

LeBoeuf Lake

Erie County

Spring 2024 Trap Net and Night Boat Electrofishing Surveys



Fisheries Biologist Aide Joel Dean with a trophy-sized Black Crappie captured at LeBoeuf Lake.

Leboeuf Lake is a 72-acre open-system lake (no dam), located a few miles northeast of Waterford, PA in Erie County. The lake's inlet is supplied by Trout Run and its outlet forms LeBeouf Creek, a tributary to French Creek. The lake is owned and maintained by the Waterford Township Borough and boating is restricted to slow, no wake speed. The Commission manages the reservoir's warmwater fishery under Commonwealth Inland Waters regulations and stocks it annually with Channel Catfish and biannually with Muskellunge yearlings.

Biologists from Fisheries Management Area 1 & 2 offices set and retrieved Pennsylvania-style trap nets in April/May and conducted night-time boat electrofishing (NTBEF) in May. The purpose of these surveys was to evaluate the status of the lake's Muskellunge and panfish and black bass, populations, respectively. Specifically, we wanted to assess the status of the Muskellunge stocking program to determine if population levels were meeting respective minimum management plan abundance benchmarks. Relative abundance, or catch rate, of fish collected were expressed as catch-per-unit of effort (CPUE); or number of targeted-fish collected per unit of time gear was deployed.

Muskellunge and Panfish Trap Net Assessment

During the week of April 29th we completed 12 overnight sets of Pennsylvania style trap nets totaling 280.25 hours of effort.

Muskellunge

No Muskellunge were captured during our 2024 survey. Catch rates for Muskellunge are typically low and catch rates at LeBoeuf Lake have been low historically (Table 1). LeBoeuf Lake is an open system in which fish may come and go as they please. Stocking of Muskellunge into LeBoeuf Lake will be reevaluated during our upcoming meetings of the state-wide Muskellunge Work Group as updates are made to the PFBC Muskellunge Management Plan. Currently, biannual stockings of yearling Muskellunge are not providing a quality fishery in LeBoeuf Lake.

Table 1. Year, number, catch per unit effort (CPUE, fish/ h) and length of Muskellunge captured during four spring trap net surveys between 2000 and 2024 at LeBoeuf Lake.

Year	Number	CPUE	Length (in)
2000	1	0.005	12
2009	3	0.014	33 - 43
2016	4	0.014	30 - 46
2024	0	0.000	-



Panfish

Our nets captured 1,626 individuals representing 13 different species during our spring 2024 survey with comprising 95% of the total trap net catch (Table 2). The predominate panfish species captured were Black Crappie, followed by White Crappie, Bluegill, and Yellow Perch. Black Crappies were the most abundant fish captured in our nets. The majority of the Black Crappies, about 92%, were 6-9 inches; however, some large individuals were collected up to 17 inches (pictured above). White Crappies were less common than Black Crappies in our nets; accounting for about 35% of

our total catch. White Crappies were found up to 14 inches with the majority, about 92%, between 6 and 9 inches. Bluegills were the third most abundant panfish captured in our nets with most (92%) falling between 5 and 8 inches. Yellow Perch are present and can be found up to 8 inches. Brown Bullhead populations are healthy and should continue to provide anglers with a sustainable recreational fishery (Table 2).

Table 2. Species, number, and length of fish captured during 2024 trap net surveys on LeBoeuf Lake.

Species	Number	Length (in)
Black Crappie	907	3 - 17
White Crappie	565	3 - 14
Bluegill	51	4 - 8
Silver Redhorse	34	Not measured
Brown Bullhead	22	11 - 16
White Perch	18	6 - 13
Yellow Perch	14	3 - 8
Golden Shiner	5	Not measured
Quillback	4	Not measured
Walleye	3	22 - 24
Northern Pike	1	35
Bowfin	1	22
Yellow Bullhead	1	7

Largemouth Bass Night-Time Boat Electrofishing Assessment:

Fisheries Management staff from Area 1 returned to LeBoeuf Lake on the night of May 20th to evaluate the status of the Largemouth Bass population via night-time boat electrofishing (NTBEF). Six runs totaling 2.0 hours of effort were conducted along the shoreline. Both Largemouth Bass and Smallmouth Bass were captured, but Largemouth Bass significantly out-numbered Smallmouth Bass. A total catch of 100 Largemouth Bass were netted and ranged in length from 3 to 19 inches for a catch rate of 50 fish per hour (Figures 1 & 2). Only three Smallmouth Bass were captured ranging from 6 to 9 inches in length.

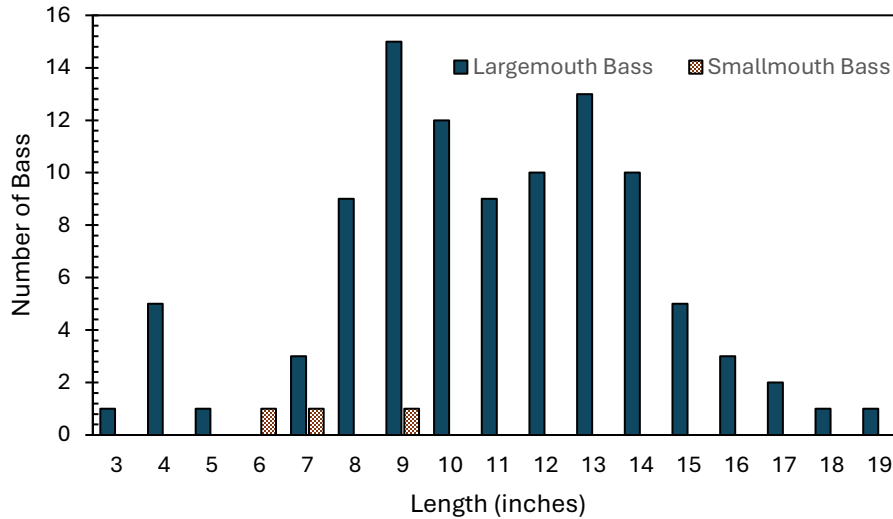


Figure 1. Largemouth Bass and Smallmouth Bass length frequency distribution from LeBoeuf Lake; spring 2024.

