

Recovery dynamics of a PCB-contaminated creek fish community

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Abstract

Polychlorinated Biphenyls (PCBs) from the Sangamo-Weston Superfund Site near Clemson, South Carolina, USA, were released into the Twelvemile Creek until the early 1990s. PCB concentrations in fish in this creek have remained elevated: levels in six target fish species are still above the wildlife limits for kingfisher and mink. We used the AQUATOX model to represent the concentrations and dynamics of total PCB in a system of six connected creek segments. Studies in this system that classified gut contents of six fish species into eight food item categories were used to parameterize the food web. The model was calibrated to measured data then used to estimate recovery for the different species, sites, and system as a whole. The model can be used to predict future PCB concentrations in fish under different model assumptions (fish movement between segments, varying habitat conditions) and different management scenarios (proposed dam removal).