

THE 3-D ecoSCOPE: A TOOL FOR INVESTIGATING MICRODYNAMICS AND MICRODISTRIBUTIONS

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ABSTRACT

The behavior and microdistribution of planktivorous juvenile herring, Clupea harengus, and the copepod, Acartia discaudata have been investigated in Kiel Fjord. The dynamic processes inside a zooplankton microlayer are analyzed at the mm-scale to investigate how small-scale physics affect feeding success. To study these processes specific tools have been developed for in situ measurements at high magnifications in real-time, the "ecoScope", an imaging system allowing for an approach close enough to view the evasive predators as well as their prey via an endoscope, and the "dynIMAGE" program, image processing software allowing for compensation of system-swaying caused by microturbulences. A recent addition to this unique system is the capability of 3-D imaging through a head mounted helmet.