



# INTERNATIONAL HYDROGRAPHIC ORGANIZATION

## *MEASURING & CHARTING THE OCEANS*





The International Hydrographic Organization (IHO) is an intergovernmental organization which supports the safety of navigation and the protection of the marine environment.

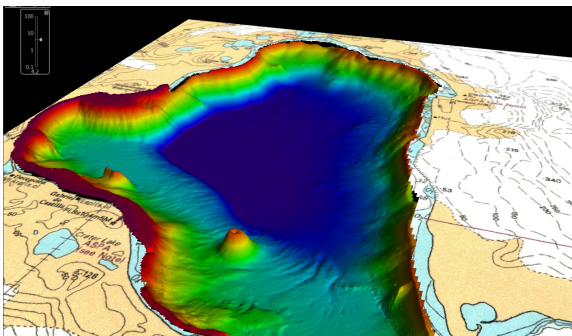
## Longstanding international cooperation

The IHO is the recognized international authority regarding hydrography, a discipline of applied science where the physical characteristics of the oceans are measured and presented. With 95 Member States on five continents, the IHO sets standards and coordinates activities of national hydrographic offices so that all seas, oceans and navigable waters are surveyed and charted. The Secretariat of the IHO has been hosted by the Principality of Monaco since its creation in 1921.

## Measuring the physics of the seas

Hydrography focuses on the physical features of oceans, coastal areas, lakes and rivers, as well as with the prediction of their change over time.

Surveys record many features, including coastal topography, bathymetry (depth) and oceanographic measurements such as tides and currents. The data is used for nautical charts but also geospatial applications and Geographic Information Systems (GIS). This information traditionally supports shipping but now applies to all marine activities, economic development, security and defence, scientific research, and environmental protection.



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## Underpinning all marine activities

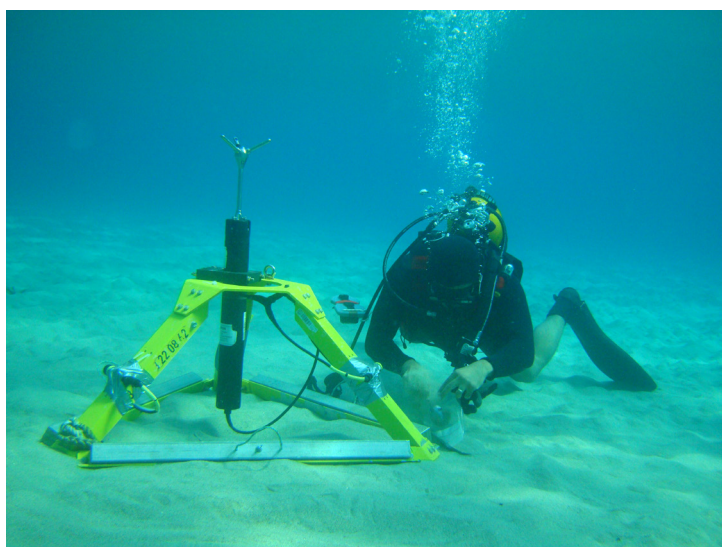
The economic benefits of having an up-to-date knowledge of the marine environment can be considerable. Not only can hydrographic information be used by countries to develop infrastructure such as ports, but it can also be used to develop the Blue Economy.

Information related to the topography of the seabed or the strength and regularity of currents for example can be used to develop marine renewable energy projects. Environmental factors such as temperature, salinity, and currents can be used by industries like fishing and aquaculture to optimize their activities. Plus, the marine environment is changing. In some parts of the world sea level is rising, ice is melting, coasts are eroding etc. This is modifying coastlines and hydrography provides a context to measure and monitor these changes, information which is essential for navigation. By helping to prevent marine accidents and associated oil spills, hydrography also contributes to protecting the marine environment.

## Helping improve marine safety

Globally harmonized services contribute to marine safety through the 24/7 provision of navigational and meteorological warnings.

The internationally coordinated World-Wide Navigational Warning Service (WWNWS) is supervised by the IMO but facilitated by the IHO in partnership with the WMO. The IHO sets standards for operational guidance documentation and marine safety information which is transmitted by various providers with improved coverage in the Polar Regions.



There is still much work to be done to increase the coverage and sharing of hydrographic data.



In the areas within 200 miles of the coast, it is estimated only 50% have been surveyed to modern standards. When we consider the open ocean, only 18% is fully known. More information exists, but is not publicly-available. The IHO fosters international cooperation and data sharing and aims to enhance national efforts. It also provides a forum for states to come together and discuss important issues in sea surveys, nautical cartography and the sharing of hydrographic knowledge.

For many ships, 30 cm extra depth shown on a chart allows at least 2,000 tons more cargo to be carried.



## Mapping the world's oceans

The IHO works to expand available bathymetric data across the globe.

The General Bathymetric Chart of the Oceans (GEBCO) mapping project was initiated by HSH Prince Albert I of Monaco in 1903 and has been managed by the IHO since its beginnings.

## Setting the standards

The IHO helps coordinate the activities of national hydrographic offices and agrees on standards in order to promote uniformity in nautical charts and publications.

## Building hydrographic capacity around the world

The IHO works to strengthen the hydrographic capabilities of developing coastal states.

The coordination of education and training courses on surveys and cartography in partnership with more than 60 institutions in 20 countries is a success story. So far a network of more than 2.000 alumni has been established and prepares the future of hydrography.

## Global Coordination – Regional Collaboration

The IHO engages with Regional Hydrographic Commissions to coordinate hydrographic activity and cooperation at a regional level.

There are 15 such commissions covering all the seas and oceans. They work to address regional issues, plan joint survey operations and harmonize the efforts across borders.

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