Integration of GPS, Photogrammetry, and GIS

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ABSTRACT

The Photogrammetric Branch of NOAA now produces accurate base maps by combining the technological advances of aerial photography, Global Positioning System (GPS), and Geographic Information System (GIS). The combined technologies have enabled the production of a Florida Keys National Marine Sanctuary GIS. This composed of approximately 3500 square nautical miles of interconnected islands and benthic communities. Much of this area is being over-stressed by commercial development and recreational activities. A description of this project will be presented in its phases of operations: the initial field work, GPS assisted aerial photography and aerotriangulation, digital compilation, and benthic classification. The GIS as a final product will also be presented.

A futuristic look at the integration of other imagery sensors, such as Multispectral Scanners (MSS) in the performance of mandated programs will be discussed. Anticipated applications of MSS and photographic composite data sets include efficient inventory of wetlands, quick response for natural disaster damage assessment, pollution tracking, submerged aquatic vegetation mapping, and marine mammal studies. A marine resources GIS may play a central role in the production of maps and digital data available for traditional nautical charting, the developing industry of electronic charts and marine resource management.

KEY WORDS: Global positioning system, Photogrammetry, Geographic information system, Multispectral scanner, Marine resource management, Benthic classification, Nautical charting, Electronic charts.

INTÉGRATION DU GPS, DE LA PHOTOGRAMMÉTRIE ET DES SIG

Résumé

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