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Organization

Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

Title

Southern Chesapeake Bay Water Color and Circulation Analysis

Report

Monthly report for the month of June

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Principal Investigator

William J. Hargis/ M. Nichols

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Technical Monitor

Dr. David Oberholtzer
NASA-Wallops Station
Wallops Island, Virginia 23337

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

DISPERSAL PATTERNS DEDUCED FROM SKYLAB PHOTOGRAPHY
Nichols, Maynard M., Virginia Institute of Marine Science,
Gloucester Point, Virginia 23062

Color and tone patterns of Skylab photography display large scale patterns of apparent sediment-laden water that indicate suspended sediment transport. Patterns form massive perturbations, outflow plumes, turbidity maxima and gigantic gyral. Dispersal is revealed by pattern interpretation, supplemented by surface observations, historical data and by spectral and temporal film analysis.

Analysis of lagoons and estuaries shows 3 modes of transport leading entrapment, redistribution or escape of sediment depending on local weather, tide, runoff and circulatory conditions. From coastal supply points, i.e. rivers, shores and shoals, sediment is widely dispersed in shelf areas, decreasing exponentially seaward partly by diffusion but mainly by advection. Seaward dispersal routes are determined either by cape geometry or by offshore density currents and convergence of coastal currents. The relative importance of transport modes for different patterns is summarized in a graphical model. Usefulness of Skylab photography for study of large scale dispersal will be documented by examples from different parts of the world.

Abstract contains author identified significant results

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