



Summary of Fishery Surveys Pelican Lake, Sawyer County, 2012

Survey Effort

On June 13, 2012 WDNR's Fisheries Management Team from Park Falls completed an electrofishing survey to assess the abundance and size structure of largemouth bass and bluegill populations in 32-acre Pelican Lake, located entirely within the Flambeau River State Forest just south of State Highway 70 at the border of Price and Sawyer counties. State Forest staff cleared a makeshift landing at the former resort site on the north shore, and we launched our large electrofishing boat on oak timbers. Warm weather in late March may have prompted early spawning in portions of both populations, but with water temperature at 74°F and males observed guarding eggs in nests, our survey was well-timed to represent target species during their spawning activities. We sampled all fish species in a complete shoreline circuit (1.05 miles) in 0.58 hour. 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.

Habitat Characteristics

Pelican Lake is a soft water seepage lake landlocked within a 96-acre, undeveloped watershed. Maximum and average depths are 16 and 8.8 feet, and 7% of the surface area is less than 3 feet deep. Bottom material is muck adjacent to the leather-leaf bogs that surround half the shoreline, and sand substrate flanks the upland remainder where vegetative cover is mixed hardwood and pine forest. Humic acids leaching from surrounding bogs lower the pH to 6.6. The deepest lakebed is visible from the surface. High water clarity indicates low levels of nutrients and low rates of algal production. Deep light penetration allows rooted aquatic plants to grow anywhere in Pelican Lake, and by early summer lily pads cover much of the surface. WDNR maintains a carry-in boat access on the southwest shore; there is no boat ramp.

Summary of Results

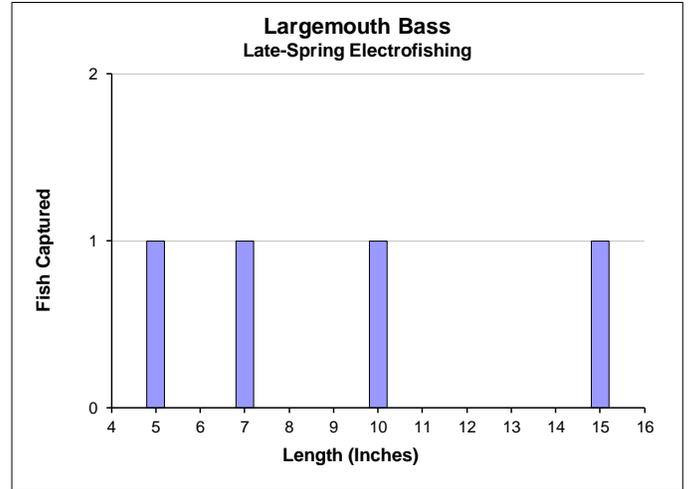
Low conductivity severely hampered our electrofishing capture efficiency. Operating at 485 volts, the maximum electrical output of our gear was less than ½ ampere—too little alternating current to deliver the desired stunning effect on fish. Specific conductance was 19 µmhos/cm at 77°F in June 1965. With excellent visibility, we observed that most fish were unfazed or mildly disturbed by our approach, darting away only after we tried to capture them in dipnets. We estimated that 65 – 75% of the fish that we observed were able to elude capture. Consequently, the capture rates reported in the tables below grossly underestimate population abundance, though no fish visible to us seemed notably larger than those we measured.

Largemouth Bass



Late Spring Electrofishing

Captured 1.9 per mile or 3.4 per hour $\geq 8"$	
Quality Size $\geq 12"$	50%
Preferred Size $\geq 15"$	50%

