

About the Book

This is a book about freshwater fishes that occur in the rivers of Essex County, Ontario, and in the waters of Lake St. Clair, the Detroit River and the western basin of Lake Erie. These waters that surround Essex County are among the most popular angling destinations in North America for Muskellunge, Northern Pike, Smallmouth Bass, Walleye and Yellow Perch. The fishes described in the Field Guide include popular pan fishes, large game fishes, commercially-caught fishes and forage fishes.

This region of the Laurentian Great Lakes is a hot spot for fishes. There are 102 fish species that occur in these waters. Descriptions, photographs and distribution maps are provided for each species. Identification keys (road maps) are provided so that by following a description of “key” features found on a fish, you will be able to identify the species by name.

There are lists of fishes found in the rivers and lakes, including the waters around Pelee Island and the ponds of Point Pelee National Park. Species at risk and potential invaders are highlighted. There are historical accounts of fish hatcheries, helpful information about how to carve fish decoys and tips for ice fishing.



Point Pelee - The Tip on December 8, 2007

The book is a field guide, which means that it is meant to be used in the field. Take the book along with you when you go fishing. The book opens flat for easy reference when checking photographs or descriptions.

Background

Worldwide, there are as many kinds of fishes as there are amphibians, reptiles, birds and mammals combined. Over 27,000 species of fish are known, and they live in habitats ranging from ocean depths to mountain streams¹. Most fishes have bony skeletons and 41% of bony fishes live in fresh water. This is remarkable when one considers that 97% of the water on earth is in the oceans and only 0.009% of the water on earth is in lakes and streams¹. Most anglers are surprised to learn that there are about 800 fish species in North America², 196 species in the Great Lakes basin³, and 169 species in Ontario⁴. There are 102 fish species, belonging to 25 families in Essex County and the surrounding waters.



Reproductive Male Bluegill

Our glacial history helps to explain why there is such a diversity of fishes in the Laurentian Great Lakes. From 100,000 to 18,000 years ago, much of Canada and the northern parts of the United States were covered with a layer of ice up to 1-km thick⁴. When glaciers advanced from the north, freshwater fishes were pushed south to the Mississippi River drainage and east to the Atlantic. When the ice sheets finally retreated, they left huge depressions (the Great Lakes) which were quickly filled and then overflowed with melting ice water. The flood waters from the newly formed lakes spilled over into the Atlantic and Mississippi drainages⁵. These waterways enabled fishes and other aquatic life to disperse westward and northward into our region. As ice continued to retreat to the far north, meltwater

lakes formed throughout Canada. The meltwaters provided a migration route to the south for other species that had occupied refugia - isolated patches free from ice cover. Once free from the weight of the ice, land rebounded (rose). The height of land delineated watersheds, limiting subsequent colonization of aquatic life⁴.

The productivity of the flat lands in Ohio, Ontario and Michigan can be traced to their glacial origins. These lands, former lake bottomlands, were naturally fertilized from glacial outwash (sediment deposited by the streams flowing away from melting ice), meltwater and submergence⁵. Wetland vegetation kept nutrients on the land by filtering sediments out of the water before it reached streams and the waterways from Lake Huron downstream to Lake Erie. Today, tile drains and their connection to canals provide the conduits to transport nutrient-rich waters to the already productive receiving waters. In spite of reduced water quality, the biodiversity of fishes has prevailed.



Northern Pike

This Field Guide focuses on the fishes living in the waterways of Essex County and in waters that surround the county. Essex County, located in the southwest corner of the province of Ontario, is the most southerly landmass in Canada. The county, with a surface area of 680 km², is surrounded by water - to the north by Lake St. Clair, to the west by the Detroit River and to

the south by Lake Erie. The flat, clay plain of Essex has poor natural drainage. As a result, the streams have undergone extensive channel modification and dredging. Much marshland has been drained⁶. Essex County has more kilometers of municipal and agricultural drains compared with any other county in Ontario⁷.



Peche Isle on the Detroit River

Land and waterways are intimately linked. Rivers meander through the landscape. Streamside vegetation and land-use activities affect water quality and the life in the receiving waters⁸. Of the 175,000 ha of land in Essex County, 70% is used for agriculture and more than 20% is urban^{9,10}. Just 7.5% of the county consists of areas with natural habitat including forests, wetland, and tall grass prairie¹⁰.

The fishes of Essex County are mostly warm-water fishes. Warm watercourses typically occur at low elevations and experience summer water temperatures in excess of 25 °C. Typical warm-water fishes include catfishes, minnows, and some sunfishes and basses.

Because much of the land in Essex County is agricultural and streamside vegetation is often absent, sediment and nutrients run directly off the land into the streams. Because of this, many of the watercourses are muddy. But bottom types vary from bedrock, cobble, sand or silt to mud with patches of gravel.