



MARINE PROTECTED AREAS FROM A STANDARDS PERSPECTIVE S-122

Dr. John Nyberg

May 2026



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STANDARDS – WHY ARE THEY IMPORTANT?

International
Hydrographic
Organization

- **Consistency and reliability** - Standards ensure data is formatted and structured the same way across systems, reducing errors and inconsistencies
- **Interoperability** - Systems can easily exchange and use data when they follow the same standards, enabling seamless integration
- **Efficiency** - Standardized data reduces the need for transformation and cleaning, saving time and computational resources
- **Improved data quality** - Standards enforce validation rules that help maintain accuracy and completeness
- **Enhanced analysis** - Consistent data makes it easier to compare, aggregate, and derive insights across different datasets
- **Simplified collaboration** - Organizations can share and combine data more effectively when using common standards
- **Reduced costs** - Standards minimize duplicate efforts and decrease the expenses associated with managing incompatible data
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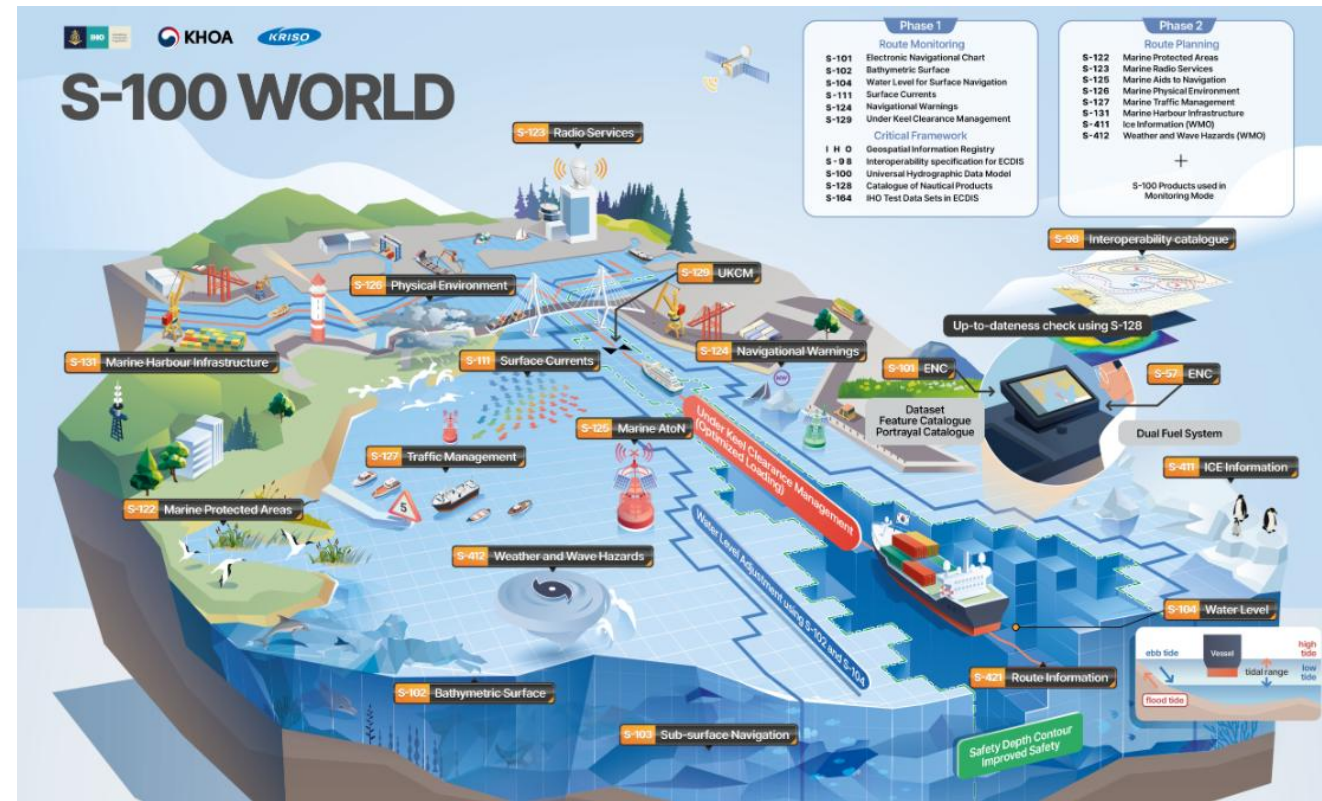
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Overview of S-100 framework

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The S-100 Standard is a **framework** document that is intended for the development of **digital products and services** for hydrographic, maritime and **GIS communities**.

