants

We, ocean experts and stakeholders assembled at the EuroSea Symposium on Ocean Observing and Forecasting (21 September 2023, Paris) support a concerted effort to strengthen the European Ocean Observing and Forecasting System in a sustainable way to fit the growing demand of European society and policies and underpin the European Green Deal and the EU Mission Restore the Ocean and Waters by 2030.






Human systems rely on the ocean in many ways, regardless of where we live. The ocean is the primary regulator of the Earth's climate that makes this planet habitable to humans, and provide a rich supply of food, materials, energy, transportation, and recreational activities. The ocean is also a central element of several potential hazards, of both natural and anthropogenic origin. Some examples include hurricanes and coastal flooding, tsunamis, storm surges, sea level rise and harmful algal blooms. Extreme events are projected to intensify and increase in frequency under all climate change scenarios. Today's human-induced changes in the ocean such as warming, heat waves, changing circulation, ocean acidification, eutrophication, over-exploitation, and pollution all compromise the very ecosystem that humanity relies on for oxygen, water, food, medicines and climate regulation that ultimately will have negative impacts on the human population. Europe still has fundamental gaps in the ocean observing and forecasting capacity, limiting our ability to understand and sustainably manage the ocean and its resources. A

sustainable and fit-for-purpose ocean observing and forecasting system needs integration and coordination of national efforts. Such a system would need to coordinate the deployment of ocean observing efforts, ensure data sharing for proper access and interoperability, and support timely delivery of ocean knowledge and information for science-based management and the Blue Economy.

The EU-funded innovation action EuroSea brought together key European ocean observing and forecasting expertise with the overarching aim to "Improve and Integrate European Ocean Observing and Forecasting Systems for Sustainable use of the Ocean". EuroSea worked towards setting up **a truly interdisciplinary ocean observing and forecasting system that delivers the essential ocean information needed to support our wellbeing, the Blue Economy and sustainable management of the ocean.**

The EuroSea Symposium today took stock of some key EuroSea achievements.

We call on all European nations, scientists, policy makers and ocean stakeholders to:

-  Consolidate and appropriately fund European as well as National coordination of ocean observing efforts, and support the implementation of the European Ocean Observing System (EOOS);
-  Strengthen and sustain observations of essential ocean variables (EOV), ensuring they adequately and comprehensively reflect the user needs, and support coordination of best practices guidelines and standards and their uptake by the communities;
-  Strengthen coordination and mandate of ocean observing networks, and ensure a mechanism for efficient integration between them;
-  Elevate observing networks by investing in low cost technology solutions and technical innovations for continued improvements of data quality to respond to European policies and the blue economy;
-  Improve the operational monitoring and regular assessments of the ocean observing and forecasting system to identify gaps in the system and support observing design efforts;
-  Ensure seamless and timely data and metadata flow adhering to the FAIR principles;
-  Continue to improve ocean data assimilation systems and models to make the best use of ocean observations;
-  Develop multi-hazard observing systems and develop user-driven hazard maps and forecasts;
-  Integrate outputs of the observing and forecasting system with tools for end-users;
-  Improve the monitoring capacity of ocean carbon to support net-zero ambitions;
-  Further develop ocean forecasting indicators designed for user needs;
-  Promote, and capitalize on, collaboration between public and private entities for a reliable and sustainability EOOS and to ensure continuity of expertise within the ocean observing value chain;
-  Recognize the importance of diversity and equity in the Marine Science community, from management to implementation, and ensure regular assessment of strategies promoting inclusion