



Effect of the brittle star *Amphiura filiformis* (Amphiuridae, Echinodermata) on oxygen flux into the sediment

Vopel, Kay, David Thistle, Rutger Rosenberg

Limnol. Oceanogr., 48(5), 2003, 2034-2045v | DOI: 10.4319/lo.2003.48.5.2034

ABSTRACT: O₂ plays a key role in early sedimentary diagenetic processes, but the effect of most macrofaunal species on the pathways and rates of supply of O₂ into the seabed are not well known. We investigated the effect of the ophiuroid *Amphiura filiformis*, one of the dominant macrobenthic species on soft bottoms in the northeast Atlantic, at depths of ~15-100 m, in a laboratory environment. We determined how the presence of the ophiuroid changed the total O₂ uptake of macrofauna-free sediment by combining measurements from a microcosm approach and an approach that uses microelectrodes and a flushed aquarium. We suggest that natural populations of *A. filiformis* can account for 80% of the total flux of O₂ into the soft bottom. At least 67% of this portion is due to the diffusion of O₂ across additional sediment-water interfaces excavated by the brittle star.

Article Links

[Download Full-text PDF](#)

[Return to Table of Contents](#)

Please Note

Articles in L&O appear in PDF format. Open access articles may be freely downloaded by anyone. Other articles are available for download to subscribers only, or may be purchased for \$10 per article. All L&O articles are moved into Open Access after three years.