It comprises multiple parts that are based on the geospatial standards developed by the International Organization for Standardization, Technical Committee 211 (ISO/TC211).



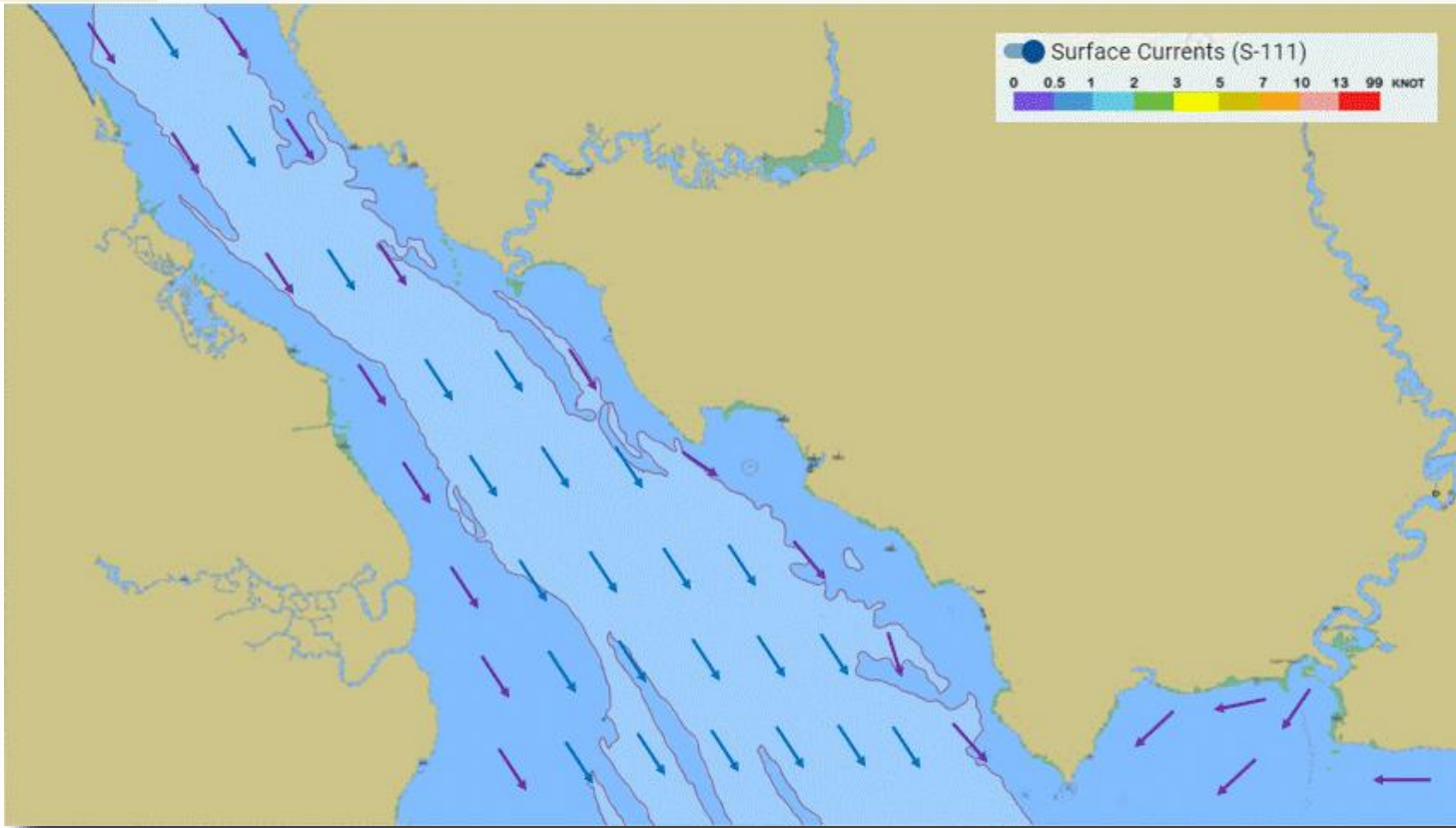


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S-100 Example

