



Illinois Department of Natural Resources

One Natural Resources Way · Springfield, Illinois 62702-1271
<http://dnr.state.il.us>

Rod R. Blagojevich, Governor

Joel Brunsvold, Director

February 9, 2005

Lost Nation Lake Survey Report for 2004

Lost Nation Lake was surveyed on September 20, 2004 by Dan Sallee and Rick O'Neil. The sampling method was AC electro-fishing using a 3000W, 230V, 180 cycle generator pulling about 8 amps during the daytime survey. A total of 2 electro-fishing runs of 30 minutes each were conducted with a total sampling time of 60 minutes. Sampling efficiency was good with 1390 total fish collected representing 15 species of fish and one hybrid (bluegill/green sunfish). Sampling efficiency excluding gizzard shad was just under 6 fish/minute, which compares very favorably with the 2003 effort which yielded 3.8 fish/minute. As in previous surveys, gizzard shad were so abundant that a very small subsample (5 minutes) of shad were collected.

The 73 largemouth bass collected ranged in size from 6.5 inches to 18 inches, with 32% of the largemouth bass greater than 14" and 15 % greater than the lake's 16" limit. The proportional stock density indicates an excellent bass fishery on the lake with a score of 65, and a relative stock density for 16"+ fish of 23.9. As would be expected for a lake with a forage base dominated by shad, body conditions of adult fish were excellent, while body conditions of smaller fish unable to fully utilize shad were average. As noted in past years, young of the year bass were again less abundant than I would like to have seen, so your stocking effort in early October may have been very beneficial in boosting numbers of smaller bass. The young/adult ratio for 2004 was only .43 which indicates inadequate recruitment to sustain a strong bass population (if significant harvest were occurring). There are no indications that significant harvest is occurring, and in fact it should not occur with a 16" length limit, but it may be a good idea to continue with a supplemental stocking program if you choose to do so.

Only 2 smallmouth bass were collected during the survey and these fish were 12" and 17.5" long. Both fish had average to below average body condition. Our sampling method is not very efficient in collecting smallmouth bass under most conditions, but it is clear that continued stocking will be needed if you wish to maintain a smallmouth bass fishery, as we observed no evidence of natural reproduction.

A total of 12 walleye, or 0.2 walleye per minute were collected during the survey, which is a much higher catch per effort than in 2003, which was .13 per minute. These fish ranged from 14.5 inches to 25 inches, and had good body condition. It appears that your annual stocking program of about 1500 walleye is working very well, and I would suggest that you continue this effort.

A total of 13 black crappie and 2 white crappie were collected during the survey. At least 2 year classes of crappie were collected of harvestable size were present. Spring trap-netting is a much more efficient method of sampling these species, but it appears that you have a good harvestable population of crappie.

The only Esocidae collected was a single northern pike and this fish was in relatively poor condition. At the time of the survey I was also asked about tiger muskie or true muskie stocking vs. northern pike. In looking at the lake's past stocking records it appears that numerous stockings of northern pike have not produced a significant fishery. Tiger muskie are very attractive fish, very aggressive, and grow quickly. Unfortunately, our studies indicate that the hybrids tend to disappear after reaching moderate sizes. True muskie, on the other hand have established excellent fisheries on lakes similar to Lost Lake. My recommendation would be for you to stock between $\frac{1}{2}$ of a muskie to 1 muskie per acre for several years if your desire is to establish a trophy fishery. With Lost Lake's shad forage base, I would expect muskies to excel in the lake. Loss over the spillway can be a problem, but we have some fine muskie fisheries in lakes with spillway escapement.

Other fish species collected and (total number collected) in the 2004 survey included carp (17), channel catfish (4), golden shiner (2), green sunfish (64), silver redhorse (1), quill back (2), and white sucker (4). All of these species sampled appear to be within the norms of past sampling. Al has indicated in the past that there is evidence of catfish reproduction. Although you have stocked channel catfish in the past, I would recommend halting any channel catfish stocking effort for a few years and then assessing the strength of this natural reproduction.

It appears that your sport fishing regulations are maintaining a very good fishery for largemouth bass, bluegill, crappie and probably channel catfish. Smallmouth bass are also present at quality sizes, but I don't have a feeling for density. Unfortunately, we didn't collect a decent esocidae sample, but we may have sampled the wrong areas of the lake to assess muskie/northern/tiger muskie populations. If you wish to continue stocking in 2005, I would recommend muskie at 0.5 to 1 acre, and walleye at a rate of 10 to 20/acre. If you have additional funds available, supplemental stockings of largemouth and/or smallmouth bass would also be appropriate.

Please feel free to call me if you have any questions regarding this report.

Sincerely,

O~

Dan Sallee
Region 1 Fisheries Biologist
2317 E. Lincolnway, Suite A
Sterling, IL 61081