

An Introduction to Portage County Impoundments

Six impoundments were included in the Portage County lake study: Amherst Millpond, Bently Pond, Jordan Pond, McDill Pond, Rosholt Millpond, and Springville Pond. Impoundments are the ponds/lakes that are created when stream flow is restricted. Such impoundments are common lakes in Wisconsin and were often the result of dams used to make energy. The major water source for these lakes is the river. Characteristics of impoundment lakes include relatively large rates of water entry compared to lake size and correspondingly, a short water residence time in the lake. Summer water temperature for the surface layer of these lakes is generally cooler than the seepage lakes because of this high rate of inflow, although often the increased surface area of an impoundment results in warmer water temperatures than in the upstream river. The smaller impoundments have the coolest water temperature. That reflects the relatively large amount of streamflow from predominantly groundwater-fed streams that enter these impoundments. The largest impoundment, McDill Pond, has the highest summer temperature, reflecting its large size relative to the amount of water that enters and long residence time that allows warming. Major water quality is also largely influenced by land-use practices upstream of the impoundment that influence river water quality. The inflow river delivers sediment and nutrients to the impoundment, and as the water slows in the impoundment, the sediment drops out. This nutrient rich organic material makes ideal substrate for growing aquatic plants. Over time this inflow material along with aquatic plant tissue from previous years growth build up on the bottom of the impoundment and can reduce the depth. These characteristics result in impoundments as shallow aquatic plant/algae rich water bodies.

For additional information, terminology, and concepts in this document please consult the *GUIDE FOR BACKGROUND INFORMATION AND INTERPRETATION OF PORTAGE COUNTY LAKE STUDY RESULTS AND RECOMMENDATIONS*.