Integrated Surface Currents

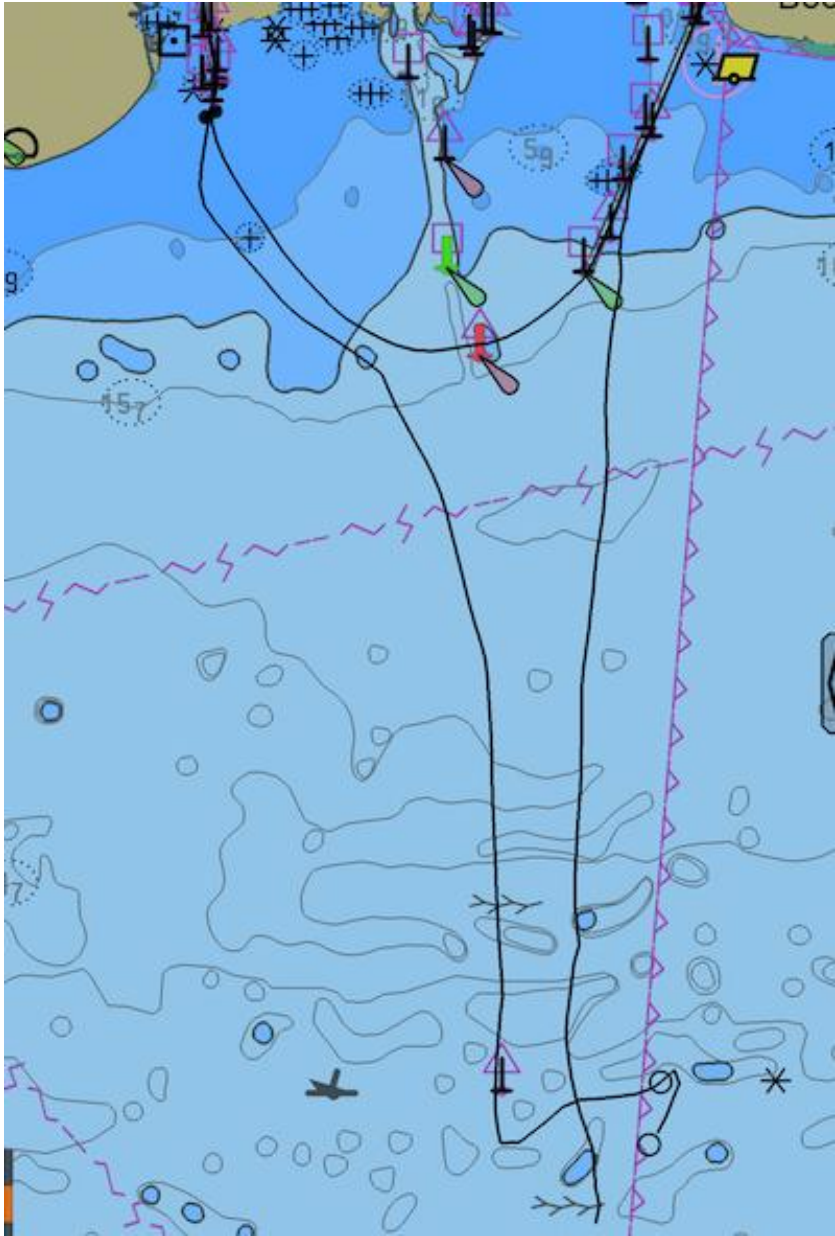
Combining S-102 bathymetry, Water Level Adjustment (S-104) and surface currents (S-111) gives a more complete picture of the environmental conditions.





