

# Shallow Water Positioning System

NOAA's National Geodetic Survey (NGS) is currently developing and testing a Shallow Water Positioning System (SWaPS). Primarily for coral reef, sea grass, and damage assessments, SWaPS provides precise ( $\leq 10$  cm) horizontal positions for visible underwater features. The recorded imagery is entered into a Geographic Information System, where data can be viewed, archived, and monitored for secular changes.


SWaPS provides research opportunities to quantify patterns of damage and recovery on shallow coastal habitats, including:

- The potential for surveying large areas rapidly without the need to deploy divers,
- The ability to return to specific locations within damaged areas without establishing permanent tags or markers, and
- The ability to survey an area remotely without specialized field personnel.

NGS is collaborating with the Florida Keys National Marine Sanctuary and the University of Miami to test the practical application of SWaPS in several shallow habitats located within the boundaries of Biscayne National Park, Florida, and other areas within the Florida Keys.

**For more information, please contact:**

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The U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Ocean Service  
National Geodetic Survey

The National Geodetic Survey (NGS) defines and manages the National Spatial Reference System, which determines position, height, distance, gravity, and shoreline throughout the United States. Since 1807, NGS and its predecessor agencies have led the world in precise positioning and developed emerging technologies for the public. NGS provides its expertise and a wealth of free information, including direct access to its data base on the World Wide Web at: [www.ngs.noaa.gov](http://www.ngs.noaa.gov).

