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MODELING SUBTROPICAL WATER-LEVEL DYNAMICS DISTRIBUTION

A. L. Higer, E. A. Cordes and A. E. Coker, *U. S. Geological Survey, Miami, Florida*

ABSTRACT

ERTS MSS Imagery coupled with Data Collection Platforms (DCP's) relaying virtual real time data provides the potential for optimum water-resource conservation and utilization in south Florida. Limited information gained from ERTS-1 suggests implementation of a prototype Water Resource Model capable of: (1) Disseminating data to the agencies responsible for maintaining an adequate water supply to the 2 million coastal ridge inhabitants; (2) Delineating the distribution of existing waters stored in the 1,400-square-mile Central and Southern Florida Flood Control District; (3) Quantifying the essential elements in the hydrologic cycle; and (4) Providing the basis for preserving the diverse but delicate Everglades aquatic communities.

New and existing DCP's relaying rainfall, water-levels, wind velocity and specific electrical conductance of water to the USGS via ERTS-1 will allow determination of south Florida water, and weather, and ecologic model feasibilities. Dissemination of data will provide the Central and Southern Florida Flood Control District with an opportunity for daily water-management capability decisions. Sophistication of an experimental Water Resource Management Model up to an annual prototype operational water management budget will allow Federal (National Park Service, Fish and Wildlife Service and U. S. Army Corps of Engineers), State (Central and Southern Florida Flood Control District, Fish and Game, Department of Natural Resources), and County (Dade and Broward public water supply) agencies to avert crisis negotiation for the seasonally limited water resources. A more accurate water resource model is the critical planning need in south Florida with choice of alternative storage techniques hinging on the exact quantity and duration of the seasonal surplus. Preservation of sensitive hydrobiological communities in the Everglades National Park is a primary concern.