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Search country, protected area, or species

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COUNTRIES

AREAS

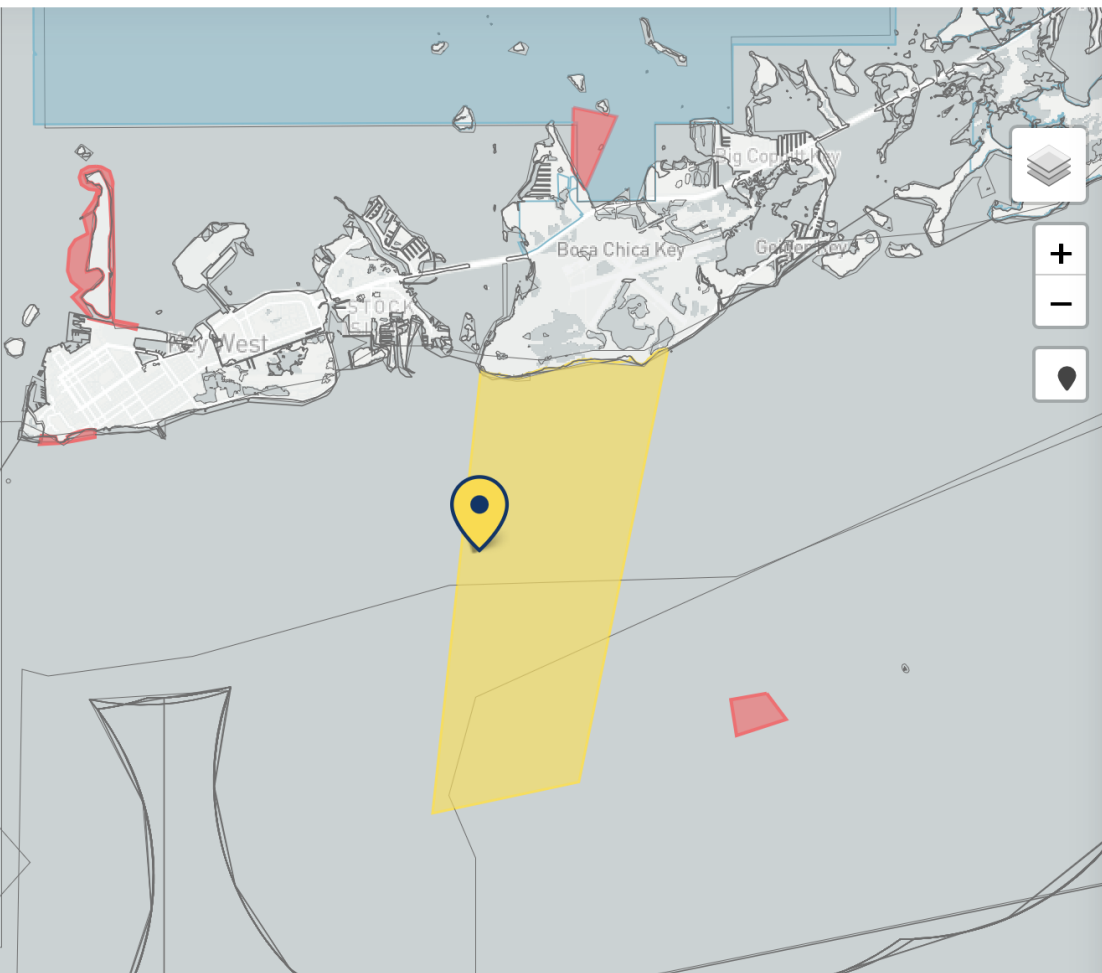
RESTRICTIONS



24° 31' 24" N, 81° 43' 10" W

RESTRICTIONS REPORT

New to Navigator?



Legend

- Level of Fishing Protection**
- Area Max.
- Most Restrictive LFP 5 (No-Take)
 - Heavily Restrictive LFP 4
 - Moderately Restrictive LFP 3
 - Least/Less Restrictive LFP 1 or 2
- EEZ Limit
- Territorial Sea Limit

