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UNDERSTANDING THE OCEAN BELOW THE SEAFLOOR Side event on scientific ocean drilling at the United Nations Ocean Conference 2025 (UNOC3)

The ECORD has recently initiated activities aimed at opening scientific drilling to the wide blue-ocean scientific community, the European Commission and policy makers to explore opportunities for future synergies.

In 2024, a White Paper was submitted by the European Consortium for Ocean Research Drilling (ECORD) and the International Continental Scientific Drilling Program (ICDP) to the Commission Expert Group on the Interim Evaluation of Horizon Europe presenting scientific drilling and advocating consideration in the scope of the future Framework Program of Research and Innovation. This document is listed in the Final report that was delivered by the Expert Group on October 16, 2024: Align Act Accelerate. Research, technology and innovation to boost European competitiveness (<https://op.europa.eu/en/publication-detail/-/publication/2f9fc221-86bb-11ef-a67d-01aa75ed71a1/language-en>).

A short document Scientific Drilling, -A globally ranging, distributed research infrastructure for Earth and Life Sciences fostering technological innovation was submitted to the Italian Ministry of University and Research in view of the hosting of the G7 Ministerial Meeting on Science and Technology in July 2024.

The largest initiative was the organization on June 3, 2025 of an off-site side event during the week before the United Nations Ocean Conference in Nice, with the coeval presentation of a poster on scientific ocean drilling at the One Ocean Science Congress, Nice 4-6 June, 2025.

The side event was conceived building from the consideration that the role of the seafloor is critical to understanding the ocean system, which is often underrepresented in policy-making processes and considered as a marginal component of ocean governance. Scientific ocean drilling is the basis for interdisciplinary research into interlinked Earth system processes that influence the future of our planet. It also provides fundamental tools for managing the energy transition and tackling the growing societal and lifestyle challenges that we face. The motivation stressed the crossdisciplinarity of scientific ocean

drilling, encompassing Earth and Life sciences and including environmental change, the Earth's climate system, geohazards, georesources, the deep biosphere and the origin of life, geodynamic processes and the life cycle of tectonic plates. A strength of scientific ocean drilling was identified in the need for technological innovations that include drilling technology, downhole measurements and observations, big data analysis and data science.

The aim of the event was to demonstrate to the blue ocean scientific community and policy makers the opportunities for future synergies with seabed and sub-seabed observation and exploration on a global scale, addressing representatives of governments, funding bodies and international organizations that focus their activities on earth and marine sciences.

The event was organized by ECORD with the support of the International Ocean Drilling Programme (IODP³). It was hosted by the Institut de la Mer de Villefranche-sur-Mer, France (IMEV) and was convened by Angelo Camerlenghi, ESSAC Chair. The program included four keynote presentations illustrating the key elements of scientific ocean drilling:

- Scientific ocean drilling – Observing the ocean past to inform the future of our Planet. An overview by Rosalind Coggon, University of Southampton (UK);
- Introducing the International Ocean Drilling Programme (IODP³) by Gilbert Camoin, CEREGE (CNRS, France) and EMA Director;
- Technological challenges in scientific ocean drilling by Dave McInroy, BGS-Edinburgh (UK) and ESO Science Manager;
- Scientific ocean drilling for Sustainable Development Goals by Michael Strasser, University of Innsbruck and ESSAC delegate for Austria.

Statements on scientific ocean drilling were provided by Nicolas Arnaud, INSU Director (CNRS, France), Mitchell Malone, Director of the Scientific Ocean Drilling Coordination Office (SODCO, USA), Qizhen Chen, Executive Deputy Director General of ACCA21 (National Science Foundation of China), Kawano Takeshi, Executive Director of JAMSTEC (Japan), followed in alphabetical order by Jas Chambers, Chair and Co-founder, Ocean Decade (Australia), Farid Chemale Junior, Coordinator of the INCT-Atlantic (Brazil), Mary-Lynn Dickson, Director of the UNCLOS program in Canada, Gelsomina Pappalardo, CNR IMAA Director, ESFRI vice-Chair and National Italian delegate, Sverre Planke, Professor University of Oslo (Norway), Antony Morris, Chair of the NERC UK-IODP Programme Advisory Group, Lisa Simone de Grunt, Director of Programmes of the World Ocean Council.

The event was concluded with the presentation of the 'Declaration of Commitment to Scientific Ocean Drilling', in which all participants in the Side Event declared that:

- Scientific ocean drilling with its synergies with scientific continental drilling, shall remain a priority in the development of future policies and strategies aimed at:
 - Understanding the Earth, its oceans and cryosphere, and the microbial life they host;
 - supporting informed decision-making for a sustainable and safe blue economy;
 - contributing to the achievement of the UN Sustainable Development Goals;
 - promoting ocean literacy.

- The implementation of future scientific ocean drilling programs shall be guided by the enduring principles that inspired previous programs, as outlined in the 2050 Science Framework, including:
 - Open access to samples and data;
 - Standardized measurements;
 - Bottom-up proposal submission and peer review;
 - Transparent regional planning;
 - Promoting safety and operational success through site characterization;
 - Regular framework assessments;
 - Collaborative and inclusive international programs;
 - Promotion of diversity and inclusion.
- Based on the enduring principles listed above, all necessary actions shall be undertaken to promote international cooperation in the context of scientific ocean drilling, implement new expeditions, enhance the scientific value of legacy data and samples, engage new generations of scientists, expand stakeholder engagement, and ensure continued national participation and support.

Over 100 participants, both online and in person, attended the event.

The event was endorsed by the UNESCO Ocean Decade, reinforcing the global commitment to foster scientific knowledge and innovation to ensure a healthy and resilient ocean.

At the One Ocean Congress, under Theme 10: Vibrant science to inform and support ocean action, international collaboration in ocean sciences and technologies, a poster entitled “The international Ocean Drilling Programme (IODP₃) – Exploring the Ocean’s past to inform on their future” and authored by Hanno Kinkel and Angelo Camerlenghi was displayed.



Links: Program Side Event, keynote presentations and Declaration:
<https://www.ecord.org/understanding-the-ocean-below-the-seafloor/>

Angelo Camerlenghi, ESSAC Chair,
Gilbert Camoin, Director of the ECORD Managing Agency,
Annalisa Iadanza, Vice-Chair of the ECORD Council.