

## MAPPING THE FREQUENCY AND DISTRIBUTION OF THE RIO GRANDE DE AÑASCO PLUME USING MERIS

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Total suspended sediments (TSS) were estimated with cloud-free MERIS images in the Añasco Bay (AB) as part of a UPR-Sea Grant project. BEAM and ArcGIS software were used with 128 images to map the dynamics of the Rio Grande Añasco (RGA) plume. The analysis indicated a plume movement and area coverage of 39.44 km<sup>2</sup> towards the northwest during high and moderate flow discharges. During low flow the discharges stayed near the mouth and along the coast. The highest TSS were detected near the river mouth. Moderate values of TSS showed a large extension and movement toward the northwest. Low TSS showed the largest extension and travel to the northwest of the AB. High TSS peaks occurred from August to November, confirming that the RGA plume had the largest sediment area coverage during the wet season. A near coral reef zone was mostly impacted by low and medium concentrations of suspended sediments. High values barely affected the coral reef. A low correlation coefficient ( $R^2 < 0.5$ ) between TSS and discharge data was found close to the river mouth. The best correlation was found at 5.5 km away from the river. This study demonstrated the great potential of MERIS-like sensors for TSS estimation.

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