The Environmental Significance of Some Microscopic Organisms Around Nevis, West Indies

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Abstract

Coastline development such as hotels and industrial sites impact on the near-shore environment. In these environment-conscious times, developers are required to provide (a) indicators of the probable environmental impact of developments, and (b) evidence of actual impacts following construction. Study of the flora and fauna provides the necessary data. Marine animals range in size from whales to microscopic organisms, but the smaller ones are more easily sampled for environmental purposes. One particularly useful and abundant group of microscopic organisms, the Class Foraminifera (forams), has been widely studied by marine biologists, but has yet to be used to its full potential. Forams produce shells that preserve easily and can be used in the planning stage for an engineering project to (a) examine patterns of sediment transport, and (b) identify areas susceptible to pollution. This paper illustrates these environmental applications of foram populations around the island of Nevis. Several species associated with elevated carbon levels live on the Leeward coast only. Ammonia sobrina indicates a bay with high pollution susceptibility. The patterns are common to many Caribbean islands, showing that forams are a major investigative tool for projects that impact on the near-shore environment.

Keywords: Foraminifera, Caribbean, coral reef, pollution, seagrass.