Title: Impacts of Changing Environmental Conditions on Larval Dispersal and Connectivity on the Northeast U.S. Shelf

Joshua Zahner

Abstract

Continued oceanic warming is expected to modify the distribution of marine populations in the coming years. Catch and stock assessment data provide evidence for poleward distributional shifts in marine fish populations through-out the Northeast US Continental Shelf (NES). This study utilized a set of large-scale larval dispersal models to compare expected fisheries habitat between two time periods indicative of different thermal regimes within the NES region for five important commercial species. Our results found further evidence of poleward distributional shifts at both adult and juvenile life stages, as well as small scale increases in inter-regional larval exchange rates throughout different subregions of the NES for all species. These results confirm previous studies that found evidence for poleward habitat shifts, and indicate that regional fisheries management should expect to see wide-scale changes in species composition and ecosystem function throughout the NES in coming decades.