

Executive Summary

The Florida Keys have long been recognized at local, state and national levels as ecologically rich, culturally significant and environmentally sensitive. The Florida Keys attract a growing number of visitors and new residents. To assure the sustainability of the Keys unique resources, comprehensive planning is required to address the complexity of the situation. Conducting a Florida Keys Carrying Capacity Study is the best way to complement and assist the planning effort. This study will provide an information database and an analysis of consequences (i.e. a planning tool) that may be used to determine the level of land development activities that will avoid further irreversible and/or adverse impacts to the Florida Keys ecosystem.

The carrying capacity analysis shall be designed to determine the ability of the Florida Keys ecosystem, and the various segments thereof, to withstand all impacts of additional land development activities. The carrying capacity analysis shall consider aesthetic, socioeconomic (including sustainable tourism), quality of life and community character issues, including the concentration of population, the amount of open space, diversity of habitats, and species richness. The analysis shall reflect the interconnected nature of the Florida Keys' natural systems, but may consider and analyze the carrying capacity of specific islands or groups of islands and specific ecosystems or habitats, including distinct parts of the Keys' marine system. (*Florida Administrative Weekly*, April 12, 1996)

This study explores past (where possible), present and future impacts on that ecosystem. Several scenarios are included in the study to represent potential future conditions. Each scenario, with its set of assumptions, projects any impacts it may have on identifiable Florida Keys components, such as natural resources, human infrastructure and the social environment. An interactive, spatially explicit Carrying Capacity Analysis Model (CCAM) will be developed that will simulate the conditions of land development activities and population growth, through time, described by the various input assumptions. Utilizing relationships that describe land development and population growth impacts on the environment, CCAM will determine and inventory the impacts on the natural resources and human infrastructure in the Florida Keys. Next, CCAM will compare the impacts on the natural resource elements with their associated requirements, responses, limiting factors and tolerance limits, where identified and quantified, and on the existing infrastructure. CCAM will then spatially identify the natural resource element(s) and human infrastructure whose carrying capacities may have been exceeded. In the case of the human infrastructure, the cost estimate for retrofitting and/or new construction to meet the additional population requirements will be provided.

This scope of work was prepared by the U.S. Army Corps of Engineers in response to a request from the Florida Department of Community Affairs (DCA) under the Intergovernmental Cooperation Act (31 USC 6505) and (10 U.S.C. 3036 Ld). The impetus for the contractual agreement between the two agencies was DCA's requirement to comply with Florida Administration Commission Rule 28-20.100.