

Draft WQPP Recommended Priority Topics for 2021 EPA Special Studies Funding

Stormwater Pollutant Investigation: Develop a study to analyze and quantify the volume and composition (e.g., nitrogen, phosphorous, silt, marine debris, metals and oils) of stormwater runoff that enters nearshore waters and/or residential canals from roads, bridges and other impervious surfaces in the Florida Keys. Determine updated local stormwater loading estimates and investigate the cost and effectiveness of different stormwater management regulations, treatment, and disposal methodologies in reducing nutrient, marine debris, and other stormwater pollutant loading into Keys' surface waters. This evaluation should include existing best management practices and technologies that were implemented in accordance with the Monroe County Stormwater Master Plan to assess their effectiveness (or lack of) in reducing pollutant loading and establish a baseline for any upgrades that will be required to improve stormwater management. Conduct a demonstration project to test or prove an identified best management practice or technology, in compliance with all applicable regulations and water quality standards.

Public Education and Outreach: Design and implement an education and outreach project that inspires individual action or coordinated efforts among members of the Florida Keys community to protect and restore water quality and natural resources within canals and/or nearshore waters of the Florida Keys. Provide the information and tools necessary to promote small but meaningful contributions, or larger partnerships to actively improve water quality. Projects should include an evaluation component to assess the ease of implementation, the outcome or impacts produced by the education and outreach program, and how well the program functions within the unique social and economic environment of the Florida Keys.

Impacts of Contaminants of Emerging Concerns on Aquatic Ecosystems in the Florida Keys: Identify the impacts of Contaminants of Emerging Concerns (CEC) previously reported within the South Florida marine environment on the function of marine ecosystems in the Florida Keys. Ecosystems may include, for example, mangroves, seagrasses, hard bottom, and corals including adverse impacts to the ecological communities that they support. Determine which habitats, species, and ecological communities are most vulnerable to the exposure of CECs and identify, develop, and implement a pilot study targeted towards monitoring priorities and programs that will achieve the protection of those resources. CECs are defined as chemicals and other substances that have no regulatory standard, have been detected in natural systems, and potentially cause deleterious effects in human health and aquatic life. These include chemicals found in pharmaceuticals and personal care products, household products such as detergents and flame retardants, and nanomaterials. Many of these contaminants act as endocrine disruptors, which affect hormone function and can result in developmental, reproductive, and other health effects.

Water quality connectivity from Southern Florida to the Keys: Using the currently accepted models, investigate the connectivity between waters and associated pollutants discharged from Florida's southeast and southwest coasts (e.g., sewage overflows, river inputs) into Florida Bay and the Florida Keys National Marine Sanctuary, including the Iconic Reefs. A minimum of two years continuous, in-situ monitoring should be used to determine if patterns of turbidity, chlorophyll a, nutrients, temperature, and salinity can be quantitatively linked to upstream inputs.

Non-municipal Wastewater Sources: Develop strategies to evaluate the impacts from non-municipal sources (e.g., marine/RV sanitation devices) on centralized wastewater treatment systems; develop recommendations for modifying central wastewater systems to accept these sources and support expansion of pump-out infrastructure for marinas in Monroe County.