OCEAN ACOUSTICS DIVISION

The Ocean Acoustics Division (OAD), a division of the Atlantic Oceanographic and Meteorological Laboratory (AOML), gathers, analyzes, and reports coastal ocean data on anthropogenic discharges and their potential environmental impacts. Additionally, OAD has an ongoing research program on the use of acoustics to measure coastal and deep ocean rainfall. The Division works in cooperation with other federal, state, and local authorities to maximize research knowledge for use in economically and environmentally important projects in the coastal ocean.

CURRENT RESEARCH PROJECTS

Real Time Current Measurement System (RTMS) for Dredge Disposal Guidance and Coral Reef Protection

As a result of increasing export/import shipping and cruise line activities, the Port of Miami is presently conducting a major expansion of the turning basin at the south side of the Dodge Island port facility. This project will result in the need to relocate up to 20,000 cubic yards of dredge material daily for several years. The approved ocean site for placement of the dredge material from the port is known as the Offshore Dredge Material Disposal Site (ODMDS). Ocean current conditions at the site are monitored in real time to provide discharge or non-discharge advice in order to protect valuable coral reefs.

Coastal Ocean Waste Disposal (COWD)

Within the framework of the Environmental Stewardship/Coastal Ecosystem Health portfolio of the NOAA 2005 Strategic Plan, the Ocean Acoustics Division, in cooperation with other AOML divisions, other NOAA components, other federal agencies, state governments, municipal governments, and academia, has been carrying out an extensive program on effluent plume transport, dilution, and fate. A particularly powerful aspect of OAD's effluent studies include the use of acoustics for visualizing the sub-ocean surface distribution of plume material. Once this visualization is available, highly targeted sampling of plumes can occur to assist in understanding the fate and impact of pollutants in the coastal environment.

Rainfall Measurement System (RMS)

As part of NOAA climate study efforts, a novel acoustical rainfall measurement system for use in the open ocean is under study. This system detects rainfall by measuring the sound produced in water by drops of rain falling upon the ocean's surface. Rainfall over the ocean is a critical unknown in solving the climate puzzle, as well as for short-term forecasts of landfalling storms. Acoustics holds the promise of providing validation of large, spatial-scale satellite rainfall measurements.

Deep Ocean Relocation (DOR)

The Deep Ocean Relocation program concerns research into the viability of the transport of dredged material in containers to the deep ocean for disposition, thereby potentially lessening coastal contamination. This program is a joint project of the Ocean Acoustics Division and the Ocean Chemistry Division.

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