

THE ARGO PROGRAMME AND PROFILING FLOATS

the Ocean's sentinels



Argo is an international programme that aims to collect a wealth of information on the World Ocean. Its network of profiling floats measures temperature, salinity, pressure, or else chemical or biological properties such as oxygen, pH, nitrates or chlorophyll. These measurements are important for improving our knowledge and understanding of the Ocean's functioning and its role in global climate change.

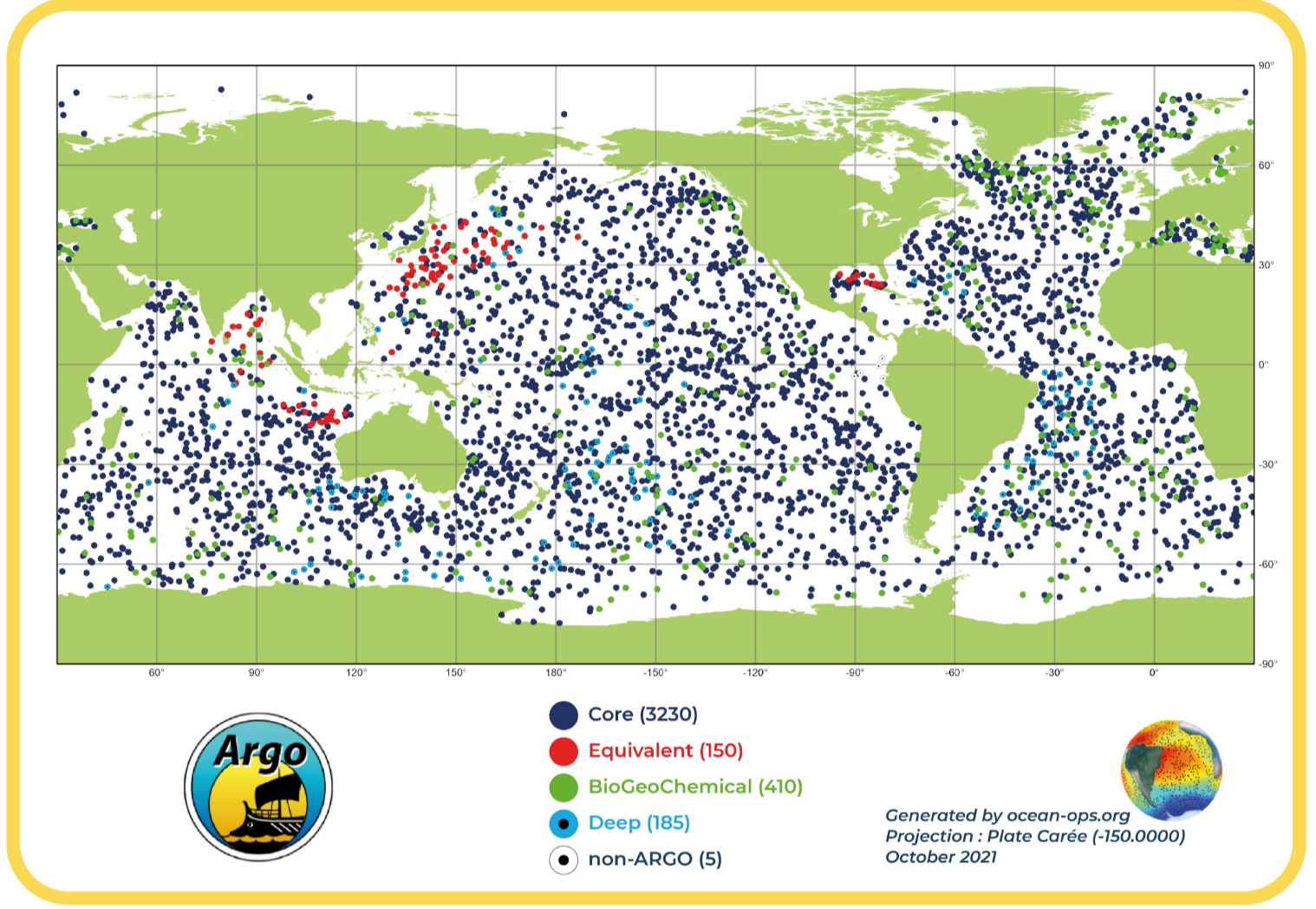
A revolution in oceanography thanks to robotics

Ever since the debut of oceanography, explorers have used ships to observe the World Ocean. However, stormy oceanic zones, thick ice and overwhelming pressure in the depths make it difficult to obtain comprehensive and consistent data on the Ocean or evolutions in its temperatures.

In 2000, the Argo programme was born to defy these obstacles. Thousands of oceanic robots, profiling floats, are now deployed throughout the World Ocean.

Both international and cooperative, Argo makes data freely available to scientists and to the interested public.

As a result, Argo and profiling floats have revolutionised the work of scientists and their capacity to follow the Ocean's evolutions.



Nearly 4000 profiling floats drift throughout the World Ocean.



Core-Argo profiling floats

Within the Argo programme, these profiling floats measure the Ocean's temperature and salinity down to 2000 metres deep.

These profiling floats transfer data vital for detecting, following and predicting climate evolutions.

Today and tomorrow, Deep-Argo and BGC-Argo profiling floats

The Argo programme aims to create a multidisciplinary global observation network that pushes back the limits of the great depths.

This aspiration has led to the development of "Deep-Argo" and "BioGeoChemical-Argo (BGC-Argo)".



Deep-Argo

Deep-Argo profiling floats can dive down to 6000 metres deep, in other words 4000 m further than standard Core-Argo floats. They are capable of withstanding extreme pressure.

These profiling floats offer precious information, for example on heat transport in the Ocean.



BGC-Argo

While all Argo profiling floats measure temperature and salinity, BGC-Argo is embedded with additional sensors. These sensors measure other properties such as oxygen, suspended particles, nitrates, chlorophyll or pH. In this way, they help us to study the processes controlling biological and chemical cycles in the Ocean.

These profiling floats recuperate masses of data essential for understanding the Ocean's functioning and its evolution in relation to global changes including ocean acidification, the development of oxygen-minimum zones, or carbon transport mechanisms.

Today, a new generation of profiling floats measuring biogeochemical properties is ready to explore the still-mysterious depths of the Twilight Zone.