Heavily Restrictive

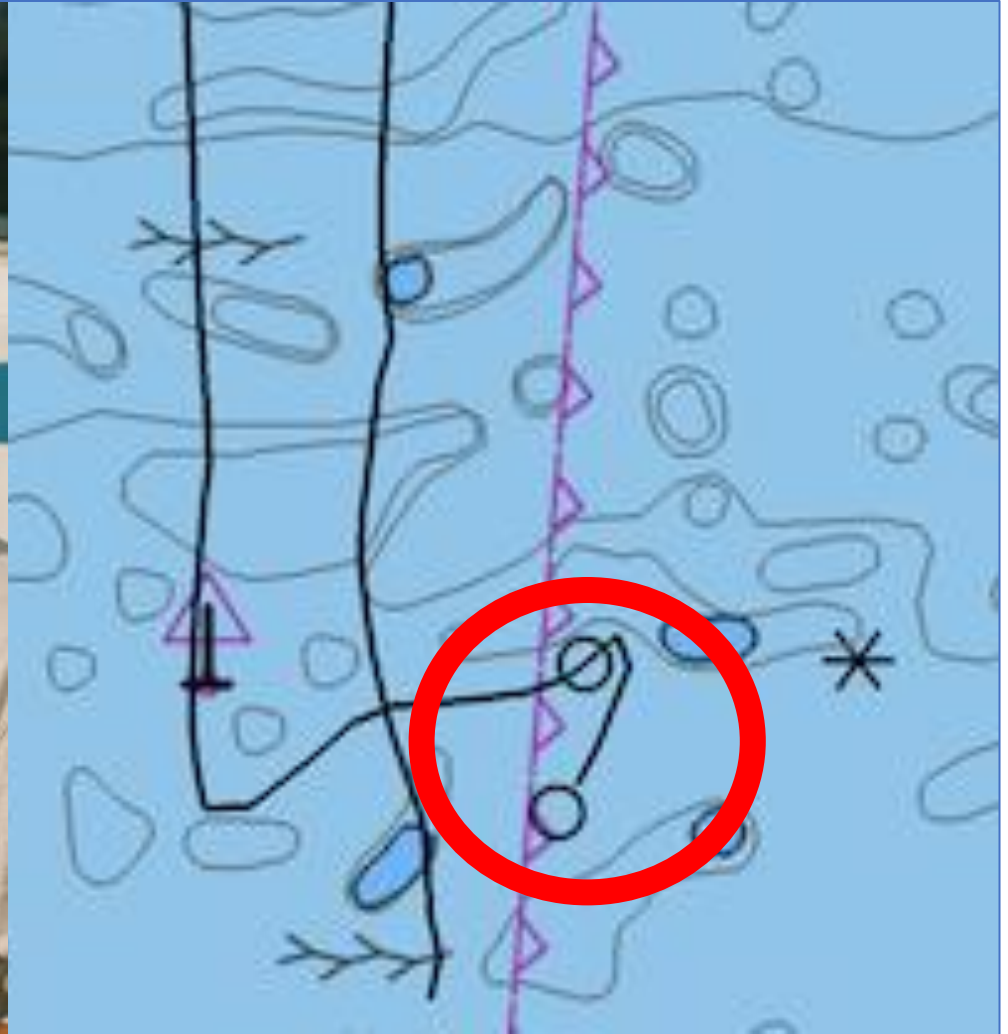
	FISHING GEAR	ACTIVITIES
PROHIBITED	<ul style="list-style-type: none"> Recreational Fishing Commercial Fishing Artisanal Fishing Subsistence Fishing Bottom Trawling Pelagic Trawling Hook And Line Trolling Longlining Pur seseine/roundhaul/surrounding nets Gillnets and Entangling Nets Trammel Nets Dip/scoop Nets Cast Nets Drift Nets Other Nets Dredges Traps and Pots Spear Fishing Underwater 	<ul style="list-style-type: none"> Removal of Historic Artifacts Dredging and Dumping Industrial or Mineral Exploration Non-Fishing Industrial Extraction





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Marine Protected Area(MPA) Demo

hdseo@bluemap.kr

DATASET

List

Search Dataset ..

Product

All

Save

New

2_temp

Dataset

Validation

Copy

Search Feature ..

- Florida Keys Areas to be Avoided
1239 Marine Protected Area
- Florida Keys Areas to be Avoided
1240 Marine Protected Area
- Weedon Island Preserve
1241 Marine Protected Area

Florida Keys Areas to be Avoided

POLYGON

((-81.99982 24.65296, -81.901 24.6385, -81.89 24.63183, -81.863 24.6025, -81.84333 24.57333, -81.82883 24.55733, -81.86833

href [Restrictions \(AIFL13_REST\)](#)

The RxN

href [Regulations \(AIFL13_REGS\)](#)

