

Golden Lake Walleye Stocking Strategy (2025–2031)

Goal

The goal of this strategy is to maintain Walleye angling opportunities in Golden Lake through a put-grow-take (PGT) fishery. Natural recruitment of Walleye in the lake is currently insufficient to sustain the fishery, and annual stocking is proposed to support the recreational, cultural, and economic values associated with Golden Lake.

Background

Golden Lake is a 3,612.5-hectare lake located in the eastern portion of Fisheries Management Zone (FMZ) 15 in Renfrew County. The lake supports a diverse fish community including Walleye, Smallmouth Bass, Largemouth Bass, Northern Pike, Yellow Perch, Lake Whitefish, and Rainbow Smelt. The Algonquins of Pikwakanagan First Nation are located on the shores of Golden Lake.

Walleye in Golden Lake are naturalized, having been introduced to the lake in the early 1900s. Over the past several decades, the population has declined substantially due to a combination of factors including fishing pressure, shoreline development, spawning habitat degradation, changes in water quality, invasive species, and shifts in food web dynamics. Rainbow Smelt are now abundant within the lake and may be contributing to poor Walleye recruitment and early life-stage survival.

Broadscale Monitoring (BsM) surveys indicate that the Walleye population remains impaired relative to other FMZ 15 lakes, with low recruitment and declining abundance. Previous rehabilitation efforts included:

- A five-year harvest moratorium from 2002-2006;
- Stocking of approximately 130,000 summer and fall fingerling Walleye between 2003 and 2005; and
- Regulation changes in 2007 that established a two-fish limit and a 50 cm minimum size limit.

While these actions did not restore a self-sustaining Walleye population, monitoring data demonstrated that stocked fish survived and contributed to the fishery.

Stocking Strategy

The Ministry proposes to stock 15,000 clipped fall fingerling Walleye annually from 2025 through 2031. This represents a stocking density of approximately 4.2 Walleye per hectare annually. The proposed allocation reflects a review of regional stocking priorities and available Fish Culture Section production capacity and is intended to support measurable benefits to the Golden Lake fishery.

Fall fingerlings were selected because their larger size is expected to improve survival and reduce vulnerability to predation. Rainbow Smelt are abundant in Golden Lake and may prey upon newly stocked fish. Modelling based on Rainbow Smelt size structure indicates that a target stocking size of approximately 121 mm total length would largely avoid predation and is routinely achieved through fall fingerling production.

Monitoring and Effectiveness Assessment

The effectiveness of the stocking program will be assessed through BROADSCALE Monitoring surveys. Primary indicators include:

- Relative abundance of clipped harvestable Walleye;
- Contribution of clipped Walleye to the fishable population; and
- Total mortality estimates where sample sizes are sufficient.

The 2026 BROADSCALE Monitoring survey will serve as the benchmark assessment prior to meaningful recruitment of stocked fish into the fishery. A subsequent survey is scheduled for 2031, when multiple stocked year classes are expected to have reached harvestable size, providing the first meaningful assessment of stocking effectiveness.

Expected Growth and Recruitment Timelines

Based on available growth data, Golden Lake Walleye are expected to reach approximately 350 mm total length and become fully recruited to BROADSCALE Monitoring gear at approximately 1.6 years of age. Walleye are estimated to reach 500 mm total length, corresponding to the current minimum harvest size, at approximately 4.2 years of age. These growth rates are faster than the average FMZ 15 Walleye population and are likely influenced by abundant forage resources and low Walleye density.

Based on these estimates:

- The 2025 stocked year class is expected to reach harvestable size in approximately 2029;
- The 2026-year class in approximately 2030; and
- The 2027-year class in approximately 2031.

Adaptive Management and Future Considerations

Future reviews of the stocking program should consider monitoring results, changes in fish community dynamics, and updated information on Rainbow Smelt abundance and size structure. Adjustments to stocking size, rates, or frequency may be considered if new information indicates changes are warranted.

The proposed FMZ 15 Walleye regulation, which includes a harvestable slot size of 40-50 cm and updated catch limits, may also require future modifications to monitoring indicators and assessment approaches if implemented.

This strategy combines annual stocking, effectiveness monitoring, and adaptive management to maintain Walleye angling opportunities and support the recreational, cultural, and economic importance of the Golden Lake fishery.