

Biodiversity of Algonquin Park Fishes

Nicolas E. Mandrak

Great Lakes laboratory for Fisheries and Aquatic Science
Department of Fisheries and Oceans, 867 Lakeshore Road, Burlington, ON, L7R 4A6
mandrakn@dfo-mpo.gc.ca
(905) 336-4842

Algonquin Park has a depauperate fish fauna relative to other areas of southern Ontario. Only 49 species are native to the Park. This low number of species is the result of limited colonization opportunities following the last Ice Age and relatively cool current climate. Of the 49 species, only the American eel (*Anguilla rostrata*) is no longer present. It was last seen (and eaten) in the Park in 1936 and its loss is undoubtedly related to construction of dams in the lower reaches of the Petawawa and Madawaska rivers. Although the shortjaw cisco (*Coregonus zenithicus*) has been recorded in White Partridge Lake, recent analyses of this population indicate that it is likely a morph of the lake herring (*Coregonus artedii*) also found in the lake.

The distributions of the native species can be separated into five distinct patterns: 1) ubiquitous - found throughout the Park (e.g., creek chub (*Semotilus atromaculatus*), brook trout (*Salvelinus fontinalis*)); 2) Petawawa - found throughout the Petawawa drainage (e.g., fallfish (*Semotilus corporalis*), troutperch (*Percopsis omiscomaycus*)); 3) lower Petawawa - found only downstream from Cedar Lake (e.g., short-head redhorse (*Moxostoma macrolepidotum*), walleye (*Stizostedion vitreum*)) of Lake Travers (e.g., rosyface shiner (*Notropis rubellus*), channel catfish (*Ictalurus punctatus*)); 4) lowland margin-found only around the perimeter of the Park (e.g., central mudminnow (*Umbra limi*), ninespine stickleback (*Pungitius pungitius*)); and, 5) sporadic-found throughout the Park only in areas of suitable habitat (e.g., round whitefish (*Prosopium cylindraceum*), brassy minnow (*Hybognathus hankinsi*)).

Within the last 150 years, eight species and one hybrid (splake) have been introduced to the Park, where four of these (hornyhead chub (*Nicomis biguttatus*), rainbow smelt (*Osmerus mordox*), smallmouth bass (*Micropterus dolomieu*) and largemouth bass (*Micropterus salmoides*)) have established reproducing populations. Unfortunately, the ranges of several native species (northern pike (*Esox lucius*), rock bass (*Ambloplites rupestris*), walleye (*Stizostedion vitreum*)) and introduced species (smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*)) continue to expand in the Park as a result of unauthorized transfer and subsequent natural dispersal. These species have the potential to seriously impact native fish communities.

The same processes that have limited species richness have also allowed unique populations and communities to develop in Algonquin Park. The Opeongo whitefish is a dwarf form of lake whitefish (*Coregonus clupeaformis*) described from Lake Opeongo. Distinct populations of brook and lake trout (*Salvelinus namaycush*) have been identified in the Park, including an interesting colour morph of lake trout (silver with no markings) in Kingscote Lake. Most of the lake and stream communities lack large cool and warm-water piscivores, and many lack piscivores altogether.

Parks provide ideal settings for protecting biodiversity. However, the same threats to biodiversity outside parks are often present inside parks, and Algonquin Park is no exception. The main threats to fish biodiversity in the Park are commercial logging, recreational fishing, introduced species and climate

change. These impacts must be minimized through proper management based on sound science, otherwise the unique fish biodiversity of Algonquin Park may be lost forever.

Additional Readings

Crossman, E.J. and N.E. Mandrak. 1992. *Fish Distribution and Community Analysis, Algonquin Park: Annual Report for 1991 and Completion Report, 1989-1991*. Department of Ichthyology and Herpetology, Royal Ontario Museum. Unpubl. Rept.