



Summary of Fishery Surveys Esadore Lake, Taylor County, 2008

WDNR's Fisheries Management Team from Park Falls completed an electrofishing survey in spring 2008 to assess the abundance and size structure of largemouth bass and bluegill populations in Esadore Lake. This survey also yielded some useful information on black crappies. 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. "Keeper size" is based on known angler behavior.

Survey Effort

At 59-60°F, water temperature was within the prescribed range for this sampling protocol (55-70°F), but our electrofishing survey on May 20, 2008 probably occurred before the peak spawning activities of largemouth bass and bluegill. We sampled the entire shoreline (1.95 miles) in 1.00 hour for gamefish and panfish, including 0.50 mile sub-sampled for all species in 0.30 hour.

Habitat Characteristics

Esadore Lake is a 48-acre drainage lake located about 10 miles northwest of Medford, WI. The average depth is 15 feet, and maximum depth is 36 feet. The water is moderately clear with a medium-brown color (Secchi depth = 6 feet). The substrate is 45% sand, 40% gravel, and 15% muck, supporting a moderate density of submergent and emergent vegetation. Esadore Lake is connected to Mud Lake to the east (inlet) and Clear Lake to the west (outlet) by channels that are navigable in a small boat. A dam on Clear Lake discharges to Washington Creek and maintains the water level of the three lakes, collectively known as Washington Flowage. The shoreline vegetation is 80% upland hardwood and 20% upland conifer. Taylor County maintains a boat landing on the southeast shore.

Summary of Results

We captured seven fish species in our electrofishing survey. Largemouth bass and bluegill were the principal predator and prey. Yellow perch and pumpkinseed were represented in lower abundance, but all perch captured were less than 6 inches long. Two northern pike < 20 inches suggest that pike in low abundance might add angling diversity in this bass-bluegill fishery. Local organizations and DNR stocked large or small walleye fingerlings in five years from 1997 to 2005, but we did not capture any walleyes by electrofishing directed primarily toward bass and bluegills. The Rib Lake Area Fish and

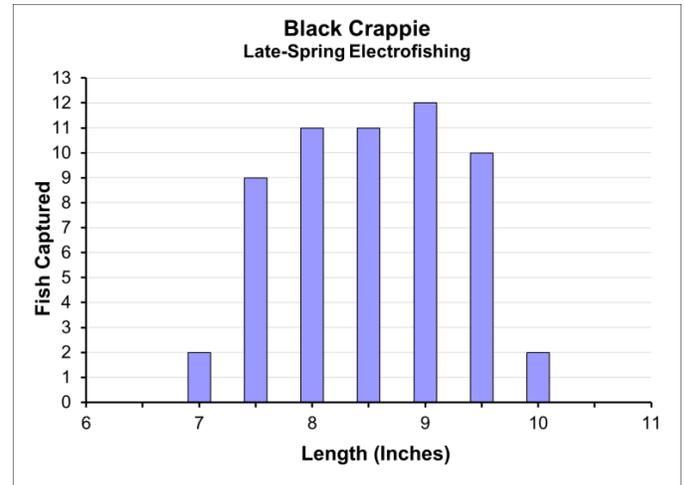
Game Association, with financial and volunteer support from neighboring lake associations and sportsmen’s clubs, annually raises and stocks large walleye fingerlings to help control panfish abundance and offer bonus angling opportunity in Esadore Lake and 13 surrounding lakes.

