



## **Summary of Fishery Surveys Le Tourneau Lake, Price County, 2014–2015**

WDNR's Fisheries Management Team from Park Falls completed fyke netting and electrofishing surveys in 2014 and 2015 to assess the status of important fish populations in 124-acre Le Tourneau Lake, located about 10½ miles west of Fifield, WI. Fyke netting in October brought forth useful information on black crappies. Fyke nets deployed again shortly after the spring thaw targeted northern pike, walleye, and yellow perch. A late-spring electrofishing survey documented the abundance and size structure of largemouth bass and bluegill populations. 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**

On October 14–16, 2014 with water temperatures around 51°F, we set four fyke nets for two nights (8 net-nights) to intercept fall movements of black crappies. On April 9–15, 2015 we set four fyke nets at locations chosen to intercept early spring spawning species and fished them at five locations for six nights (24 net-nights) when water temperature ranged from 40 to 48°F. Fall and spring nets were fished two nights and tended on alternate days. Comparing measured water temperature with the optimal spawning temperature range of the targeted species, our spring fyke netting was well timed to represent pike, perch, and walleye population status. To save time we used a subsampled volume to estimate the high panfish numbers captured in the final lift of one spring net; all other fish were measured or counted individually. With water temperature at 66°F our May 22<sup>nd</sup> electrofishing survey should have coincided with spawning activities of largemouth bass and bluegills. We sampled the entire 2.03 miles of shoreline in 1.02 hour, including 0.50 mile sub-sampled for all species in 0.25 hour.

### **Habitat Characteristics**

A first-order tributary named Le Tourneau Creek drains an 800-acre forested watershed, enters Le Tourneau Lake on the southwest shore, discharges from the east shore to nearby Le Claire Lake (27 acres), and then to the North Fork Flambeau River about 1½ miles farther downstream. There are two culvert road crossings, but no permanent barriers to two-way fish movement among these waters. Le Tourneau Lake has maximum depth 16 feet, average depth 11 feet, and 5% of its surface area less than 3 feet deep. Upland hardwoods and conifers cover 80% of the shoreline with leatherleaf bog and hardwood swamp near the inlet and tag alder swamp near the outlet comprising the remainder. Lakebed materials near shore were 55% sand, 20% gravel, 10% rock, and 15% muck. Aquatic plants grow at moderate stand density around most of the lake perimeter. Six fish species were stocked into Le Tourneau Lake in

1939–1946, but no stocking was authorized and recorded since then. Six fish cribs with traditional log cabin design were installed along the north shore in 1994 and 1995. Water quality information on Le Tourneau Lake is scarce and old. On WDNR’s lakes web page trophic status is listed as “eutrophic,” meaning that high concentrations of nutrients result in high rates of biomass production. Analysis of water samples collected in November 1967 and published in WDNR’s 1983 *Surface Water Resources of Price County* reveal that Le Tourneau Lake’s pH was near neutral at 6.8, Secchi depth was 4 feet, and methyl purple alkalinity was 29 mg/l as CaCO<sub>3</sub>. According to the same source, partial winterkill occurs occasionally (when decomposing plants deplete the oxygen dissolved in an ice-covered lake). However, we received no reports of winterkilled fish in recent years, and a 1995 WDNR survey report cited no severe winterkill losses since 1965. Most of the upland sites on the north and south shores have road access and residential improvements. The Township of Flambeau maintains a public boat landing with a gravel ramp and limited parking on the Price Lakes Road right-of-way near the outlet.

## Summary of Results

Le Tourneau Lake had surprisingly low species richness, considering its close and unobstructed connection to a medium-size river. We captured only eight fish species in these surveys. A few smallmouth bass, white suckers, and mudminnows were captured by electrofishing in September 2004, but those three species and bullheads were conspicuously absent from our recent samples. White sucker abundance declined sometime between the 1981 survey (when 177 suckers were captured in 2.3 electrofishing hours in June and October and 28 net-nights in July) and the 1994 survey (when one sucker was captured in 2.3 electrofishing hours and 32 net-nights in similarly-timed collections).

