



IOWA DEPARTMENT OF NATURAL RESOURCES

Sport Fish Restoration Research Findings

Evaluation of Walleye Stocking Strategies in Tributary Reservoirs



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Locations: Statewide

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Evaluation of Walleye Stocking Strategies in Tributary Reservoirs

Walleye are an important sportfish in Iowa and, along with black bass, are targeted by anglers more often than any other fish. Each year the Iowa DNR produces and stocks over 150 million Walleye fry, over 1 million small fingerlings, and hundreds of thousands of advanced fingerlings. Stocking in many locations is necessary to maintain Walleye densities at a high level due to a lack of natural reproduction in those locations. The cost of fish production differs by size, with fry being the cheapest to produce and advanced fingerlings being the most expensive. Survival of stocked fish to the adult fishable population and contribution to the recreational fishery affect the ultimate cost per fish to the angler. Therefore, evaluation of survival of each size is important to ensure stocking strategies are cost-effective. This study evaluated the success of stocking Walleye fry and advanced fingerlings in reservoirs across Iowa, beginning with Big Creek Lake and then expanding to other study locations.

Goals

- To determine whether stocked Walleye fry or advanced fingerlings survive better to adulthood, to establish Walleye fisheries in reservoirs, and to identify any reservoir characteristics (such as water quality or biology) that make a location better for one size over the other
- To establish a tool for assessing whether fry stocking was successful, before additional stocking occurs
- To describe Walleye population effects of stocking under varying fish density and forage scenarios (focused on Big Creek Lake)

Results and Conclusions

- Reservoir characteristics (including water quality and the fish community present) do affect whether Walleye in general would likely be successfully established through stocking, and whether Walleye should be stocked as fry or advanced fingerlings.



- Reservoirs with high crappie densities, high Largemouth Bass densities, and high turbidity were less Walleye-friendly in general. Fry stocking was more successful in warmer summertime water temperatures and much less successful when Largemouth Bass densities were high.
- Nighttime electrofishing in the early fall can be used to assess fry stocking success. If the catch rate exceeds 0.5 Walleye juveniles/minute, there is a 95% chance of capturing that year-class of fish 2 years later in reasonable numbers.
- Based on Big Creek Lake's Walleye population, dynamics such as growth can change rapidly in response to changing density and forage conditions, requiring constant study and adjustment of management strategies such as length regulation. Age and growth information can be used to monitor Walleye populations and establish specific, reasonable adult Walleye densities for each reservoir.