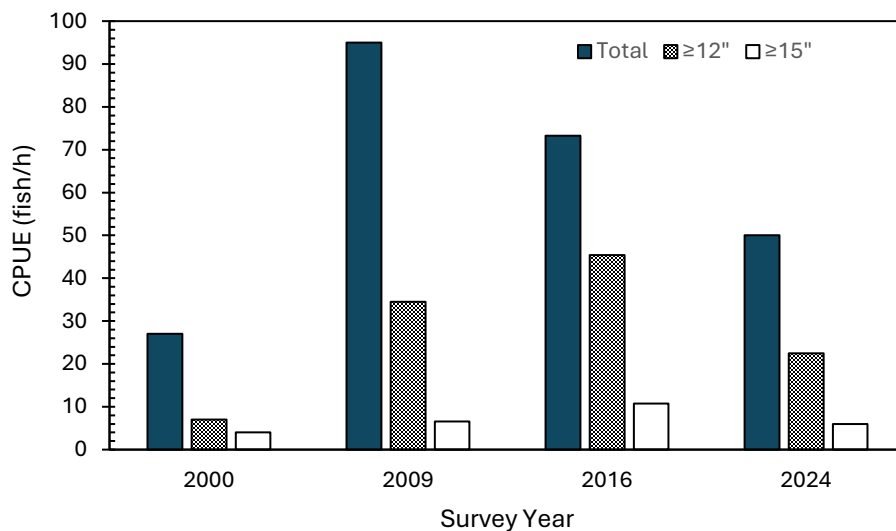


Figure 2. Largemouth Bass night-time boat electrofishing catch per unit effort (fish/h) in LeBoeuf Lake.

Round Goby

Round Goby *Neogobius melanostomus* is considered an aquatic invasive species (AIS) and was first documented in Leboeuf Lake by the Department of Environmental Protection (DEP) in June 2014. Since then, reproducing populations of Round Gobies have been documented in Leboeuf Creek and several individuals have been collected in French Creek. Round Gobies can be detrimental to aquatic ecosystems and are known to disrupt food chains by outcompeting native fishes (primarily bottom dwellers) for food resources.

Round Gobies are similar in appearance to freshwater sculpins but have some distinguishing characteristics making them unique. Round gobies have large heads with frog-like raised eyes,

mottled olive/brown body, fused pelvic fins, and a black spot on the rear of the first dorsal fin (Figure 3).

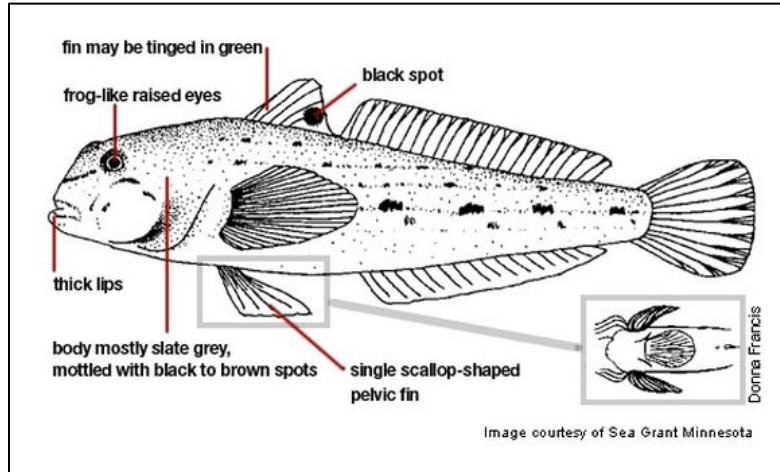


Figure 3. Round Goby identification diagram highlighting distinguishing characteristics.

Unfortunately, once Round Gobies begin to reproduce and populate a waterway, it is nearly impossible to eradicate them. It's likely that Gobies were spread by infected boats and/or bait buckets, therefore anglers and boaters are encouraged to take every precaution to prevent additional introductions by not transporting gobies from this particular lake or any other AIS species to other Pennsylvania inland waterways. Thank you for doing your part.

White Perch

White Perch is another AIS present in LeBoeuf Lake. Currently, they are at a low density, but have shown the ability to increase in abundance rapidly in other Pennsylvania waters into which they have been introduced. Their future effects on other fish populations in LeBoeuf Lake cannot be predicted. Anglers are encouraged to harvest White Perch for consumption, as they make good table fare.

Conclusion

In conclusion, LeBoeuf Lake supports sizable panfish and Largemouth Bass populations which will provide anglers with good fishing opportunities now and into the future. Other species such as Muskellunge, Northern Pike, White Perch, and Brown Bullhead can be found in lower numbers and help contribute to a locally popular fishery in LeBeouf Lake.

Good Luck!