



Summary of Fishery Surveys Long Lake, Taylor County, 2015

WDNR's Fisheries Management Team from Park Falls completed angling and electrofishing surveys in spring 2015 to assess the abundance and size structure of largemouth bass and panfish populations in Long Lake. Quality, preferred, and memorable sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society. The designation of "keeper size" is based on known angler behavior.

Survey Effort

Beginning at 12:37 p.m. on June 4th, 2015, two experienced anglers fished from a canoe on Long Lake for 3.5 hours (7.0 hours of angling effort). Of that total, 4.75 angler-hours focused primarily on largemouth bass and 2.25 angler hours focused on panfish. We used spinning tackle with rubber worms for largemouth bass and a bobber with hooks baited with worms for panfish. The weather was partly cloudy and air temperatures were in the mid 60's. All fish landed were measured and released.

Two attempts in spring 2013 to launch our large and small electrofishing boats from their trailers at the roadside access were unsuccessful due to the steep-sloping road berm and lake bank. On June 16, 2015 we launched our small electrofishing boat at a private boat ramp with landowner permission. That night with water temperature at 70.5°F we sampled all fish species in a complete shoreline electrofishing circuit (0.95 miles) in 0.73 hours. Dark-stained water and dense patches of floating vegetation reduced visibility and fish capture efficiency.

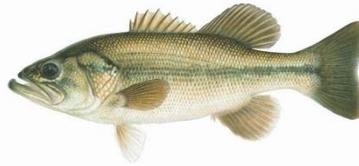
Habitat Characteristics

Long Lake is a 20-acre seepage lake located about 3.5 miles north of Rib Lake, WI. The dark-stained water (Secchi depth = 4 feet) has a maximum depth of 21 feet. The littoral substrate is 75% muck, 15% gravel, 5% sand, and 5% rock, supporting a dense band of watershield and lily pads at shallow depths around almost the entire shoreline. We observed very little submerged woody structure and only a few overhanging trees to provide the cover and substrate that is important for fish and invertebrate production. The shoreland vegetation was diverse with areas ranging from upland forest to lowland bogs. Development consists of a handful of cabins around the northern half of the lake. A makeshift public access point is located at the south end of the lake on the right-of-way of Rustic Road #1. The roadside access is marginally suitable to carry in a canoe or a very small boat. The roadside site has no boat ramp and no designated parking space for vehicles.

Summary of Results

We captured four species in our 2015 surveys. Angling captured more fish than electrofishing did. In addition to largemouth bass and bluegills, we captured a few pumpkinseeds and three walleyes 8.7–10.2 inches long that probably originated from unauthorized stocking. During the angling survey one of our lines was ‘bitten off,’ suggesting that northern pike are part of the fish community. Anglers on the lake also reported catching black crappies and yellow perch.

Largemouth Bass

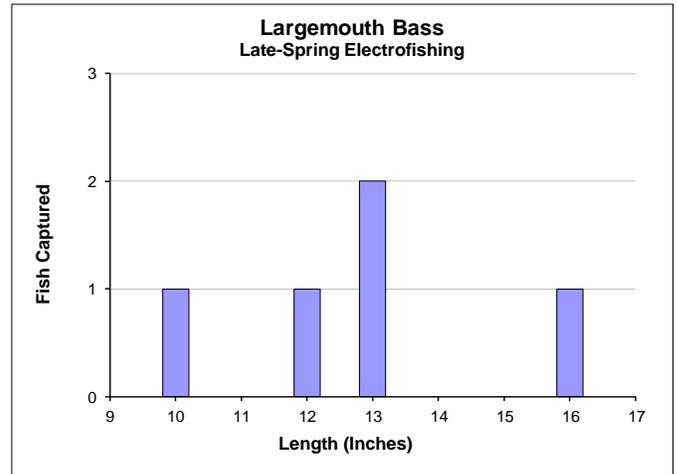
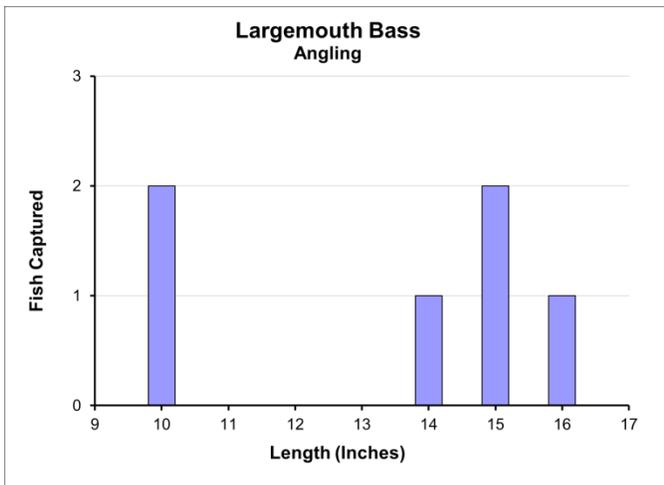


