

Assessing a Minimum Length Walleye Restriction (April 2021)



Ample water and aggressive fish stocking produced numerous “new” walleye fisheries across North Dakota in the past two decades. These new lakes are productive, and have provided fantastic fishing opportunities.

With an increase in walleye anglers, concerns by some regarding the potential for overharvest and requests for special regulations to curtail harvest are more common. On many new waters, a minimum length limit to allow little fish to grow before being harvested is the most often-requested regulation.

North Dakota Game and Fish Department biologists responsible for stocking, managing and developing these new waters are monitoring their progress since before the first walleye were stocked. They gather information on lake water quality, forage abundance, walleye growth, survival, stocking success, and in some instances angler use and preferences. This collection of information allows biologists to determine stocking rates and evaluate whether any special regulations would improve the walleye populations, either biologically through improved growth or survival, or perceptually by providing a size structure anglers find more desirable.

BIOLOGICAL

Biologically, a minimum length limit would benefit a walleye population that meets four specific criteria: 1) population exhibits low reproductive or stocking success, 2) fish exhibit good growth, 3) it's subject to high fishing mortality and 4) natural mortality is low. If all criteria aren't met, a minimum size limit would not improve the population. Alternately, if a minimum size limit is applied to a population with abundant small fish that are slow growing, protecting them from harvest would create a stockpiling effect that may result in a stunted population. Also, if natural mortality is high, protected fish would die of natural causes before reaching a desirable size.

We seldom see poor stocking success that would require protection of smaller fish on most North Dakota waters. Especially on newer lakes, we have established good year-classes through stocking. In most cases where we see a shortage of small fish, it's the result of other factors, such as predation or lack of forage. So, the first requirement for a successful minimum length limit is seldom met.

On traditional lakes and reservoirs across North Dakota, walleye growth tends to be good, satisfying the second requirement. On new lakes, above average growth is common. Most new waters are targeted for stocking because biologists have noted an abundance of fathead minnows. Newly stocked walleye survive and grow fast on this abundant forage, commonly reaching 14-15 inches after only two summers. During this developmental period, a minimum length limit is unnecessary for two reasons. First, when forage is abundant, fish are generally hard to catch and little harvest of small fish occurs. Second, fish grow so rapidly they quickly outgrow the small size range.

High fishing mortality is the most necessary criteria to meet for any harvest regulation. If anglers aren't having an impact on the population, there's no need to restrict harvest, and doing so will do nothing to improve the population.

Biologists use fish population information to monitor total mortality, which combines both fishing mortality and natural mortality. As long as total mortality is in a sustainable range, we can be certain that neither



fishing nor natural mortality are excessive. Natural mortality is usually low in most new walleye lakes where forage is abundant. Similarly, when forage is abundant and fish are hard to catch, fishing mortality can be low, too. When forage declines and a good bite occurs, anglers will harvest a substantial number of walleye and fishing mortality can be high for a period. In cases like this, high fishing mortality is necessary to reduce the population size and bring it into balance with the forage base.

Marvin Miller Lake in Logan County is a good example, where it took 10 years of aggressive stocking before the forage base declined. When that happened, fishing was outstanding for a time, to the point that anglers became concerned that harvest was too high. However, netting data from Marvin Miller at the time showed the forage was still low, and individual fish were skinny. When forage is low, the alternative to high fishing mortality would be high natural mortality, as fish begin to starve. We'd much rather see those walleye go home with anglers than die of starvation.

When we evaluate the biology of our new walleye fisheries, as outlined above, harvest of small fish isn't limiting the quality of fishing in any of the waters. We find that most cases do not meet the criteria for a special regulation, and that minimum length limits would not have much success at enhancing fishing in those lakes.

SOCIAL

Some anglers, including those familiar with the biology of these lakes, maintain that a minimum length limit should be implemented because it's their belief that small fish should be allowed to get bigger. This is purely a social viewpoint of fishing regulations, because implementing a length limit without biological support would not create any detectable change in what anglers catch. Although some anglers do harvest small fish, to implement a minimum length limit where it isn't needed, particularly where it wouldn't improve the population, is simply imposing some anglers' personal beliefs on other anglers. Moreover, doing so gives anglers the false impression that the regulation is in place because it's enhancing the population, when in fact it isn't.

CONCLUSION

The Department's philosophy is to implement regulations when/where they have a reasonable chance of improving the population for anglers, and to make those decisions based on the science and biology of the fishery. Statewide minimum length limits would certainly be inappropriate, considering the varying conditions on walleye fisheries across North Dakota. Minimum length limits are considered on a per-lake or regional basis, and implemented when evidence suggests a walleye population, and ultimately anglers, can benefit from having the regulation in place.