

HR: 16:15h

AN: OS44H-06

TI: Population Level Effects of Transport Variability Attributable to Larval Behavior and Environmental Variation

AU: * Law, C

EM: law@imcs.rutgers.edu

AF: Institute of Marine and Coastal Science, Rutgers University, 71 Dudley Rd, New Brunswick, NJ 08901 United States

AU: Quinlan, J A

EM: law@imcs.rutgers.edu

AF: Institute of Marine and Coastal Science, Rutgers University, 71 Dudley Rd, New Brunswick, NJ 08901 United States

AB: Connectance between geographically separated sub-populations of marine organisms has long been recognized as an important but poorly understood process. For most marine populations, physical models of ocean circulation are one of the only tools available for predicting the transport of larval propagules. But many questions remain regarding the relative importance of physical and biological variability. For instance, does larval behavior in the water column have a larger impact on population dynamics than does interannual variability in environmental forcing? It is important to resolve these questions as we move toward practical applications of circulation models in resource management. In this paper we couple a circulation model and an individual-based model to evaluate transport under a variety of conditions and assumed behaviors controlling vertical position. The modeled transports are then linked to a spatially-structured population model of a generalized benthic species. These coupled models are used to explore the relative importance of physical and behavioral variability on demographics and distribution.

DE: 4813 Ecological prediction

DE: 4815 Ecosystems, structure, dynamics, and modeling

DE: 4853 Photosynthesis

SC: Ocean Sciences [OS]

MN: Ocean Sciences 2006

[New Search](#)

