

Editorial

Welcome to the first issue of the 32nd volume of The International Hydrographic Review (IHR).

This issue once again brings together a diverse set of contributions that reflect the evolving challenges and opportunities in hydrography and ocean governance.

Hydrography today operates at the intersection of rapid technological innovation, increasing societal expectations, and urgent environmental change. From satellite-based observation to community-led surveying and new legal frameworks for ocean governance, the discipline continues to expand its scope and relevance. The contributions in this issue highlight how hydrography responds to these dynamics – providing critical data, methods, and perspectives to support safe navigation, sustainable ocean use, and informed decision-making.

This issue of the IHR also features a series of conference papers from the 12th Conference of the IHO–IAG Advisory Board on the Law of the Sea (ABLOS), introduced by a foreword from Luigi Sinapi, Director and Secretary-General Elect of the International Hydrographic Organization (IHO), setting the stage for insightful discussions at the interface of hydrography, law, and policy.

The invited article is authored by Merte P. J. Peeters of MLA College (Plymouth, United Kingdom), who was awarded second prize in the International Federation of Hydrographic Societies (IFHS) Student Award 2025 for his Master's thesis. His contribution, *Towards an accurate mean sea level to ellipsoid separation model for the Dutch Caribbean: an operational vessel based GNSS approach* (pp. 9–21), presents a concise overview of his award-winning research. The paper demonstrates how vessel-based GNSS measurements can be used to derive accurate regional models for mean sea level separation, offering a practical solution for data-sparse coastal environments and supporting hydrographic surveying and climate adaptation efforts. In this context, it is also worth noting that the first prize of the IFHS Student Award 2025 was awarded to Isabella Metz (Julius-Maximilians-Universität Würzburg, Germany) for her outstanding Master's thesis titled *Analysis of uncertainties for error detection and quantification of bathymetry data from multispectral Sentinel-2 imagery*. While her work cannot be included in this issue, it nevertheless stands as an excellent example of the high quality and relevance of emerging research within the hydrographic community. The entire IHR Editorial Board warmly congratulates both early-career scientists on their achievements. The dedication of such young professionals gives us confidence that the future of hydrography is in very capable hands.

The peer-reviewed section opens with a study by Anand Hiroji & Olaoluwa Oderinde on standardizing hydrographic vessel offset surveys (pp. 23–39). Their work highlights how methodological choices such as baseline length and station configuration influence accuracy, contributing to improved survey reliability. René Chénier and colleagues explore the operational use of satellite-derived bathymetry within the Canadian Hydrographic Service (pp. 41–55). Their contribution illustrates how iterative processing can enhance model performance while underlining the importance of careful accuracy assessment. Mathieu Rondeau and co-authors present an innovative approach to Arctic hydrography by engaging Inuit communities in nearshore mapping (pp. 57–67). Their findings demonstrate how community-sourced bathymetry can complement traditional surveying and contribute to improved safety and knowledge integration.



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ISSN print: 0020-6946

DOI prefix: 10.58440

URL: <https://ihr.iho.int/>

Publisher:

International Hydrographic Organisation

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98011 Monaco CEDEX

Editorial Board:

<https://ihr.iho.int/editorial-team/>

The conference section is introduced by Luigi Sinapi, who provides a foreword to the selected contributions (pp. 69–71). Ayo Olugbode examines Nigeria's blue economy and ocean governance, identifying institutional and legal challenges and proposing pathways for more effective implementation of international frameworks (pp. 73–79). Tullio Scovazzi discusses the protection of underwater cultural heritage, highlighting gaps and ambiguities in the current international legal regime (pp. 81–87). Tihao Zeng addresses the ocean observation paradox in the context of marine plastics governance, emphasizing the tension between legal frameworks and the need for continuous environmental monitoring (pp. 89–97). Eva van Heukelom investigates the balance between fisheries data protection and international obligations, particularly in the context of increasing use of artificial intelligence (pp. 99–105). Andrey Chernov focuses on evidence requirements for alternative fuel bunkering under decarbonisation rules, emphasizing the growing importance of robust data and verification processes (pp. 107–110). Laura Meyer and co-authors explore opportunities for mobilizing private sector ocean data under emerging frameworks such as the BBNJ Agreement (pp. 111–116). Emily Charry Tissier highlights the role of integrated observation systems and data governance in protecting marine megafauna, pointing to the need for improved interoperability and standards (pp. 117–122).

Within the technical reports section, an open-source perspective is introduced with *SidescanTools*, presented by Mia Schumacher and collaborators (pp. 123–131). The software provides a comprehensive and flexible solution for processing common sidescan sonar data formats, including functionalities such as bottom detection, geometric and radiometric corrections, and gain normalisation. By enabling the export of georeferenced raster products and enhancing overall data quality, the tool supports more efficient workflows in hydrographic practice. As an open-source development arising from the Ghostnetbusters project, it also exemplifies the growing importance of accessible, community-driven tools for advancing innovation and collaboration in the field.

This issue of the IHR also includes an update on Malaysia's hydrographic leadership, with the appointment of Rear Admiral Dr Najhan bin Md Said as Chief Hydrographer, marking a new phase in the country's hydrographic development (pp. 133–134). Additionally, an information on the *Third Portuguese-Spanish Hydrography Conference* highlights continued regional cooperation and knowledge exchange in the field (pp. 135–138).

On behalf of the Editorial Board, I hope that this issue provides valuable insights and inspiration to the hydrographic community and beyond.



Dr Patrick Westfeld

Chief Editor, IHR