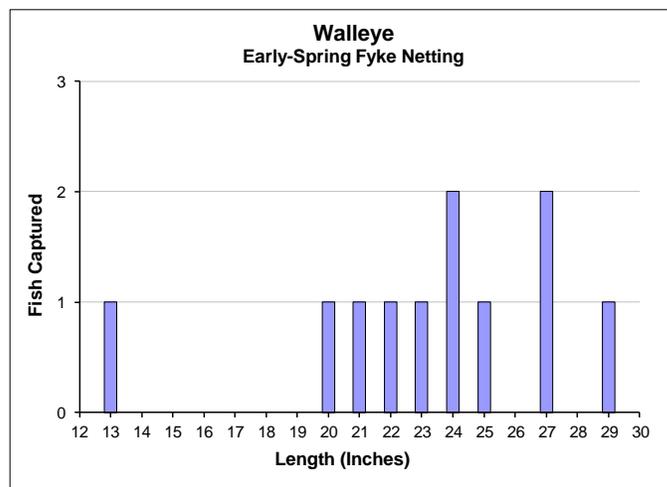
Largemouth bass were dominant in the fish community, and northern pike and walleyes equally shared a secondary role as predators. Together they ate enough bluegills, but apparently not enough crappies, to maintain the moderate levels of panfish abundance that are essential for good panfish angling.

### Walleye



#### Early Spring Fyke Nets

Captured 0.5 per net-night $\geq 10''$	
Quality Size $\geq 15''$	91%
Preferred Size $\geq 20''$	91%
Memorable Size $\geq 25''$	36%



The capture rate and length distribution of walleyes in early spring fyke nets depicted a population comprised mainly of large old fish, but still with a promising sign that natural recruitment can continue to sustain low adult abundance, despite several weak or missing year classes. Our records show that

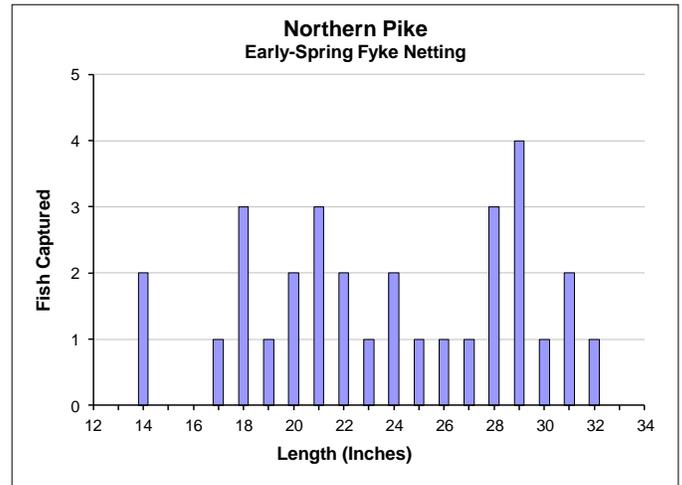
walleyes were never planted into Le Tourneau Lake, so the population undoubtedly originated from the Flambeau River and evolved to become well-adapted to local conditions. With limited harvest (presumed), low-density walleye populations typically include a substantial proportion of preferred-sized fish 20 inches and longer. Walleyes provide angling diversity to the fishery. Le Tourneau Lake anglers have opportunity to catch a walleye (probably a large walleye) once in a while. Over a third of the walleyes in our sample were at least 25 inches long, and one was approaching trophy size ( $\geq 30$  inches).

