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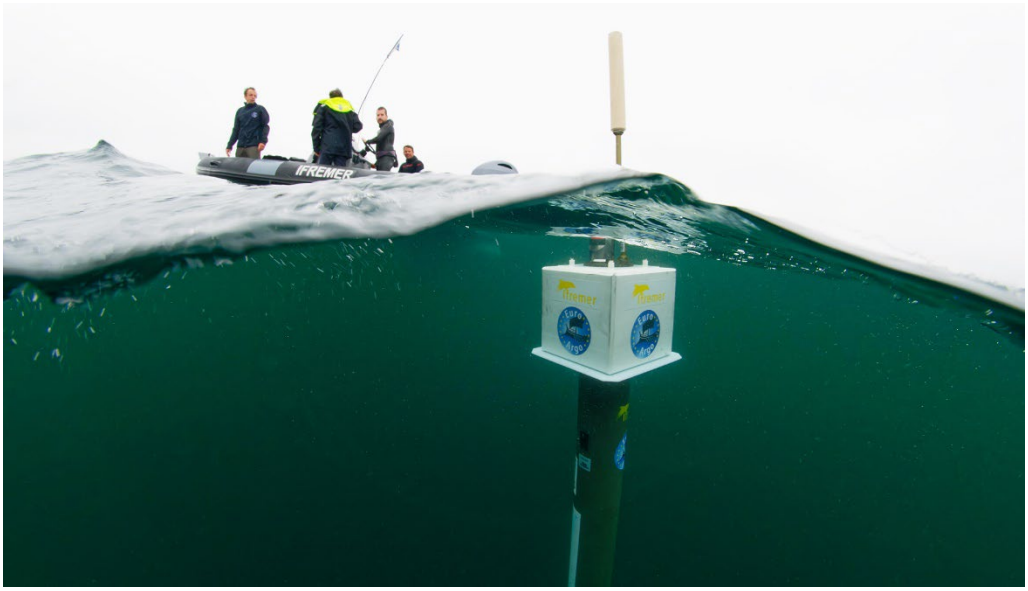
Press release June 2, 2025

Ocean monitoring: an international call to urgently strengthen the Argo program



Deployment of an Argo Arvor profiler – CC-BY : Ifremer, Olivier Dugornay

As the 3rd United Nations Ocean Conference (UNOC3) gets underway, the international community is drawing attention to the pivotal role of the Argo ocean observing program, as featured in a recent article in Frontiers in Marine Science. Argo provides critical data to understand the ocean's dynamics and monitor its ongoing changes. The program is now evolving into its new phase, "OneArgo," which aims to address emerging scientific priorities, including the influence of the deep ocean on climate, ocean deoxygenation and acidification, and the global carbon cycle. Sustained and reinforced financial support are urgently needed to enable full implementation of OneArgo and give our societies the means to preserve the many services that the ocean provides and to face up to today's major climatic and environmental challenges.

Press contacts :

Ifremer
+ 33 6 07 84 37 97 /
+ 33 6 15 73 95 29
presse@ifremer.fr

CNRS
+ 33 1 44 96 51 51
presse@cnrs.fr

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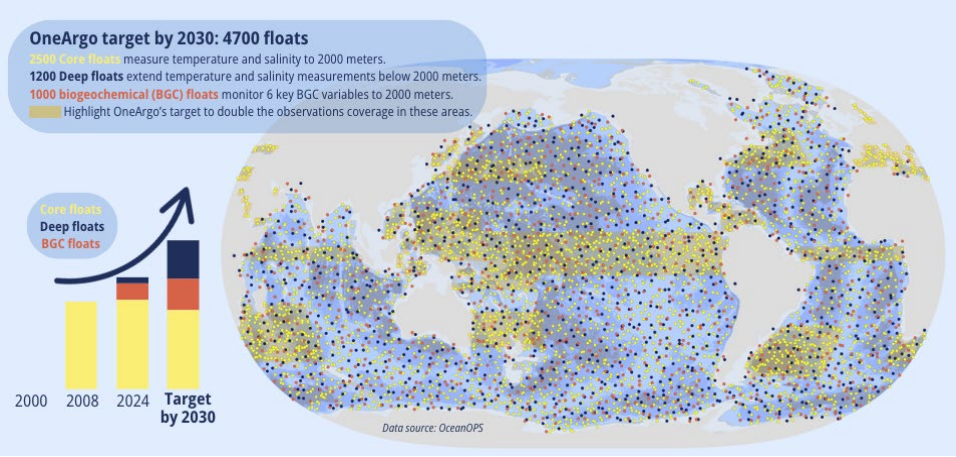
FROM ARGO TO ONEARGO: STRENGTHENING OCEAN OBSERVATIONS TO SUPPORT CLIMATE DECISION-MAKING

Launched in the early 2000s, the international Argo program has revolutionized our ability to observe and understand the ocean in real time, thanks to a global network of 4,000 autonomous floats deployed across all oceans. Deployed from ships, these autonomous underwater instruments drift with ocean currents for up to six years, measuring ocean temperature and salinity from the surface down to 2,000 meters. They take the “pulse” of the ocean. The data collected are then transmitted by satellite to the scientific community, providing a vital resource for ocean monitoring and research.

