

# 5 QUESTIONS TO JOHN NYBERG, DEPUTY HYDROGRAPHER AT NOAA'S OFFICE OF COAST SURVEY

## Diversity Central to Evolution of Hydrography



*Hydro International* spoke to five leading experts about the present and future of the hydrographic industry. In this interview, John Nyberg (NOAA's Office of Coast Survey) looks forward to a more diverse and inclusive future for the fields of hydrography and geography, and describes the substantial role that hydrography will play in climate science.

***2020 has been an extraordinary year. What are the impacts of Covid-19 on the hydrographic industry, and what other factors have influenced the business?***

The impacts of Covid-19 on our industry have been notable. Survey operations have been scaled back, international coordination and capacity development have faced challenges,

and people are applying chart corrections from their homes. This doesn't mean that the impacts have all been negative. For example, more people are able to participate in coordination and training without having to incur travel expenses, and nautical cartographers are able to support their families wherever they may live during these difficult times. It will be interesting to see what the long-term effects of working virtually will have; for example, international coordination and training may not be as effective in a virtual environment. Regardless, I feel proud of our industry for carrying on with our work as best we can under these circumstances.

***When it comes to technological developments, how would you describe the current state of the hydrographic industry?***

Exciting! Autonomous survey platforms, satellite-derived bathymetry, advanced hydrodynamic models, and major progress on a full suite of international standards from the International Hydrographic Organization are just a few of the initiatives that put our industry at the forefront of technology. I am particularly impressed with the partnerships among government, private industry and academia to collectively advance the industry. The work that the three sectors are doing to advance technology in our industry are bringing our imaginations to life.

***How do you expect hydrography to evolve over the coming years?***

I believe that diversity will be central to the evolution of hydrography over the coming years. This includes the make-up of our workforce, how we collect and distribute our data, and what our data is used for. The fields of hydrography and geography will continue to become much more inclusive, with dramatic increases in mature hydrographic programmes around the world and expanded representation and leadership of women in hydrography. Both of these can only serve to make our industry stronger. As the world continues to realize the importance of our science, the ways in which we collect our data will increasingly benefit from airborne, autonomous, crowdsourced and other technologies. Beyond navigation, hydrography will play a substantial role in climate science as a foundational dataset for ensuring sustainability with regard to coastal resilience, renewable energy and tourism, to name a few.

***In what ways can the hydrography sector learn from other industries?***

Data accessibility would be at the top of my list. We have definitely improved over the past few years, but the land mapping sector has exposed the power of open data. This is evident through the advances in geospatial technology that often come from universities and small businesses. Open access to data offers a low barrier to entry for research and development, leading to higher returns on the investments that governments make on data collection. I also believe that we can continue to learn from the power of crowdsourcing information. The successes of applications for managing automobile traffic are obvious examples. Technology in the marine domain is available, but national policy and industry coordination occasionally get in the way.

***What opportunities and threats do you see for our profession?***

Our future is bright and full of opportunities. We need to continue to remind the world that 70% of the Earth's surface is water and that hydrography is critical for economic development and monitoring environmental sustainability, and that some of the world's most cherished cultures are also the most vulnerable to sea-level rise. Hydrographers have a great opportunity to help the world better understand how

climate change will impact all of these things. We can reduce the threats to our profession by taking advantage of technology, sharing data and experiences, and working together as a global community.

*John Nyberg is the Deputy Hydrographer at [NOAA's Office of Coast Survey](#). John is co-Chair of the UN-GGIM Working Group on Marine Geospatial Information, Chair of the IHO Worldwide ENC Database Working Group and vice-Chair of the IHO Inter-Regional Coordination Committee.*

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