

**Lake Arrowhead: Blair, NE.
Fish Population Survey
June 11, 2020**

Fish Survey

Fish populations were sampled using pulsed DC electrofishing. Overall we collected 6 species of fish including 60 largemouth bass, 46 bluegills, 3 yellow bass, 2 black crappie, 4 green sunfish and 1 channel catfish. Bass ranged from 3.75 to 16.5 inches in length while bluegills ranged from 2.75 to 8.75 inches in length. The yellow bass were between 4.5 and 5.0 inches in length. The black crappie were 5.5 and 12.5 inches in length. The green sunfish were between 2.5 and 7.5 inches in length and the channel catfish was 24.25 inches in length. Figure 1 and 2 show length frequency distributions for bass and bluegill respectively.

Despite the presence of yellow bass there were still some quality sized bluegill. Often, yellow bass can have a negative impact on growth in bluegill populations since both species rely heavily on zooplankton and ultimately compete for food resources. The largemouth bass population appears to be high density with relatively small to medium sized fish dominating the population. However, they were very fat and healthy. High bass numbers may actually benefit bluegill growth since bass help control both bluegill and yellow bass populations through predation.

Fishery Recommendations

Gamefish populations sampled appear to be in good condition and the fishery is in good shape. The presence of yellow bass is the only "negative thing" for which there is no cure short of killing off the entire lake. Our suggestion is to stock and protect predators to help control the yellow bass population (more specifically the reproduction of them) and convert as many pounds of yellow bass into pounds of desirable fish as possible. Predators suggested for stocking still include wipers and walleye. Tiger musky have been stocked to provide some control on yellow bass but they also may reduce largemouth bass numbers eventually which could result in a larger average size on bass.

Wipers are open water predators which are a good match for open water prey and are a hybrid that won't reproduce and take over the lake. Walleye are another desirable species that will also feed on yellow bass and provide quality angling but are unlikely to reproduce. You can stock walleye and wipers in any combination up to 10 per acre per year. Crappie can also be stocked occasionally to supplement their populations, but keep in mind crappie populations tend to naturally cycle. When determining stocking budgets, remember that it's usually better to stock small quantities each year rather than large quantities once every few years. Since food availability in lakes and survival of stocked fish can vary from year to year, annual stocking can help ensure multiple year classes become established. This is especially true for species unlikely to reproduce like wipers and walleye.

If larger bass sizes are desired, harvesting up to 15 or 20 bass per acre per year from the population could be used to achieve that goal. However, you may shift the balance of bluegills toward a higher population with smaller average sizes. On the other hand, if the panfish population increases, this could have a positive effect on predator populations such as largemouth bass, wipers, tiger musky, and walleye with their average sizes going up. This is just something to consider and be aware of before implementing a stocking or harvest plan.

Bluegills and crappie can be harvested as desired since their populations are controlled more by predators than angler harvest. Walleye, tiger musky, and wiper harvest should be limited to allow these species to help provide control of the yellow bass population.

Water Quality

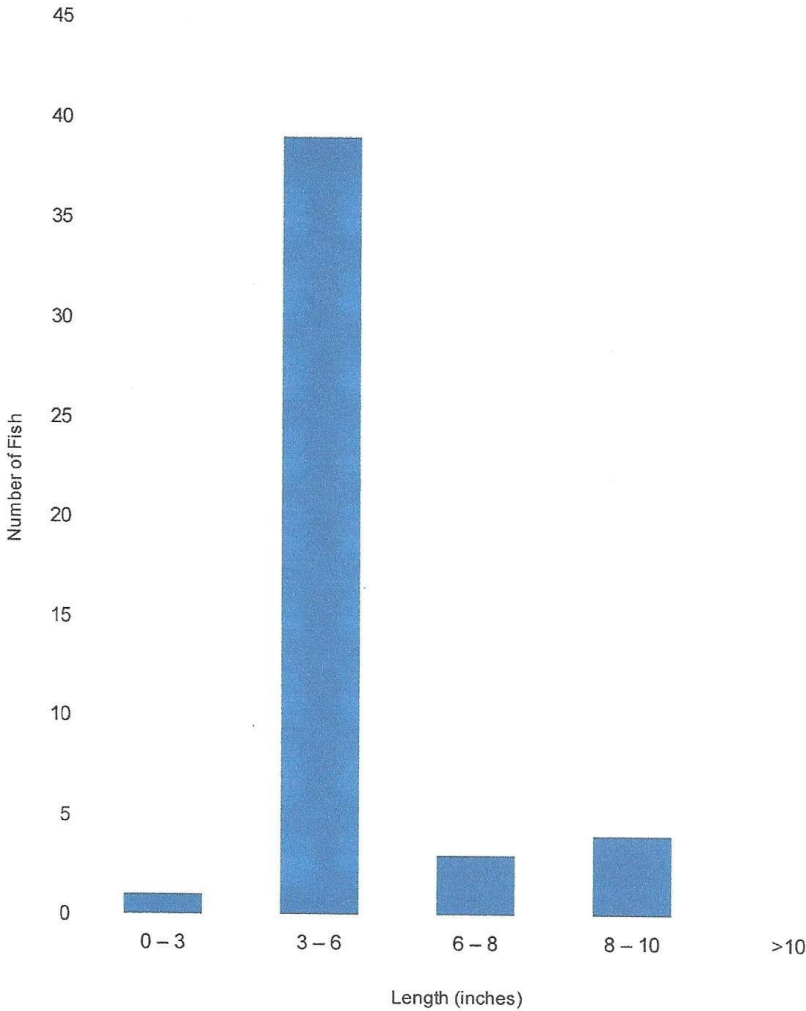
Overall water quality was in great shape at the time of the survey with clarity of 6.5 feet and oxygen levels above 4 mg/l up to 21 feet of depth. Given the right conditions, algae blooms can occur at any time during the growing season. Housing and human activities invariably introduce nutrients and pollution into lake systems, especially if phosphorus containing fertilizers are used in the watershed. No testing was done for total phosphorus, but if algae blooms occur they are often a sign of high phosphorus either from external sources or internal cycling. Algae blooms can be treated with algaecides or in the event of blue-green algae blooms, they can also be tested for toxins. We have the capacity to do both if the need arises.

Final Comments

Lake Arrowhead's fishery and water quality were in good condition when the lake was surveyed on June 11, 2020. Various types of habitat were documented including aquatic vegetation, rocks, trees, artificial habitat structures, and docks. Habitat structures such as cedar trees weighted with blocks or other artificial habitat structures placed in 6 to 12 feet of water in a few areas throughout the lake would be beneficial for providing additional habitat and quality fishing. Stocking predators (wipers and walleye) up to 10 per acre per year each and protecting those predators is probably the best way to help control reproduction of yellow bass. For additional consultation please contact Nebraska Lake Management; 402-784-6005 or email us at nelakes@rocketmail.com.

Length Frequency for Bluegills

Lake Arrowhead; June 11, 2020



Length Frequency for Largemouth Bass

Lake Arrowhead; June 11, 2020