Black Crappie



Late-Spring Electrofishing

Captured 29 per mile or 57 per hour $\geq 5"$	
Quality Size $\geq 8"$	81%
Preferred Size $\geq 10"$	4%
Memorable Size $\geq 12"$	0%



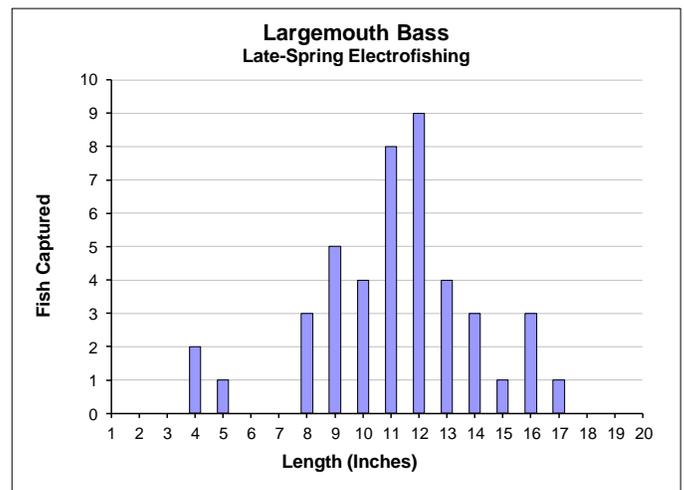
We did not use our traditional fall fyke netting survey to assess black crappie population status, but with water temperatures within the range of peak spawning activity, our late spring electrofishing survey was effective at gathering a large sample of black crappies. This method may be biased toward the larger, mature fish that moved into shallow water to spawn, so we might not be representing the entire population. Nonetheless, our relatively high catch rate indicated moderately high crappie abundance. Our sample included a high proportion of quality-size fish ($\geq 8"$), but only a few grew to preferred size. Food competition, selective angler harvest of the largest crappies, and natural mortality may be limiting the share of crappies 10 inches and longer. Continued stocking of large walleye fingerlings should help increase predation on small crappies, reducing competition and promoting satisfactory growth.

Largemouth Bass



Late Spring Electrofishing

Captured 21 per mile or 41 per hour $\geq 8"$	
Quality Size $\geq 12"$	51%
Legal Size $\geq 14"$	20%
Preferred Size $\geq 15"$	12%



Largemouth bass captured by late spring electrofishing indicated a population with moderate abundance and fair size structure. We did not observe any largemouth bass on nests as the water was still too cold

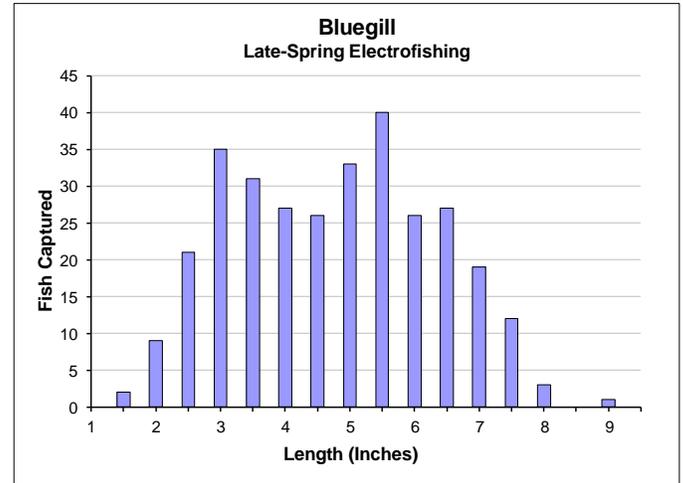
to trigger bass spawning activity. We saw, but did not capture, additional bass in deep water that were invulnerable to our gear. At moderate density, growth and survival rates appear to be satisfactory, allowing 20% of the population to reach harvestable lengths.

Bluegill



Late Spring Electrofishing

Captured 144 per mile or 280 per hour $\geq 3"$	
Quality Size $\geq 6"$	31%
Keeper Size $\geq 7"$	13%
Preferred Size $\geq 8"$	1%



Our capture rates and the length distribution of bluegills captured indicated an overabundant population with few fish reaching preferred size. Predators appear to be ineffective in controlling the abundance of small bluegills. Annual walleye stocking since this survey may help to increase predation on the small bluegills and reduce their abundance to levels where intense competition no longer slows their growth.

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