6-2007

Analysis of Factors Influencing Southeast Florida Coral Reef Community Composition

M. A. Phillips
Nova Southeastern University

David S. Gilliam
Nova Southeastern University, gilliam@nova.edu

L. K. B. Jordan
Nova Southeastern University

Richard E. Dodge
Nova Southeastern University, dodge@nova.edu

Louis E. Fisher
Nova Southeastern University

MARINE SCIENCE EDUCATION IN THE BRITISH VIRGIN ISLANDS

C. Petrovic
Island Resources Foundation, 123 Main Street, Road Town, Tortola, British Virgin Islands
clivep@surfbvi.com

Historically, the public educational systems of the British Virgin Islands, and all Overseas Territories (OT), were patterned after those of the United Kingdom (UK). All OT's are administered by the Foreign and Commonwealth Office in London. This relationship provided technical assistance and educational support in the form of structured curricula patterned after the UK model. The inclusion of marine science in the school curriculum was peripheral at best. At the primary levels, marine science was introduced as a minor topic in general science and in geography. The situation was similar in middle school and high school programs. Since the school curriculum reflected UK standards, there was little opportunity to introduce topics of local relevance and interest. Also, the curricula were designed to prepare students for standardized exams such as the GCE or the regional CXC. Thus, there was little interest in teaching subjects not directly related to the examination requirements. Furthermore, as high school students advanced toward the O Level and A Level curricula, courses became even more structured with little room for local variation. Until relatively recent years, marine science received cursory coverage except as an occasional elective. Teacher education programs reinforced this approach. Few teachers received sufficient meaningful training, or could schedule class time, in the marine sciences. Toward the close of the 20th Century, this began to change. New emphasis was placed on incorporating subjects of regional, local, and cultural significance into the academic curriculum. This culminated in the BVI Government forming a Curriculum Reform Committee to review, and revamp where necessary, the education process throughout the Territory. In 2005, the committee developed a marine science curriculum for the secondary level. This program is under review and full implementation is expected within two years. In addition to the public schools, there are several private schools, both religious and non-sectarian. While these schools may follow the public school curricula, they have more opportunity to meet local needs. Today, these schools are launching innovative programs in marine science and environmental studies. The emphasis of new curricula is to harmonize the need to teach to international standards while providing courses of study of greater relevance to the local environment.

ANALYSIS OF FACTORS INFLUENCING SOUTHEAST FLORIDA CORAL REEF COMMUNITY COMPOSITION

M.A. Phillips*, D.S. Gilliam, L.K.B. Jordan, R.E. Dodge, & L.E. Fisher
*National Coral Reef Institute, Nova Southeastern University Oceanographic Center, 8000 North Ocean Drive, Dania Beach, Florida 33008, USA

The southeast Florida reef system lies offshore a heavily populated and urbanized coast. These high latitude reefs are not only affected by their geography but also by anthropogenic factors that accompany an urban area such as dredging activities, ship groundings, waste water outfalls, runoff and beach erosion. Sedimentation has been shown to influence stony coral community composition including dominance, abundance, cover, diversity, and colony size. Using annual monitoring data collected since 2000, the southeastern Florida reef community is being analyzed to examine if and how sedimentation and other factors such as depth, distance from shore and distance from port channels might influence community composition. All data was collected by SCUBA divers conducting 30m^2 belt transect surveys at 24 sites offshore Broward County (southeast), Florida within a depth range of 6 to 18 meters. Stony coral data included colony size, abundance, diversity, percent cover, and mortality. Sponge and octocoral density were collected to gather a more complete picture of community composition. Three sediment bottles at each annually monitored site were collected every 60 days. Weight and grain size of the contents were analyzed and used to determine sedimentation rates at each site. Additionally, the reefs off the southeast Florida coast can be categorized into unique habitat types. These habitat types are also being considered when studying reef community composition and its relationship to sedimentation and other factors.

Keywords: Coral, sedimentation, community composition, southeast Florida