PROJECT SUMMARY

Project Title: Real-time oceanographic observations in the FKNMS

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Resource management of the Florida Keys National Marine Sanctuary (FKNMS), which encompasses parts of Florida Bay, the Atlantic coral reefs, and the new Tortugas Ecological Reserve, presents unique problems and needs. Decision making depends on timely access to relevant information from cutting edge scientific research. Although much high quality research has been conducted within the South Florida coastal zone in the past several years, critical gaps remain, most notably in the form of much needed real-time observations. Targeted real-time observations of important oceanographic parameters at key locations throughout the region, and efficient communication of a synthesis of relevant information in a way that is most easily useful to resource managers, are what is needed to take the next step.

In response to the Announcement of Funding Opportunity issued by the CSCOR/COP South Florida Ecosystem Research and Monitoring Program (SFP 2002), this proposal seeks to address these issues by adding new real-time oceanographic observations, by integrating these observations into the scientific context of historical and ongoing South Florida coastal research, and by communicating a synthesis of these and other existing data to resource managers, educators, and the public. The scientific objectives of the proposed effort are to: (1) Monitor in real-time the flow through the passages between Florida Bay and the Florida Keys; (2) Monitor (partly in real-time) the oceanographic properties and currents of the Dry Tortugas and surrounding waters; and (3) Create a Web-based system for presenting real-time data and oceanographic data syntheses for South Florida coastal waters.

For objective (1) a real-time system will be developed in the two major middle Keys passages (the Seven-Mile Bridge and Long Key channels) to monitor the outflow of high salinity Florida Bay water. Sea level height differences across the Keys from CMAN/Seakeys stations will be calibrated with ocean current data from moorings and shipboard ADCP surveys to develop a new, continuous real-time monitoring system for the volume flow through the Keys passages towards the coral reefs of the FKNMS. Moored sensors transmitting data in real time to AOML via a cellular data link will simultaneously monitor the temperature and salinity of the outflow. For objective (2) new interdisciplinary hydrographic surveys and satellite-tracked surface drifter releases will be made in the Tortugas Ecological Reserve. For objective (3) a Web-site will be developed to synthesize these and a wide range of other regional oceanographic data products, to bring relevant information to those who need it in a timely fashion allowing for early warning of environmentally harmful events.