Angling

Captured 1.26 per hour $\geq 8''$	
Quality Size $\geq 12''$ □	67%
Legal Size $\geq 14''$	67%
Preferred Size $\geq 15''$	50%

Late Spring Electrofishing

Captured 5.3 per mile or 6.8 per hour $\geq 8''$	
Quality Size $\geq 12''$	80%
Legal Size $\geq 14''$	20%
Preferred Size $\geq 15''$	20%



Largemouth bass were caught in weedy cover very close to shore in both surveys. The largemouth bass population appeared to be healthy and capable of sustaining a fishery by natural reproduction. Both samples included a wide range of sizes. Our angling capture rate represented moderate population abundance, whereas our low electrofishing capture rate reflected the difficult sampling conditions (low water clarity, low conductivity, dense floating vegetation) that led to low capture efficiency. We observed many fish that we did not capture by electrofishing. Though we did not weigh fish to evaluate their condition factor, individual bass also appeared healthy, based on their body proportions.

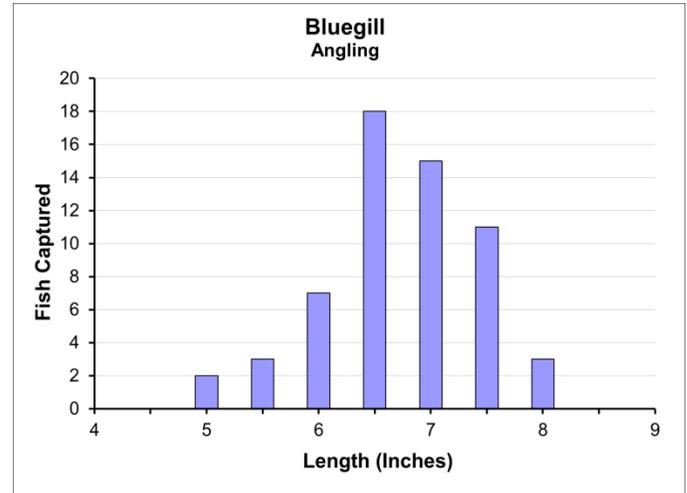
Largemouth bass are the main predator in Long Lake, and they play an important role in controlling panfish numbers in a lake of this size.

Bluegill



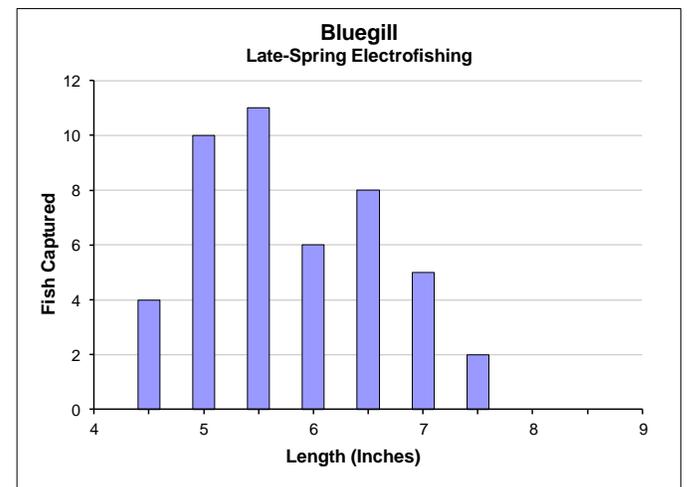
Angling

Captured 26.7 Bluegills per angler hour	
Quality Size \geq 6"	92%
Keeper Size \geq 7"	49%
Preferred Size \geq 8"	5%



Late Spring Electrofishing

Captured 48 per mile or 63 per hour \geq 3"	
Quality Size \geq 6"	46%
Keeper Size \geq 7"	15%
Preferred Size \geq 8"	0%



Bluegills were actively spawning and very vulnerable to capture during our angling survey. As we fished for them, bluegills stayed close to their nest colonies and aggressively took our bait as quickly as we could present it. Based on our high angling capture rates, bluegill population abundance appeared to be moderately high. Because we were fishing while bluegills were spawning, our angling effort undoubtedly targeted mature fish, making any assumptions about size structure biased toward the larger fish. Our electrofishing survey included a higher proportion of small bluegills. Because electrofishing capture efficiency was so low, our capture rate in Long Lake does not reflect the low population abundance that we normally associate with such a low rate. The later timing of our electrofishing survey also influenced our interpretation of capture rates. Bluegills are most vulnerable to capture by electrofishing while they are actively engaged in nest building, spawning, and nest guarding. We believe bluegill spawning activity peaked during our angling survey about 12 days prior to the electrofishing survey.

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