

REMOTE SENSING OF “BLACK WATER EVENTS” IN PUERTO RICAN OLIGOTROPHIC WATERS

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Black water events (BWE) are common in coastal areas associated with wetlands or river outfalls, rich in organic humic matter. In Puerto Rico, BWE can be found along the insular shelf and in oligotrophic waters. BWEs were identified in 8 Sentinel-3A images in 2018. A dark water index combining $(B1+B2)/B6$ was used to distinguish these events from the surrounding clear, oligotrophic waters. Our results suggest that an index of less than 7 defines BWEs. The S3A ADG443_NN product values inside the BWE (mean = 0.028 m^{-1}) are 15.1 % higher than the values of adjacent clear waters. Reflectance values of Band 1 outside the BWE are 30.35 % higher (mean = 0.021 m^{-1}) than the values inside the BWE. We suggest that the highest contribution to the BWE optical signal is Colored Dissolved Organic Matter (CDOM), but it is also highly influenced by chlorophyll. The occurrence of BWE around the Island is shown to be frequent. Then, additional research needs to be conducted or prolonged BWE could have significant negative impact in coral reefs and its associated ecosystems.