# WATERSHEDS, WATER QUALITY, AND COASTAL COMMUNITIES IN PUERTO RICO (WATER2COASTS)

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In Puerto Rico, land-based sources of pollution, such as suspended sediments and nutrients are the main factors responsible for diminishing water quality in coastal waters and deterioration of coastal marine ecosystems. The increased frequency of extreme weather events, driven by climate change, is expected to exacerbate water quality impacts from the land to the ocean. The goal of this recently funded study is to conduct a multi-scale, interdisciplinary (hydrologic, remote sensing, ecological, and social) study on how coastal waters of west, east, and south Puerto Rico are affected by watersheds of varying size, land use, and climate regimes, and how these may in turn induce a variety of poorly understood effects on coastal and marine ecosystems (CMEs), as well as the mostly undocumented impacts to humans that depend on these CMEs. We will define distinct levels of structural connectivity by combining current linkages between watershed-scale contaminant load outputs and marine water quality through remotely-sensed river plume mapping of both optical and thermal properties. We will test for associations among socio-economic vulnerability, water quality and land uses. The human dimension in these watershed and coastal areas will be studied as well as their vulnerabilities with changing climate through interviews, surveys, and community interactions. The team will conduct a focus group with relevant stakeholders to explore how modified land uses and water quality have affected ecosystems services in the study area.