

Remote Sensing and *In situ* Techniques for Assessing *Sargassum* in the Caribbean

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Since 2011, there has been a sudden increase in *Sargassum* biomass in the tropical Atlantic and Caribbean Sea with massive accumulations reported in Puerto Rico and the Caribbean. Their impacts in coastal environments, including fish mortality, altered coastal and wetland biochemistry, release of toxic products due to decomposition, and beach accumulations that impact sea turtles and other important species in coastal and marine reserves. Satellite remote sensing data have been used to identify and monitor *Sargassum* distribution throughout the Greater Caribbean and Atlantic regions. In response to these challenges, this research is focused on a multi-scale approach that uses moderate-, high-, and very high-resolution satellite imagery to improve the quantity and quality of *Sargassum* observations and combines higher spatial and temporal scales required for monitoring *Sargassum* impacts to coastal marine ecosystems such as fringing red mangrove forests, coral reefs and seagrass beds. In addition, field sampling for water quality impacts of *Sargassum*, and novel monitoring technique like remote cameras have been included to enhance observations and evaluate impacts in coastal areas. Here we present current findings and impacts of *Sargassum* accumulations in the coastal waters of Puerto Rico.