## Northern Pike



### Early Spring Fyke Nets

Captured	2.0 per net-night $\geq 14$ "
Quality Size $\geq 21$ "	71%
Preferred Size $\geq 28$ "	35%
Memorable Size $\geq 34$ "	0%



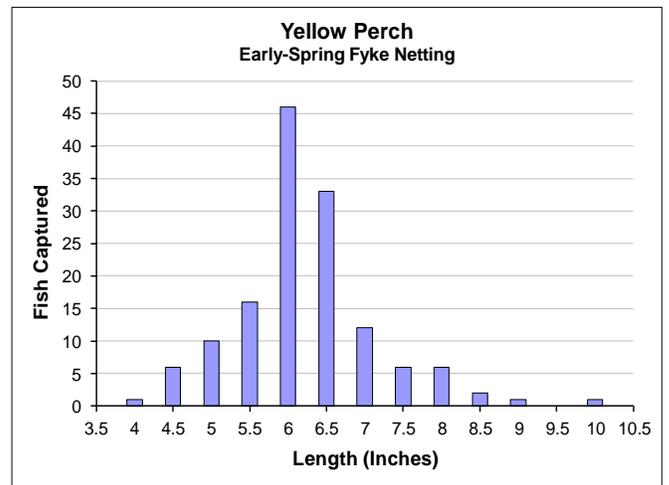
Our relatively low capture rate of northern pike in early spring fyke nets indicated the low to moderate population abundance necessary to avoid crowding and food competition among pike and keep them growing at a satisfactory rate. Together, yellow perch and golden shiners (favored) as well as bluegills and black crappies (less favored) at various levels of abundance provide the pike population the food calories needed to produce a respectable size structure with over a third of our sample 28 inches or longer. Based on what we know about pike behavior and physiology, their size is probably influenced more by lake characteristics (size, depth, summer temperature, and dissolved oxygen) than by angling harvest or food supply. Our sample included pike from many age and size classes, suggesting that the population produces a cohort in most years and that winterkill losses are rare.

## Yellow Perch



### Early Spring Fyke Nets

Captured	15 per net-night $\geq 5$ "
Quality Size $\geq 8$ "	8%
Preferred Size $\geq 10$ "	0.8%
Memorable Size $\geq 12$ "	0%



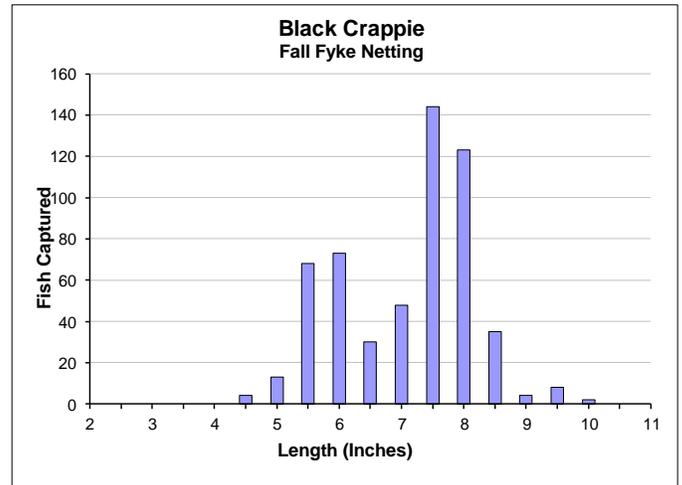
Early spring fyke nets captured yellow perch at a modest rate that reflects moderate population abundance. Despite finding no evidence of excessive crowding that often leads to intense food competition and impaired growth, the perch population included very few fish of the sizes that anglers would like to keep and eat. Perhaps more important than their angling value, yellow perch serve as the preferred food of largemouth bass, northern pike, and walleye. Adult pike tend to selectively eat the largest perch to obtain an efficient ration. We suspect that perch  $\geq 6$  inches help to control panfish abundance in Le Tourneau Lake by eating a substantial number of age-0 bluegills in winter.