Category of M... IUCN Category IV

Category of R... environmentally sensitive sea area

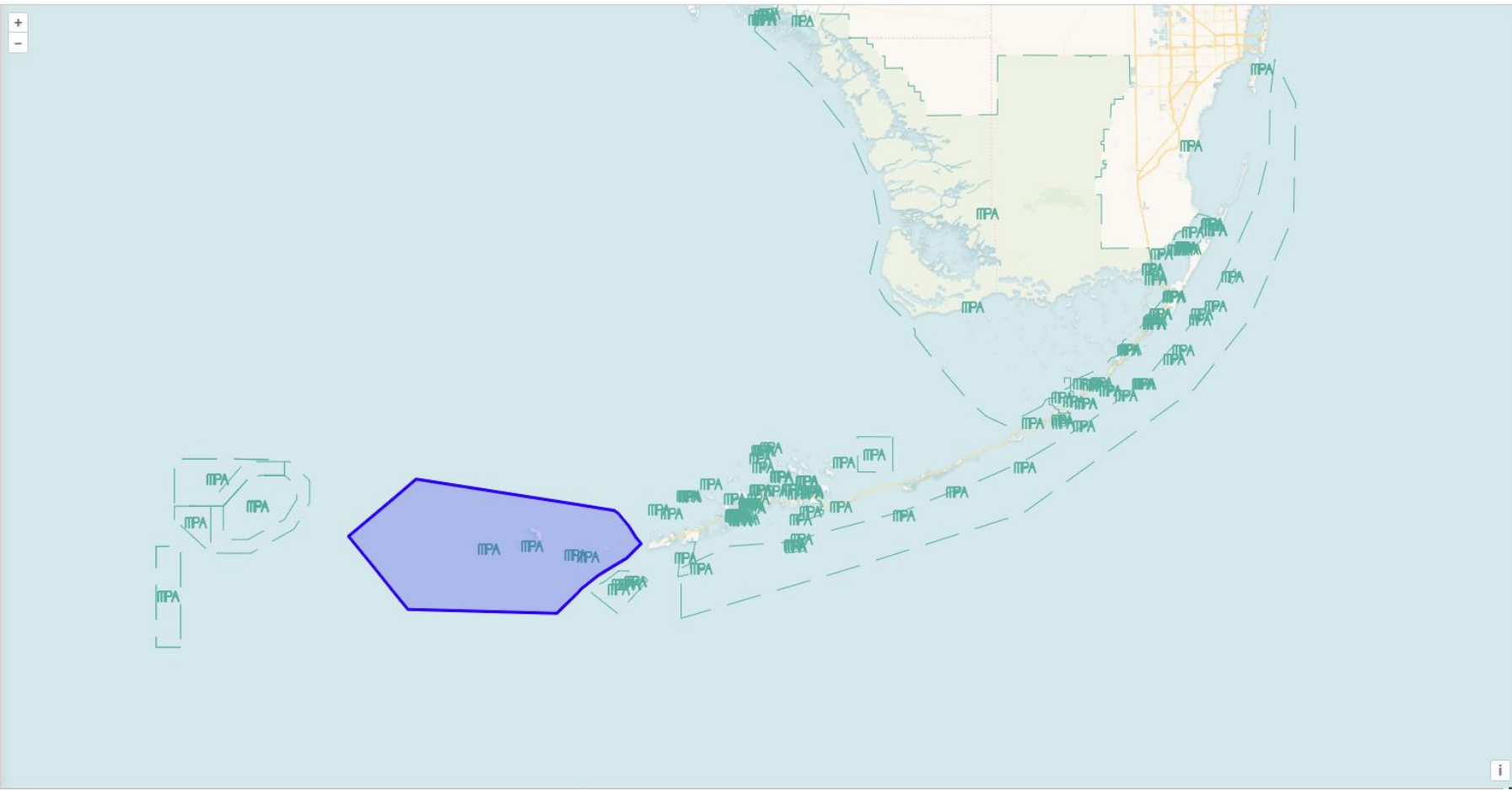
Jurisdiction national

Restriction entry restricted

Restriction industrial or mineral exploration prohibited

Restriction construction prohibited

Status permanent





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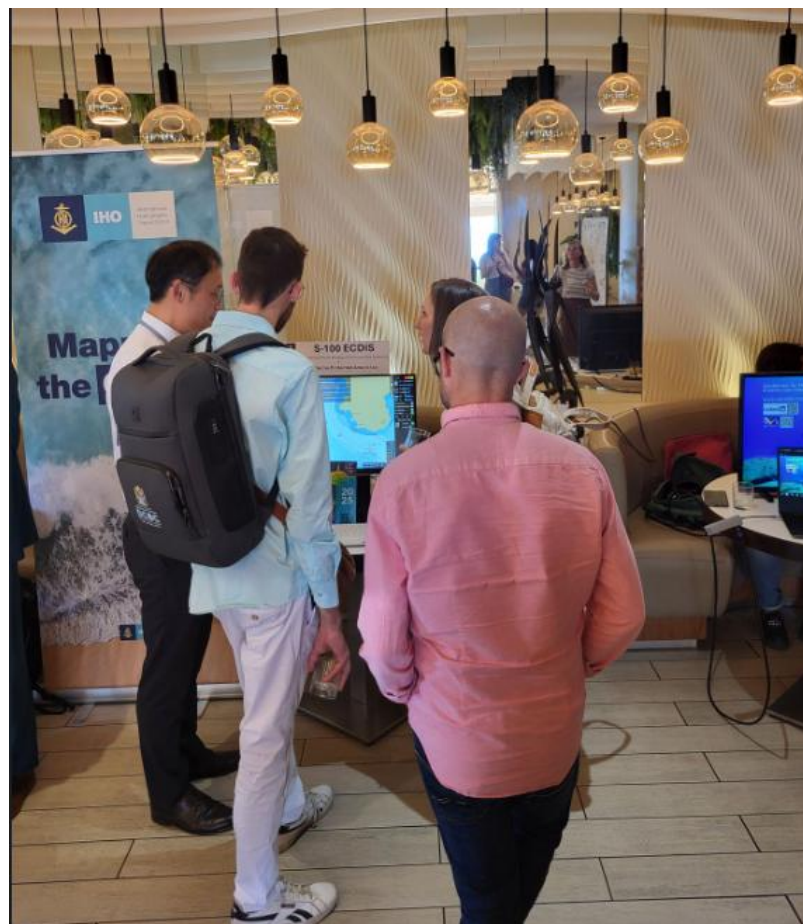
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S-122 DEMO DURING UNOC3 2025 IN NICE

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IHO-PROTECTED SEAS MOU

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MEMORANDUM OF UNDERSTANDING BETWEEN THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION AND PROTECTEDSEAS

The International Hydrographic Organization (IHO) and ProtectedSeas, recognizing the mutual benefits of establishing a cooperative framework, have agreed this Memorandum of Understanding (MoU).

Purpose

The purpose of this MoU is to provide a framework for ongoing discussion and consultation between the IHO and ProtectedSeas, facilitating collaborative projects in areas of shared interest. These efforts aim to support marine environmental protection through collaboration addressing the technical aspects on the provision of information on the coverage and applicable conditions of Marine Protected Areas (MPAs). Such MPAs, established under international treaties or national legislation, impact safe and sustainable navigation as well as other maritime activities. The collaboration leverages both hydrographic, technical and regulatory expertise to enhance the skills on the collection and provision of MPA location, rules, and regulations.

