

# US IOOS Federal Advisory Committee Meeting November 3-4, University of the Virgin Islands, St. Thomas Campus

EPA-Region 2 Projects and Initiatives in the Caribbean

Project or Initiative	IOOS product opportunities
<p><b><u>Coral Reef Protection Plan</u></b>            EPA Region 2 developed the Coral Reef Protection Plan to increase coral reef protection in the U.S. Virgin Islands (USVI) and Puerto Rico (PR). Strategically apply its regulatory and non-regulatory programs to reduce pollution (sedimentation, nutrients, and pathogens) that leads to eutrophication and the degradation of coastal waters and coral reef ecosystems. Other local and federal agencies are implementing coral protection and conservation strategies, and we will seek to collaborate and to integrate our efforts with on-going coral protection initiatives.</p> <p><b>Coral Reef Plan Immediate Actions</b>  <i>-Inter/Intra-agency Communication (e.g. Caribbean Coral Reef partnership)</i>  <i>-Addressing Industrial Discharges into Coastal Areas</i>  <i>-Addressing Sewage Discharges into Coastal Areas</i>  <i>-No-Discharge Zone Designations</i>  <i>-Reduction of Nonpoint Source Pollutants into Coastal Areas</i>  <i>-USVI Environmental Handbook.</i>  <i>-Addressing Storm Water Runoff from Municipalities, Construction Sites and Other Point Sources</i>  <i>-Discharges from Unsewered Areas into Coastal Waters</i>  <i>-Wastewater Discharges near Endangered Species Act (ESA)-listed coral species</i>  <i>-Region 2/Office of Research and Development (ORD) Research Partnering (Guanica Bay Watershed, Biocriteria)</i>  <i>-PR and USVI Green Marinas</i>  <i>-Establish CWA Biocriteria in Puerto Rico</i></p> <p><b>Coral Reef Plan Long-term Actions</b>  <b>1. Revise the Water Quality Standards Regulations (WQSR).</b>            Encourage jurisdictions to revise some of the certain applicable numeric water quality standards to make them specifically protective of coral reefs (e.g. temperature, nutrients and turbidity). During the most recent triennial WQS review, VI DPNR revised the water quality standards, making them more stringent in areas where coral reefs are located.</p> <p><b>2. Implement Biocriteria Monitoring in USVI.</b> DPNR has written</p>	<p>Waves, currents            Water Quality:            -Ocean Color            -Turbidity            -Sedimentation            -Temperature            -Nutrients            -Ocean Acidification</p> <p>Water Quality:            -Ocean Color            -Turbidity            -Sedimentation            -Temperature            -Nutrients            -Ocean Acidification</p>

<p>narrative biological criteria into its water quality standards, which describe the desired condition of coral reefs dependent on their location and associated use classification. Staff scientists have been trained in coral monitoring protocols, but DPNR lacks sufficient staff to pursue this at this time. Next steps are for Region 2 to encourage periodic monitoring and, in collaboration with ORD, to develop relationships between specific water quality parameters (identified stressors) and coral condition so that the narrative biological criteria can be used as a measure for assessment and potential 303(d) listing. A longer term goal is to derive numeric biological criteria as well as more applicable numeric criteria for causal parameters, such as nutrients and clean sediment, which will allow for more refined assessments and decision making regarding restoration of coral reefs and attention to ESA-listed threatened and endangered species.</p> <p><b>3. Coral reef condition thresholds for the Caribbean.</b> EPA ORD, in collaboration with the Office of Water and Region 2, has assembled a panel of coral reef experts with expertise in coral reef taxonomic groups (e.g., stony corals, fishes, sponges, gorgonians, algae, seagrasses and macroinvertebrates), as well as community structure, organism condition, ecosystem function and ecosystem connectivity. The expert panel is developing a framework that illustrates a range of biological responses that can result from human disturbance – the coral reef biological condition gradient (BCG). The expert panel is establishing levels of condition, with a consistent well-defined narrative for each level, and a process for translating specific metric scores into levels. Levels can be aligned with designated aquatic life uses in water quality standards and can be used as targets for protection and restoration. Reef assessment data, photos and videos from federal, territorial, academic and NGO surveys and monitoring programs will be included in a US Caribbean coral reefs database that will reside on STORET. Completion of the BCG will require a series of facilitated workshops and webinars with this group of coral reef experts.</p>	<p>Water Quality:  -Ocean Color  -Turbidity  -Sedimentation  -Temperature  -Nutrients  -Ocean Acidification</p> <p>Water Quality:  -Ocean Color  -Turbidity  -Sedimentation  -Temperature  -Nutrients  -Ocean Acidification</p>
<p><b>CWA Permitting into Coastal Areas</b></p> <p>Permits often require near shore WQ data in order ensure that parameters established in the permit are protective to human health and the environment (e.g. NPDES, dredging, ocean dumping, etc.)</p>	<p>Waves, currents  Water Quality:  -Ocean Color  -Turbidity  -Sedimentation  -Temperature  -Nutrients  -Ocean Acidification</p>
<p><b>Climate Change Adaptation</b></p> <ul style="list-style-type: none"> <li>• Coastal Ecosystem Vulnerability <ul style="list-style-type: none"> <li>-Sea level rise could compromise the functionality and services provided by coastal-marine ecosystems</li> </ul> </li> <li>• Vulnerability Regulated Facilities at low lying coastal areas <ul style="list-style-type: none"> <li>-Sea level rise considerations at the time of issuing/renewing permits</li> </ul> </li> <li>• Climate Adaptation for vulnerable communities along Caño</li> </ul>	<p>Sea level measurements  Water Quality:  -Ocean Color  -Turbidity  -Sedimentation  -Temperature  -Nutrients  -Ocean Acidification</p>

Martín Peña

- Climate change, including an increase in the severity and frequency of storms and accelerated sea level rise can cause severe flooding and have adverse health effects on coastal communities. In this project, bathymetric data necessary for modeling sea level rise flooding effects on coastal communities has been gathered. We are planning for the sea level rise models developed to test different scenarios of sea level rise, present sea level, 0.5 and 1.0 meters above MSL (mean sea level).

Potential Products that can be beneficial to EPA (wish list)

- Biological Data
  - Benthic/Coral and Fish Species Abundance Data
  - Marine mammals
  - Larvae movements

Potential Challenges/Clarification

- Sources of data, proprietary rights, data used by third parties, disclaimers, MOUs.