

UN Decade Key priority area	US research priorities and recommendations
<p>Qualitative and quantitative understanding of ocean ecosystems and their functioning as the basis for management and adaptation</p>	<p><i>Develop periodic, routine assessments of species richness and biodiversity (start with biology and ecosystem EOVs) throughout the US coast, inland oceans/Great Lakes, and EEZ.</i></p> <p>WH Decadal Vision for S&T: Understand the Ocean in the Earth System (Also supports OceanObs19 recommendation)</p> <p>Existing initiatives/programmes/partnerships: IOOC is currently setting up a task team which will focus on assessing the status of EOv routine sampling across US coast, inland/ocean waters. G7 Future of the Seas and Oceans WG is focused on sustained ocean observations, including biological EOVs. MBON conducts assessment of biodiversity and other biological variables at select sites within US waters.</p> <p>Potential Activities: Further develop an implementation plan for biogeochemical/biological EOVs at a regional/global level.</p>
<p>Capacity development and accelerated technology transfer, training and education, and ocean literacy</p>	<p><i>Accelerate the power of innovation in technologies, techniques, synthesis and forecasting to provide knowledge for action, including areas of modeling, sensor development, eDNA, machine learning, IT advances, and data visualizations</i></p> <p>WH Decadal Vision for S&T: Develop resilient coastal communities & Understand the Ocean in the Earth System</p> <p>Existing initiatives/programmes/partnerships: US federal agencies and academia are carrying out workshops focused on eDNA to standardize methods and metadata. The US is also supporting activities focused on Earth System modeling and cloud computing.</p> <p>Potential Activities: Expand existing activities in a synergetic way with other countries undertaking similar work.</p>
<p>Ocean Data and Information Portal</p>	<p><i>Advance Big Data analytics and cloud computing platforms, and modernize and streamline data management for ocean observations, in particular support and further develop open source libraries and increase adoption of cloud computing.</i></p>

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	<p>WH Decadal Vision for S&T: Understand the Ocean in the Earth System (Also supports OceanObs19 recommendation)</p> <p>Existing initiatives/programmes/partnerships: Action Area 3 of the G7 Future of the Seas and Oceans WG is focused on data. The IOOC is currently setting up a Cloud Computing Task Team to focus on open source and cloud computing.</p> <p>Potential Activities: Utilize the G7 future of the seas and oceans WG to further cross-country coordination regarding Big Data and other Data (e.g. cloud computing) activities.</p>
UN Decade Key priority area	US research priorities and recommendations
Ocean Data and Information Portal	<p><i>Provide rapid and seamless access to data and information that includes the integration of data across disciplines and from the regional to national to global scales.</i></p> <p>WH Decadal Vision for S&T: Understand the Ocean in the Earth System</p> <p>Existing initiatives/programmes/partnerships: Action Area 3 of the G7 Future of the Seas and Oceans WG is focused on data.</p> <p>Potential Activities: Utilize the G7 future of the seas and oceans WG to further cross-country coordination regarding Big Data and other Data (e.g. cloud computing) activities.</p>
Integrated multi-hazard warning system	<p><i>Ensure that all US coastal communities have accurate and timely storm surge and water level predictions.</i></p> <p>WH Decadal Vision for S&T: Develop Resilient Coastal Communities</p> <p>Existing initiatives/programmes/partnerships: Action Area 4 of the G7 Future of the Seas and Oceans WG is focused on coastal resilience and capacity building. NSF's emerging CoPe is also focused on coastal resilience. NASA and NOAA have ongoing programs that focus on Sea Level Rise and storm surge predictions.</p> <p>Potential Activities:</p>

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Integrated multi-hazard warning system	<i>Provide indicators and forecasts on the status and health of the oceans and Great Lakes, including protected species, fisheries, water quality, HABs, OA, hypoxia and other parameters, on a regular basis</i>
Quantitative and qualitative understanding of ocean ecosystems and their functioning as the basis for their management and adaptation	<p>WH Decadal Vision for S&T: Safeguard Human Health</p> <p>Existing initiatives/programmes/partnerships: EOVS (BGC and Bio/Eco) provide this baseline information. IOOS and MBON-type networks measure EOVS on a regular basis, already providing some of this information. Satellite remote sensing also generates water quality information regularly.</p> <p>Potential Activities: Further develop an implementation plan for biogeochemical/biological EOVS at a regional/global level. Leverage on IOOS and MBON capabilities to carry out some of this implementation. Promote the link between the Decadal Survey (NASA/NOAA/USGS) and this activity to ensure there will be adequate information available to continue to measure the health of aquatic resources and improve forecast.</p>
Comprehensive ocean observing system for all major basins	<p><i>Consolidate and expand current surface ocean observing assets to generate a truly integrated surface ocean observing system that can provide information on ocean carbon, biology, marine debris, and monitor and predict weather and climate on a variety of timescales.</i></p> <p>WH Decadal Vision for S&T: Understand the Ocean in the Earth System</p> <p>Existing initiatives/programmes/partnerships: IOOS, GCOS/GOOS OOPC, GOOS IOCCP</p> <p>Potential Activities: International Task Team on integrated observing system for surface ocean</p>