

Assessing a “One-Over” Walleye Length Restriction (April 2021)



Many anglers wonder if fish size restrictions would make fishing better on their favorite water. The most common suggestion is either a water-specific or statewide one-over regulation, allowing anglers to keep one walleye over a certain length in their daily limit.

Game and Fish Department fisheries biologists have made a concerted effort the past few years to review all possible length regulation restrictions, and routinely reassess when conditions change. From the extra effort to conduct these evaluations, biologists have not found any instances where data supports a length restriction to improve existing walleye populations.

And yet, some anglers still suggest that additional conservation measures are needed because too many large walleye are being harvested, particularly on Devils Lake and the Missouri River. Some of these anglers request that larger fish be protected to enhance the opportunity for themselves and others to catch large fish. Although not a biological reason for the well-being of the population, this social aspect is also considered when setting regulations.

BIOLOGICAL

From a biological standpoint, maximum length limits (one-over is a derivative of a maximum length limit) are likely to benefit fisheries where fish reproduction is limited by the number of brood fish, and angling mortality of large fish is high. Therefore, a one-over regulation might help in a lake where angling exploitation is reducing the number of spawning-age fish, and inhibiting natural reproduction.

In North Dakota, the Missouri River/ Lake Oahe is the only walleye population that relies entirely on natural reproduction, while at Devils Lake both natural reproduction and stocking contribute to the population. While other waters, including Lake Sakakawea, do experience natural reproduction, all are supplemented or maintained through stocking.

A typical walleye population can sustain total mortality rates up to 40-55 percent, according to scientific literature from across North America. Rates above 55 percent become problematic.

Total mortality rates on the Lake Oahe, Devils Lake and Lake Sakakawea have ranged from 31-36 percent in recent years. On the Missouri River in 2015, total mortality was higher at 51 percent, but still within the sustainable range. A large portion of the mortality since 2012 was due to natural causes from the lack of forage after the 2011 flood, and not from angler harvest.

Since mortality is not excessively high, it's also not surprising that reproduction has not been affected. Anglers have expressed concern over the harvest of large pre-spawn walleye from Devils Lake's tributary coulees every spring. The spring of 2009 stands out because flows were high and fishing was very good in the coulees that spring. That same year, Game and Fish biologists recorded the highest walleye reproduction ever documented on Devils Lake, without stocking any walleyes in the lake in 2009. This strongly indicates that natural reproduction is a significant contributor to the walleye population, even with the spring harvest.

Similarly, the Missouri River and Lake Oahe have not been stocked with walleye since 1981, despite traditionally good pre-spawn fishing every spring.

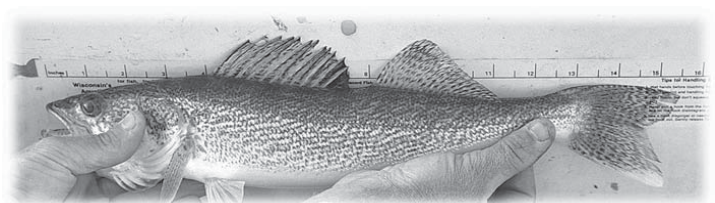
SOCIAL

Beyond biological considerations, some anglers feel a one-over length limit will extend the big fish resource, allowing anglers to catch big fish again later. Tagging studies on North Dakota walleye populations have shown that typically less than one of every five walleye released is caught again.

Biologists have evaluated the potential effectiveness of a possible one walleye over 20 inches regulation on various waters using creel survey data collected since 2009. The most recent 2018 creel survey on the Missouri River and Lake Oahe revealed that if a one-over 20 inch regulation had been in place, it would have required the release of just 14 of the 1,157 fish measured.

Lake Sakakawea currently has a walleye population with a much higher proportion of 20-inch-plus walleye than the Missouri River and Lake Oahe. From June 1 through August 15, 2018, creel clerks measured nearly 10,000 walleye harvested by anglers, and only 276 would have been released if a one-over 20 inch regulation had been in place.

Surveys commonly show that anglers tend to voluntarily release fish over 20 inches. For example, on Devils Lake from 2013-2019, the proportion of 20 inch and larger walleye in the population survey averaged 6.6 percent of the population, while the proportion of fish of the same size harvested by anglers over the same time period averaged only 3.4 percent.



CONCLUSION

Size limits to restrict the harvest of fish simply don't work when anglers aren't having a major impact on the population to begin with. Game and Fish is fortunate to have sufficient long-term information to help effectively manage the state's fisheries. At current fishing effort and exploitation rates, Game and Fish biologists are confident that a one-over regulation would serve no biological or social purpose.