HABITAT AND BIODIVERSITY MAPPING, FOR THE DETERMINATION OF ALGAL BIOMASS AQUACULTURE SITES IN THE COSTAL AREAS OF PUERTO RICO

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The increasing demand for fossil fuels and the energy crisis caused by the massive exploitation of these nonrenewable resources have pushed for the development of new technologies that will aid in the transition towards a sustainable and clean system of energy production. Here we analyze and map coastal habitats and biodiversity for the optimum production of algal biomass for the production of biofuels in Puerto Rico. The study evaluates the territorial water of Puerto Rico using several factors: benthic habitats, water depth, critical habitat distribution, vessel concentration and route, taking into consideration current laws and regulations for Puerto Rico. Two models were developed to analyze possible aquaculture sites. The first model evaluates conflict areas and the second model incorporates optimal areas for aquaculture sites. The union of both models represents 1,463.45 km2 on the island that can be developed for algae-based bioenergy systems in the territorial waters.