

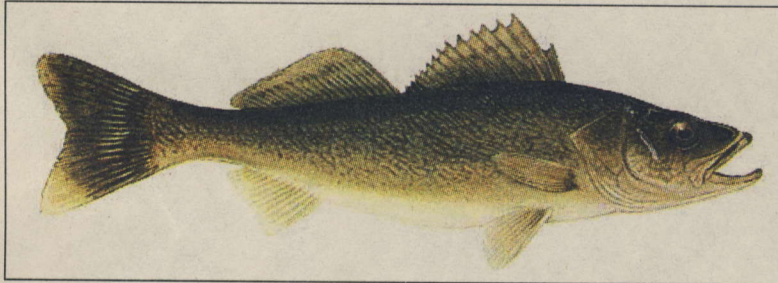
WALLEYE IN THE PEACE REGION OF BC

FISHERIES BIOLOGY CLASS

First of all, let's get our terminology straight. In many parts of North America, especially Canada, walleye are commonly referred to as "pickerel". I found that in the Peace, in keeping with our different ways, we don't seem to have adopted this name. Just as well because "pickerel" is wrong, and "walleye" is the right name. Pickerel is actually a whole different species of fish and if you look up "Chain pickerel" it looks very much like a Northern pike. Walleye is more descriptive of the species, taking its name from the "glassy" or "dull" appearance of its eyes.

Walleye populations in British Columbia represent the western-most limits of the distribution for this species. Walleye have been successfully stocked in Charlie, and Swan lakes, and unsuccessfully into North Cameron Lake. Walleye stocked into Lake Roosevelt, Washington, invaded BC waters via the Columbia and Kettle Rivers. The majority of walleye populations in B.C. are found in rivers of the Peace and Liard watersheds.

Walleye spawn in the spring, typically in water temperatures ranging from 5 to 11 degrees which coincides with ice break-up. In rivers they prefer to spawn in areas with significant water flow, while in lakes they typically will spawn along shorelines that experience constant wave action from prevailing winds, which in most cases is along the eastern shores of a lake. These habitats will ensure that the fertilized eggs are well-oxygenated from currents or wave action. This increases the chances of survival for walleye eggs, which already face natural mortality rates upwards of 99 percent. The rate of development of walleye eggs is influenced greatly by water temperatures. A slow, steady increase in water temperature is ideal for egg development. However, spring weather is anything but constant from year to year. This causes highly variable hatching rates for walleye, resulting in what fisheries biologists refer to as "strong" or "weak year classes", depending on how successful the hatches are. The rate at which eggs hatch is important because the newly-emerged fry will rely on their yolk sac as an energy source, until they lose it, and will then rely on small plankton in the water as a food source. Therefore, if the walleye larvae develop before the food becomes available, they could die.



Walleye compensate for the extremely high mortality rates of eggs by producing large numbers of eggs. The term used in fisheries biology to describe egg production is "fecundity". Usually walleye from southern populations have a higher fecundity than those in northern ones. In the north walleye typically produce anywhere between 20,000 to 100,000 eggs per female, while in the south they can produce upwards of 200,000 eggs per female. The estimated egg production for walleye in Charlie Lake is around 20,000 to 90,000 eggs per female, depending on their age. Older fish produce more eggs.

The walleye population in Charlie Lake is a very unique one in North America. Throughout my years doing walleye research, I haven't come across another population of walleye which relies on plankton as a main food source. Food stomach sampling has revealed that walleye in Charlie feed on plankton at least 80 percent of the time. This is very interesting when we consider that walleye are predators with a well-developed set of teeth, and are not built to filter plankton out of the water

column. Perhaps this is due to the fact that Charlie Lake is extremely productive ("eutrophic") and plankton is so abundant that walleye have learned to take advantage of it as a food source. This high productivity has resulted in angling catch rates that are well-above other waters. A catch rate of 0.33 walleye per hour is considered good fishing for this species. In Charlie Lake that would be considered a bad day, most times catch rates are around 0.6, and exceed 1.0 walleye per hour. The high productivity of Charlie Lake is responsible for the large algae blooms that all local residents are aware of, but is also responsible for the great walleye fishing.

Other established walleye populations are found in Swan Lake, the Peace River, Klua Lake, Maxamish Lake and the Petitot River. We're currently studying the walleye populations in the Petitot, where there are indications that walleye migrate long distances from the headwater lake in Alberta, downstream towards the confluence with the Liard River.

The quality of walleye fishing in the Peace Region is second to none. Enjoy it!

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