

Stock walleye into Bone Lake?

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Background:

Walleye stocking is always a popular topic among lake groups. Almost all lakes in this area have been stocked with walleye at one time or another. Bone Lake was only stocked with walleye once back in the 1930s. Most of the fish stocking efforts on Bone Lake have been directed towards musky. Musky stocking was also initiated in the 1930s and Bone Lake has been managed as a musky lake since then. Walleye were never stocked back into Bone Lake after their initial stocking because our policy was to only stock one predator species in a lake. Bone Lake has a rich history of musky stocking and is one of the longest-stocked musky lakes in the state. The musky fishery on Bone Lake is a very popular fishery that attracts many anglers.

Although there is often a lot of hype with walleye stocking, our best walleye lakes are ones we don't stock at all. Naturally-reproducing (NR) walleye lakes are lakes that are sustained by natural reproduction and often have adult ($\geq 15"$) densities of 2-8 fish/acre. In contrast, stocking-dependent walleye lakes in this area usually have adult densities of 0.5-2 fish/acre, with few above that. Very few lakes have good walleye fisheries without having some level of natural reproduction. Oftentimes, the walleye lakes that are completely dependent upon stocking have low-density populations that result in more of a "background fishery", where anglers don't consistently catch walleye.

Stocking sources:

There are essentially two ways of getting walleye stocked into a lake. Either walleye are stocked by the Wisconsin DNR, or large fingerling walleye are

purchased by a lake group from a private fish farm and are stocked under a DNR-issued private stocking permit. The Wisconsin DNR stocks many waterbodies with walleye. Our walleye stocking efforts are primarily directed at lakes that had natural reproduction, and the ultimate goal of these stockings is to restore natural reproduction. The lower priority lakes we stock are stocking-dependent lakes where stocked fish have high survival and create popular fisheries. Walleye stocking is an expensive management action, so we want to make sure we are stocking walleye in the most appropriate waterbodies.

Stocking sizes:

We stock two different sizes of walleye: small fingerlings (1.5-2") and large fingerlings (6-8"). Small fingerlings are stocked in June and are not fed minnows. Large fingerlings are stocked in September or October and are finished on minnows once they are small fingerling size. Since large fingerlings are fed minnows they are much more expensive to raise. If a lake has decent stocking survival with small fingerlings they are the preferred route, because they are more cost effective. However, stocking survival with small fingerlings is usually very low and inconsistent in many lakes in Barron and Polk counties. Therefore, we mostly stock large fingerling walleye in my area. Our typical stocking rate for large fingerling walleye has been 10 fish/acre on an alternate year basis. We have tried rates as low as 5/acre and as high as 20/acre, but 10/acre seems to be the most cost-effective rate to produce a population.

Although stocking survival is better with large fingerlings it is still not great. Survival rates can vary substantially between lakes, but we often see around 80% mortality on large fingerlings from age 0 to age 1. Natural mortality is approximately 20% for each year thereafter. If you used these mortality estimates and figure a legal (15") walleye is age 4, only 10% of the large fingerling walleye stocked into the lake will survive to become legal size.

Will walleye naturally reproduce in Bone Lake?:

Walleye have long been present in Bone Lake. The walleye in Bone Lake likely originate from Big Round Lake and come down the Straight River and up through Fox Creek. Don't get me wrong, I realize walleye are rare in Bone Lake, but over the course of the last ~90 years where walleye have been in the that drainage, there has never been a natural walleye year class documented in Bone Lake. If walleye could naturally-reproduce in Bone Lake, we would have already seen it. Therefore, it's highly unlikely that we would see natural reproduction from walleye if stocked into Bone Lake. Lack of walleye natural reproduction is not something unique to Bone Lake, as there are no inland lakes in Polk County that currently have naturally-reproducing walleye populations.

Walleye are not a species that has consistent natural reproduction, even in some of the best walleye lakes. Lakes that have good walleye natural reproduction usually have some or all of the following characteristics: large windswept lakes, stained or turbid water, shorelines with suitable rocky spawning habitat, are flowages or riverine systems.

Can walleye be stocked into Bone Lake?:

At this point I am not looking to stock DNR-raised walleye into Bone Lake because it would likely result in a low-density, stocking-dependent walleye lake. Also, our hatchery system is currently at capacity for walleye production, we can't just add new walleye stocking quotas without dropping other stocking requests.

If the Bone Lake Management District wishes to pursue stocking walleye into Bone Lake, I would recommend they stock large fingerling walleye at 10 fish/acre on an alternate year basis. Also, the lake district should plan on funding this stocking practice well into the future. Stocking fish in a stocking-dependent lake is not a one-time deal if you expect to have a fishable population. Once you quit stocking the population will eventually disappear from natural mortality and angler harvest.

Cost Figures:

So let's put this in the context of Bone Lake. If you stock Bone Lake (1,781 acres) with large fingerling walleye at a rate of 10 fish/acre on an alternate year basis, you would need to stock 17,810 large fingerlings. These fish are ~\$2 each, so the cost would be 35,620 every other year. Based on what we have seen on other lakes, I would be willing to bet the adult population would be around 1 adult/acre. I feel confident in saying the population would be no more than 2 adults/ac from this stocking rate on Bone Lake. This would be considered a low density population.

The lakes in this area that have the highest survival on stocked large fingerlings walleye are the productive "green" lakes. Walleye do better in these lakes because they have good forage bases (so they can easily find their next meal) and walleye are a riverine species that does better in turbid water.

I hope this information is useful to the members of the Bone Lake Management District. If anyone has any questions for me they are welcome to contact me.

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