

Quality Bluegill Management

By Joe Rush, Lake Manager



Bluegill are a well sought-after gamefish in Illinois. In fact, the Illinois state fish is the bluegill. Historically, anglers have believed that bluegill needed to be harvested in high numbers to ensure this species doesn't overpopulate and 'stunt'. However, recent research is suggesting that this may not be the case.

First of all, we need to understand bluegill biology and reproductive behavior. This could be a dissertation of information if we wanted, but to keep it



simple, when big male bluegill are present, growth rates are faster and average bluegill sizes in the fishery are larger. Absence of big males = slower growth and smaller average size of reproductive bluegill. The reason this happens in bluegill is that bluegill are social creatures, nesting in colonies. When big males are not present, males will reach sexual maturity EARLIER (at a smaller size) and therefore growth is reduced because more energy is put into reproduction and LESS into

growth to get them to that bigger size.

Pete Jacobson, A biologist in Minnesota, observed that bluegill at age-7 were 7" to 8" in lakes with a 10 fish harvest limit compared to 6" to 6 1/2" in 30 fish limit lakes. A one to one and a half inch difference doesn't sound like much, but the fish in the 10 limit lakes were nearly double the weight as those in the 30 limit lakes.

Andrew Rypel (research biologist with the Wisconsin Department of Natural Resources) was published in the North American Journal of Fisheries Management for his research on the "Effects of a Reduced Daily Bag Limit on Bluegill Size Structure in Wisconsin Lakes". This research studied the effects of reducing the aggregate bag limit of bluegill from 25 to 10 on seven different lakes in Wisconsin. This studied concluded that across all lakes, mean total length of sampled bluegills was significantly greater in

Illinois DNR biologist, Mike Mounce, has been working on bluegill research on Walnut Point Lake in Central Illinois and has access to fisheries research data all the way back to 1987. Over the years they have implemented three different strategies for quality bluegill management. From 1987- 1998, they had no regulations. From 1999-2006 they had a minimum length limit on bluegills. Then from 2007 to present they have been working on a maximum length limit regulation. This regulation allows for the harvest of up to 25 bluegill daily, but only 5 of those fish can be over 8" in length. Any other 8" plus fish must be released back.

Since the start of the maximum daily limits, the numbers of bluegill over 8" in the population is much higher than the other two management options utilized at Walnut Point Lake, and they have been able to see these higher catch rates maintained for eleven consecutive years. Here are some bullet points from the information on Walnut Point Lake from Biologist Mike Mounce:

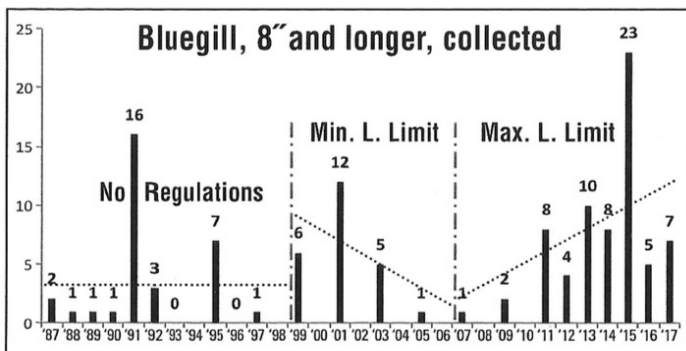
Bluegill Research Results:

- Lakes closed to fishing (angling) support higher quality bluegill populations
- Once opened to unregulated angling, the average size of bluegill quickly declines due to over harvest of the larger bluegill.
- Largest males get the best nest location in nesting colonies (the center nest). Females lay the vast majority of eggs in these central nests guarded by larger males, while the surrounding nests of smaller males get very few or no eggs.
- Just the simple presence of large male bluegill can result in the delay of sexual maturity of smaller male bluegill due to this competition for prime nests and eggs. Delayed sexual maturity results in faster growth rates for all bluegill.
- Time and energy invested in spawning slows growth significantly in most fishes.
- Anglers want and will increase trip numbers for quality bluegill fisheries.
- Effective management for quality bluegill angling should focus on increasing the age of maturation and abundance of large male bluegill.

Along with these bullet points, here are some strategies for improving the fishery. Recent studies show that harvesting the largest bluegill caught can actually hurt the quality of the fishery. Releasing these big bluegills can delay sexual maturity of smaller bluegills, allowing them to have better growth. By taking pictures of these trophies and releasing them, you can still enjoy the fishery while significantly improving the angling quality for the future.



However, angler cooperation is the KEY and these management practices can only work when all anglers work on this common goal. With bluegill reproductive size being closely associated with the largest males in the colonies, it is important to have big males in a fishery that desires to keep quality bluegill fishing.



treatment lakes than in control lakes after the regulation was implemented.