## Black Crappie



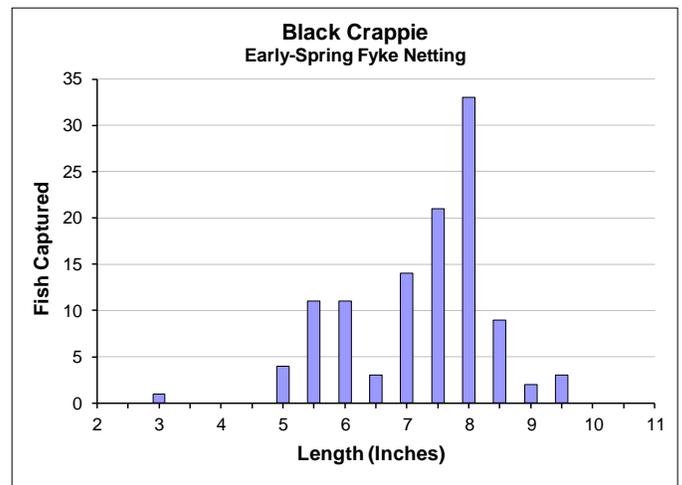
Fall Fyke Nets

Captured 69 per net-night $\geq 5$ "	
Quality Size $\geq 8$ "	31%
Preferred Size $\geq 10$ "	0.4%
Memorable Size $\geq 12$ "	0%



## Early Spring Fyke Nets

Captured 50 per net-night $\geq 5$ "	
Quality Size $\geq 8$ "	42%
Preferred Size $\geq 10$ "	0%
Memorable Size $\geq 12$ "	0%



Our catches in fall and early spring fyke nets both represented slow-growing black crappies in high population abundance with virtually no individuals longer than 10 inches. Capture rates and length distributions were similar in both surveys, and this time our spring nets did not include the larger fish that we sometimes capture in spring, but not in fall netting surveys. Ages confidently determined from otolith (earbone) cross sections removed from 17 crappies 7.3 – 9.2 inches long show that the population’s largest share is comprised of age-4 and age-5 survivors of strong year classes produced in 2010 and 2011. Le Tourneau Lake crappies grew to 7.7 inches in 4 years (range 7.3 – 8.0; n=10) and 8.5 inches in 5 years (range 8.0 – 9.2; n=6), attaining lengths 0.7 and 0.8 inch below the regional

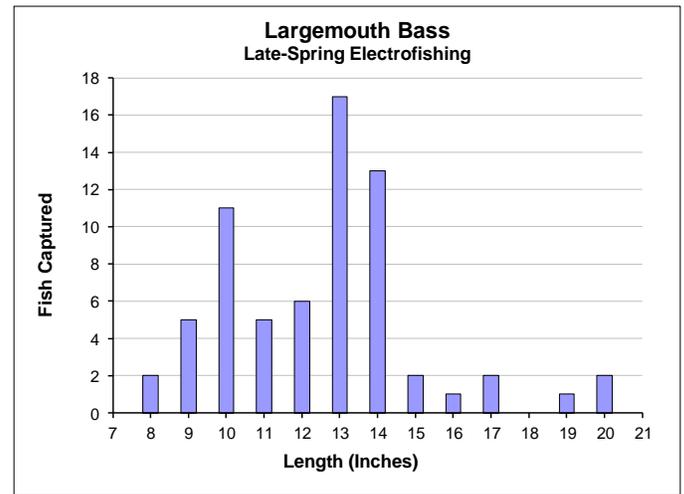
average at those ages. When we extracted otoliths, we also examined gametes to determine gender. Though our subsample was skewed 75% toward male crappies, males were 0.4 and 0.3 inches longer than females at ages 4 and 5. One 9.2-inch female in our subsample was 10 years old, suggesting that most crappies succumb to natural causes of mortality before they can grow to preferred size. Several strong year classes should offer fast-action fishing and meals for anglers who can be satisfied catching crappies up to 9 inches long. Growth rate and size structure of the crappie population may improve when recruitment rate decreases and year classes are not as abundant as they were in 2010 and 2011.

