

Collaborative Nautical Charting and Scientific Seabed Mapping Missions: A Case Study in the Northwestern Hawaiian Islands

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Abstract: New positioning, depth sounding, and seabed imaging technology has revolutionized hydrography in the past 15 years. Unfortunately, many government hydrographic offices will probably never be able to apply this technology to their entire area of responsibility, because of limited resources and pressing need for modern surveys in the regions of highest traffic volume. However, high resolution mapping equipment and techniques are now in widespread use throughout the academic research fleet, and many groups now have the ability to acquire high quality bathymetric data. This presents an opportunity for hydrographic offices to assist these "non-traditional" users of seabed mapping technology by providing expertise in the application of procedures and corrections while gathering modern data for updating nautical charts in areas where they will possibly never be able to dedicate their own resources.

This paper describes a recent cooperative mapping project undertaken by several NOAA offices and the University of Hawaii's Undersea Research Laboratory in the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve. NOAA's Office of Coast Survey was asked to assist with this effort to ensure that the data acquired met the appropriate International Hydrographic Organization quality standards. The resulting high quality data will support generation of boundaries for newly established reserve protected areas, ecosystem mapping, and the first new hydrographic data on nautical charts of this region in over 70 years. We plan to use this project as a model for future collaboration between scientific and government ocean mapping organizations.