

## **ASSESSING THE EFFECTS OF AGRICULTURAL CONSERVATION PRACTICES ON A CORAL REEF ECOSYSTEM: A NOAA AND USDA PARTNERSHIP**

*Adam G. Zitello, NOAA/NOS/NCCOS/CCMA/Biogeography Branch  
David R. Whitall, Ph.D., NOAA/NOS/NCCOS/CCMA/COAST Branch  
Mark E. Monaco, Ph.D., NOAA/NOS/NCCOS/CCMA/Biogeography Branch  
John D. Christensen, NOAA/NOS/NCCOS/CCMA/COAST Branch*

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Land based sources of pollution are a significant stressor to near shore, shallow-water coral reef ecosystems. A collaborative effort between the National Oceanic & Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA) is exploring the environmental effects that agricultural conservation practices implemented in the watershed may have on the coral reef ecosystem. The partnership seeks to establish a long-term research and monitoring program in Jobos Bay, Puerto Rico to develop collective watershed and coral reef management and conservation options. Jobos Bay, in south-central Puerto Rico, was selected by project partners as an ideal study site due to the presence of commercial-scale agricultural operations and a NOAA National Estuarine Research Reserve. The project's general approach includes describing the baseline conditions in Jobos Bay, implementing agricultural conservation practices on the watershed and measuring the response in Jobos Bay's water quality, biogeochemistry, benthic habitats and marine biota. It is anticipated that relatively short term changes will be measured in water quality and marine sediments; while long-term changes in higher trophic levels, such as fishes, may be detected in future years.

This partnership provides both land and marine resource managers with an evaluation of the conservation options that are most effective in mitigating the impact of land-based sources of pollution on coral reef ecosystems. Conservation practices are being identified that exhibit an ability to improve the water quality of agricultural effluent draining to coastal water bodies. These practices address the transport of harmful nutrients, pesticides and other contaminants to the adjacent coral reef ecosystem. Additional conservation practices will be identified that increase the efficiency of water use on irrigated lands. Preliminary results of two years of collaboration between NOAA, USDA and local partners are available for discussion.

Adam G. Zitello  
NOAA/NOS/NCCOS/CCMA/Biogeography Branch  
1305 East West Highway, N-SCI-1, SSMC4 Rm. # 9265  
Silver Spring, MD 20910  
*Adam.Zitello@noaa.gov*

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(301) 713-3028 x176