

Spatial relationships of young-of-year yellow perch (*Perca flavescens*) and predators in the central basin of Lake Erie.

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Recruitment of yellow perch in Lake Erie varies across years. Consecutive year class strength alternated from above average (2001, 2003) to poor (2000, 2002, 2004).

Density-dependence may influence the spatial distribution of young-of-year (YOY) yellow perch. Therefore, we examined trends in the spatial distribution of YOY yellow perch with respect to year-class strength and in response to predator distributions. Catch rates (catch-per-hectare towed, CPHT) were calculated from bottom trawl surveys (2000-2004) conducted at 9 sites across the central basin of Lake Erie. When models of YOY yellow perch CPHT were separated by year and tested for site effects, we observed significant relationships in 2001 and 2003 (full factorial linear model, $p < 0.05$).

Rasterized GIS interpolations of YOY distributions were skewed within the basin in years of weak recruitment and homogeneous across sites in years of strong recruitment. Distribution during years of high year-class strength may decrease the impact of localized biotic and environmental effects, thereby increasing overall probability of survival. We also observed significant relationships between CPHT of YOY and cannibalistic adult yellow perch, implying that predatory effects may be greater in years of high recruitment.