## Largemouth Bass



Late Spring Electrofishing

Captured 33 per mile or 67 per hour $\geq 8''$	
Quality Size $\geq 12''$	66%
Legal Size $\geq 14''$	31%
Preferred Size $\geq 15''$	12%



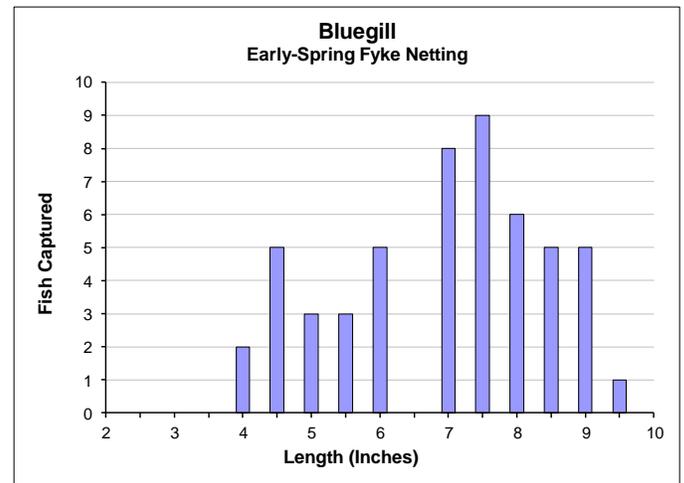
Late spring electrofishing captured largemouth bass at a fairly fast rate that we associate with moderately high population abundance. Though we did not take bony structures to analyze their length at various ages, we can cautiously infer that abundant largemouth bass in Le Tourneau Lake grow slowly. Still, 3% of the bass in our sample had lived long enough to reach memorable size  $\geq 20$  inches. Le Tourneau Lake's largemouth bass—easy to catch, even for novice fishermen—should provide high angling catch rates and a better-than-average chance of hooking a large fish. The sharp decline in their length distribution beyond the 14-inch minimum length limit suggests that some bass may die from fishing, either by harvest or after release.

## Bluegill



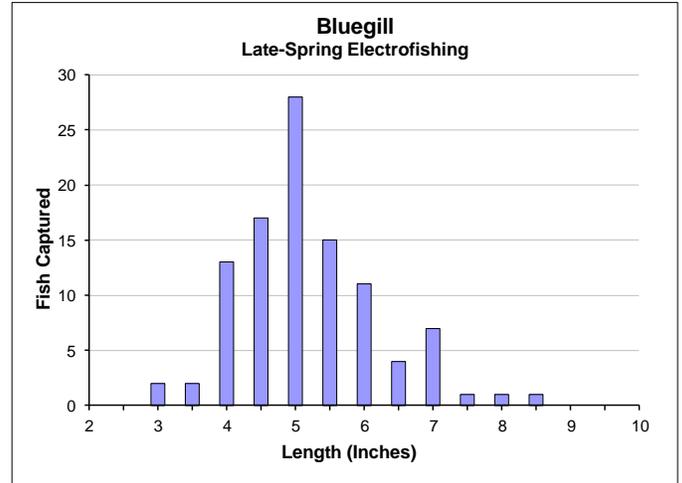
Early Spring Fyke Nets

Captured 17 per net-night $\geq 3''$	
Quality Size $\geq 6''$	75%
Keeper Size $\geq 7''$	65%
Preferred Size $\geq 8''$	33%



## Late Spring Electrofishing

Captured 204 per mile or 408 per hour $\geq 3$ "	
Quality Size $\geq 6$ "	25%
Keeper Size $\geq 7$ "	10%
Preferred Size $\geq 8$ "	2%