Scope of Activity

The IHO and ProtectedSeas shall coordinate their activities to the greatest extent possible. Specific areas of cooperation may be mutually determined and agreed upon over time.



NEAR-TERM COLLABORATIVE PRIORITIES

- Develop and refine **S-122 datasets** from Navigator for testing by member HOs and OEM developers
- Advance **portrayal standards** for MPA restriction icons and pick reports in ECDIS systems
- Explore **distribution approaches** — including IHO Regional Sea divisions as geographic partitions for S-122 data catalogs
- Continue Navigator **version 2.0 update** across all global countries and High Seas areas
- Assist member states with accelerating availability of **authoritative S-122 datasets** for their waters
- Support **BBNJ Treaty implementation** — authoritative MPA information in areas beyond national jurisdiction where no HO has sole responsibility

SHARED VISION

FOR MARINERS

Reliable, standardized MPA restriction information in ECDIS — improving awareness, compliance, and safety in protected waters worldwide

FOR THE OCEAN

Better-informed vessel operations reduce anchor damage, discharge incidents, and entry violations — making MPAs more effective in practice

FOR THE IHO MISSION

Demonstrates hydrography's expanding value in marine environmental stewardship — from chart production to ocean governance, supporting the UN Ocean Decade and SDG 14



Thank You

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