

Final Report Summary

Food Webs in Long Island Sound: Review, Synthesis and Potential Applications

The objectives of this study was to assess the availability and quality of data that could be used to conduct research on the structure and dynamics of food webs in Long Island Sound and use a portion of the data to develop and analyze a preliminary food web model for LIS and assess these results relative to future research needs and management efforts in LIS. Results: Based on literature assessment, there is a significant lack of LIS-specific data that can be used for food web model development for inshore waters, bays and rivers, and also for many taxonomic groups. There is fair amount of data on primary production, and demersal fish and large invertebrate biomass, although not LIS specific diet composition for the latter. Given the paucity of data for certain taxonomic groups and for inshore and nearshore shallow habitats in the Sound, the project focused on developing a food web model for the offshore, deep-water environments of LIS. The completed model is balanced and used to generate various food web metrics describing the structure of the food web and the flow of biomass among the functional groups in the web. Comparison of network flow metrics to other estuarine systems suggests that food web dynamics in Long Island Sound may differ on several accounts from these other systems, while other aspects of network dynamics were similar. The Ecopath model developed in this project is the first step in the process of developing more details and potentially more accurate food web models for Long Island Sound. It provides a framework for continued food web model development and by incorporating the static Ecopath model into dynamic food web modeling routines one can explore various impact and management scenarios.