Typically, when we capture bluegills in late spring at such a high electrofishing rate as we experienced in Le Tourneau Lake, we find a crowded and “stunted” population with impaired growth and few individuals longer than 6 or 6½ inches, especially in infertile soft water lakes. By contrast, our 2015 electrofishing survey represented moderately high bluegill abundance, yet the population still possessed favorable proportions of keeper- and preferred-size fish. Spring netting captured a higher percentage of preferred-size fish than electrofishing did—a third of bluegills in our measured sample from spring nets were 8 – 9½ inches long. We did not analyze bluegill length at age. But even if bluegills grow slower than the average rate, predatory pressure seems adequate to keep bluegill numbers in check and the eutrophic system supplies sufficient invertebrate food to produce bluegills large enough to satisfy most anglers. Anglers could help to assure that good bluegill fishing can continue in Le Tourneau Lake by voluntarily limiting their harvest of the largest fish to no more than 5 bluegills  $\geq 8$  inches long in their daily bag limit of 25 panfish.

Survey data collected and analyzed by: Jeff Scheirer, Evan Sniadajewski, and Jeanette Wendler—  
WDNR Fishery Team, Park Falls.

Written by: Jeff Scheirer—Fishery Biologist, January 29, 2016.

Reviewed and approved for web posting by: Mike Vogelsang—Northern Administrative District  
Supervisor, February 3, 2016.

LAKE SURVEY MAP

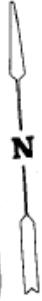
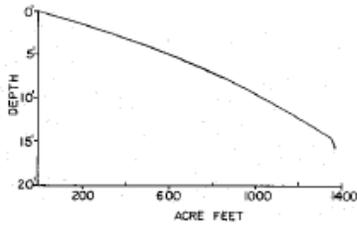
LE TOURNEAU LAKE PRICE COUNTY

SEC. 33 T. 39 N. R. 2 W.

MUD LAKE  
27 ACRES  
DEEP

28 27  
33 34

29 28  
32 33



Mixed Hardwood & Pine

Mixed Hardwood & Pine

Mixed Hardwood & Pine

Mixed Hardwood & Pine

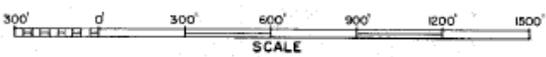
Hardwood Swamp

Department of Natural Resources B.M. "X"  
Bronze tablet on E. side of lake 170'  
SW of left side of culvert, 24' W of  
centerline of Price Lake Road.  
Assumed elevation 100.00'  
Water level 93.22'

EQUIPMENT RECORDING SONAR MAPPED SEPT. 1968  
MO. YR.

WATER ELEV. 93.22

- TOPOGRAPHIC SYMBOLS**
- ⊙ Brush
  - ⊙ Partly wooded
  - ⊙ Wooded
  - ⊙ Cleared
  - ⊙ Pastured
  - ⊙ Agricultural
  - B.M. Bench Mark
  - Dwelling
  - ⊙ Resort
  - ||||| Steep slope
  - - - Indefinite shoreline
  - ⊙ Marsh
  - ⊙ Spring
  - ⊙ Intermittent stream
  - ⊙ Permanent inlet
  - ⊙ Permanent outlet
  - ⊙ Dam
- LAKE BOTTOM SYMBOLS**
- P. Peat
  - Mk. Muck
  - C. Clay
  - M. Marl
  - Sd. Sand
  - Sl. Silt
  - Gr. Gravel
  - R. Rubble
  - Br. Bedrock
  - T. Submergent vegetation
  - ⊙ Stumps & Snags
  - ⊙ Floating vegetation



◇ Access      ◀ Access with Parking      ◆ Boat Livery  
Field work by C. Busch, C. Olson, J. Sather. Drawn by: C. Holt

SPECIES OF FISH	ABUNDANCE		
	Common	Occasional	Present
Muskie			
N. Pike			
Walleye			X
L.M. Bass			X
S.M. Bass			X
Panfish			X
Traut			

AREA 124.40 ACRES  
UNDER 3 FT. 5.0 %  
OVER 20 FT. 0 %  
VOLUME 1369.72 ACRE FT.  
TOTAL ALK. 29 P.P.M.  
SHORELINE 2.12 MILES  
MAX. DEPTH 16 FEET