

Freshwater fish assemblage patterns in Rhode Island streams and rivers.

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Patterns in fish assemblages in streams and rivers can inform watershed and water management, yet these patterns are not well characterized for the U.S. state of Rhode Island. Here we relate freshwater fish data collected by the Rhode Island Department of Environmental Management to landscape and water use variables to characterize the patterns that occur in streams and rivers of the state. Species richness ranged from zero to 20 species, with a mean of 4.6 species per site; the most common species were brook trout (*Salvelinus fontinalis*) and eel (*Anguilla rostrata*). Cluster analysis identified four main groups of sites: 1) smaller coldwater sites dominated by brook trout, whose abundance was negatively related to impervious cover; 2) smaller warmwater sites with high impervious cover and few flow dependent species; 3) larger coldwater sites with flow dependent species; and 4) larger warmwater sites with more introduced species, a higher rate of water withdrawal, and a greater number of dams per square mile. An understanding of the natural and human influence on these riverine ecosystems provides guidance for their management.

AV Needs: (LCD Projector)