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## JOURNAL OF MARINE RESEARCH

The *Journal of Marine Research*, one of the oldest journals in American marine science, published important peer-reviewed original research on a broad array of topics in physical, biological, and chemical oceanography vital to the academic oceanographic community in the long and rich tradition of the Sears Foundation for Marine Research at Yale University.

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*Journal of Marine Research* Classic Articles

**The influence of deposit-feeding organisms on sediment stability and community trophic structure**

by Donald C. Rhoads and David K. Young

Originally published May 15, 1970, in the *Journal of Marine Research* 28(2), 150–178.

EDITOR'S COMMENTARY

This seminal paper by Donald Rhoads and David Young was a highly creative, interdisciplinary break from the standards of the time. It brought a new focus onto how benthic organisms modify sediment properties, potentially mediating interactions with other species, structuring community distributions, and governing coupling between sedimentary deposits and overlying waters.

Classical studies of marine benthic communities had traditionally examined species distributions and their statistical correlations with sediment type with little consideration of interactions of fauna with the sedimentary environment or the consequences of biological modifications of this environment. For example, it was widely recognized that many deposit-feeding benthos were often segregated from suspension feeders into muds and sands, respectively, but interpretations of why centered almost entirely, although not exclusively, on food resources.

The pioneering work by Rhoads and Young is a remarkable synthesis of physical and biological field observations, deceptively simple experiments, autecology, and clear deductive reasoning. They proposed a novel view and conceptual theory of ecological relationships in sedimentary systems: trophic group amensalism. In doing so, they also introduced a new technology—sediment profile imaging, which spawned use of sophisticated SPI cameras to rapidly assess benthic communities and sediment properties. This opened the way for other innovative approaches, such as planar imaging sensors.

Rhoads and Young fomented a conceptual revolution that transformed perspectives and stimulated a wide-range of later research on recent and ancient sedimentary environments, including ecological, sediment transport, and biogeochemical processes.

—Robert C. Aller