

## Effects of Climate on Smallmouth Bass (*Micropterus dolomieu*) Populations: Sixty Years of Research at Lake Opeongo and Beyond

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Scientists from both the University of Toronto and the Ontario Ministry of Natural Resources have been studying the smallmouth bass (*Micropterus dolomieu*) population of Lake Opeongo since 1936. This work has demonstrated strong and consistent associations between short and medium term climate variability and variability in growth and reproductive rates of this population. In some years, climatic influences are partially masked by density-dependent processes, however regression techniques can be used to filter out these effects and clarify the consistent nature of climatic influences. Short-term studies from other lakes in the general area of Algonquin Park further demonstrate the important role of climate in shaping significant events and processes in the life history of this species (e.g., timing and duration of the spawning season, larval development times, young of year growth rates, winter survival rates). Quantitative models based on these studies are capable of accounting for both the current position of the northern zoogeographic boundary for the species, and the response of that boundary to climate warming. A northward extension of the boundary by up to 500 km is possible under reasonable climate change scenarios.

### Additional Readings

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