By 2030, the program aims to expand its observational capabilities, enabling comprehensive monitoring of the global ocean – from surface to seabed – and broadening the range of physical and chemical parameters it monitors. Argo becomes OneArgo – a global, full-depth and multidisciplinary ocean observing system.

Among the 4,700 profiling floats targeted in the OneArgo array, 1,200 will have deep-ocean measurement capabilities down to 6,000 m (Deep floats) and 1,000 will monitor key biogeochemical parameters (BGC floats), such as pH, oxygen content, chlorophyll, light, suspended particles and nitrate concentrations. Implementation of OneArgo is already underway, with 500 BGC floats and 200 Deep floats currently operational.

The data, openly and freely accessible, provide tangible benefits to society. They support informed and evidence-based decision-making in a wide range of domains – maritime safety, weather and climate forecasting, sustainable management of marine resources, ecosystem resilience, and adaptation to extreme events. With climate change, and human activities in general, exerting increasing pressure on our environment and lifestyles, this information is more crucial than ever.



OneArgo by 2030: 4700 floats – 2500 Core floats measuring temperature and salinity down to 2000 m; 1200 Deep floats extending temperature and salinity measurements below 2000 m; 1000 biogeochemical (BGC) floats monitoring 6 key BGC variables down to 2000 m.

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ONEARGO: SECURING SUSTAINABLE FUNDING IS CRITICAL TO STAY AHEAD OF ENVIRONMENTAL CHALLENGES

Through this publication, the international community speaks with one voice: it is vital to ensure the long-term sustainability of the Argo program and to fully implement its OneArgo expansion by 2030. This ambitious evolution provides society and policymakers with the foresight needed to respond effectively to the climate and environmental challenges — deeply interconnected with the ocean — that we collectively face. In a context of rapid changes in the Earth system driven by human activities, maintaining and strengthening our ability to understand and monitor the ocean is essential. It is a prerequisite for developing the best adaptation strategies and for safeguarding ocean health and biodiversity, food security, the maritime economy, and human well-being.

Today, the entire Argo value chain - manufacturers, research institutes, operators, and scientists - is fully mobilized to meet the OneArgo challenge over the next five years. The goal is to build on the expertise gained to sustain the existing network, while evolving it towards a more comprehensive and integrated coverage. The stakes are clear: preserve the services provided by Argo and ensure the continuity of long-term observational records, which are essential for monitoring climate change. Yet, despite its recognized scientific and societal value, OneArgo currently receives only partial and short-term research-based funding.

Faced with the uncertainties of international funding, OneArgo's realization requires, more than ever, sustained and significantly increased investment. This means breaking with the logic of project-based funding, in favor of an institutionalized, long-term model - like meteorological observation systems, which have long been supported by stable public and private funding.

Investing in OneArgo today means offering the society with the ability to navigate serenely and foresightly in a changing world.

Read the Article: Thierry V., H. Claustre, *et al.*, (2025) Advancing Ocean Monitoring and Knowledge for Societal Benefit: The Urgency to Expand Argo to OneArgo by 2030, Frontiers in Marine Science.
doi:10.3389/fmars.2025.1593904

Meet the authors! Scientists from the Argo community will present these topics during two town-hall meetings at the One Ocean Science Congress in Nice to initiate a dialogue on the future of global ocean observation and its implications for our society:

- **On June 4, 2025 at 10:30 AM, at the au EU Digital Ocean Pavilion, Inspire Zone of La Baleine** (Green Zone),
- **On June 5, at 12:45 PM at Port Lympia** (Room 1 – Blue Zone).

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The publication is organized around six major themes :

- The ocean: both shield and victim of climate warming
- The physical and biogeochemical processes governing the ocean
- Ocean observation: a sine qua non condition for oceanic and weather forecasting, and extreme events
- The structuring role of OneArgo within the “in situ/spatial observation/modeling” triptych, essential to address climate challenges and improve ocean understanding
- Ocean monitoring for sustainable resource management
- The OneArgo community and its commitment to passing on ocean science to future

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