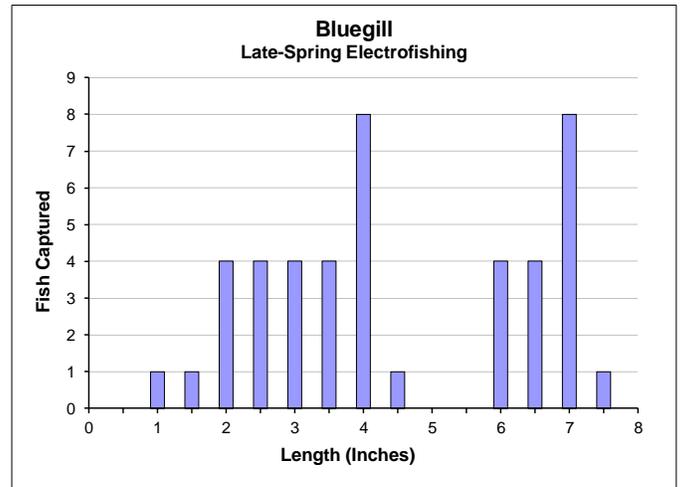


Bluegill



Late Spring Electrofishing

Captured 32 per mile or 59 per hour $\geq 3"$	
Quality Size $\geq 6"$	50%
Keeper Size $\geq 7"$	26%

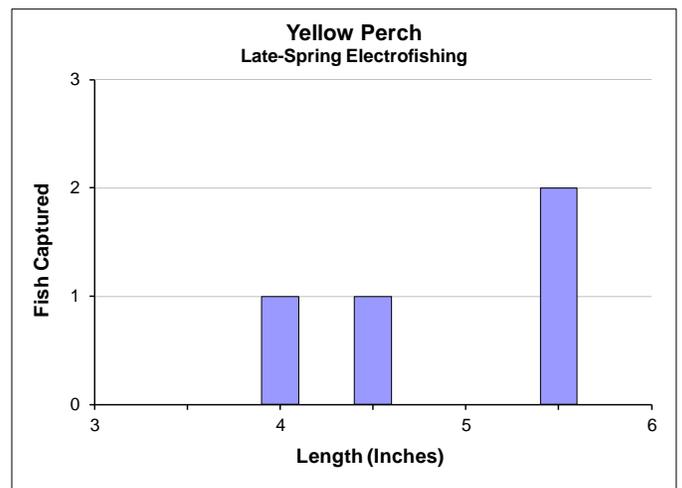


Yellow Perch



Late Spring Electrofishing

Captured 1.9 per mile or 3.4 per hour $\geq 5"$	
Quality Size $\geq 8"$	0%



Fish captured and observed in our spring 2012 survey revealed a fish community comprised exclusively of bluegill, largemouth bass, and yellow perch whose relative abundance we rated as high, moderate, and low, respectively. Despite clear water that aids sight-feeding predators, largemouth bass were unable to eat enough bluegill to keep them from competing for scarce food, and we suspect that most bluegill die of natural causes before they attain preferred size. Tube-shaped yellow perch, preferred over platter-shaped bluegill as prey of largemouth bass, may divert the predatory pressure needed to control bluegill abundance. Past attempts to improve bluegill size structure by chemical eradication and by stocking largemouth bass and walleye as predators were unsuccessful. Pelican Lake's clear, shallow water does not offer the optical conditions that walleyes need. The ecosystem's apparent low capacity to produce suitable food may explain growth rates presumed to be slow in all three populations. Clear infertile water favors production of rooted aquatic plants, rather than algae that feed zooplankton and invertebrates—both important food of bluegill and yellow perch. Nonetheless, our observations suggest that Pelican Lake should offer fast-action angling opportunity for quality-size largemouth bass and keeper-size bluegill in a wild and scenic setting.

Survey Data Collected and Analyzed By: Kendal Patrie, Rebecca Pawlak, and Jeff Scheirer—
WDNR Fishery Team, Park Falls

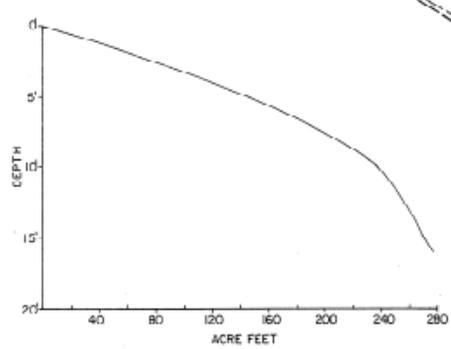
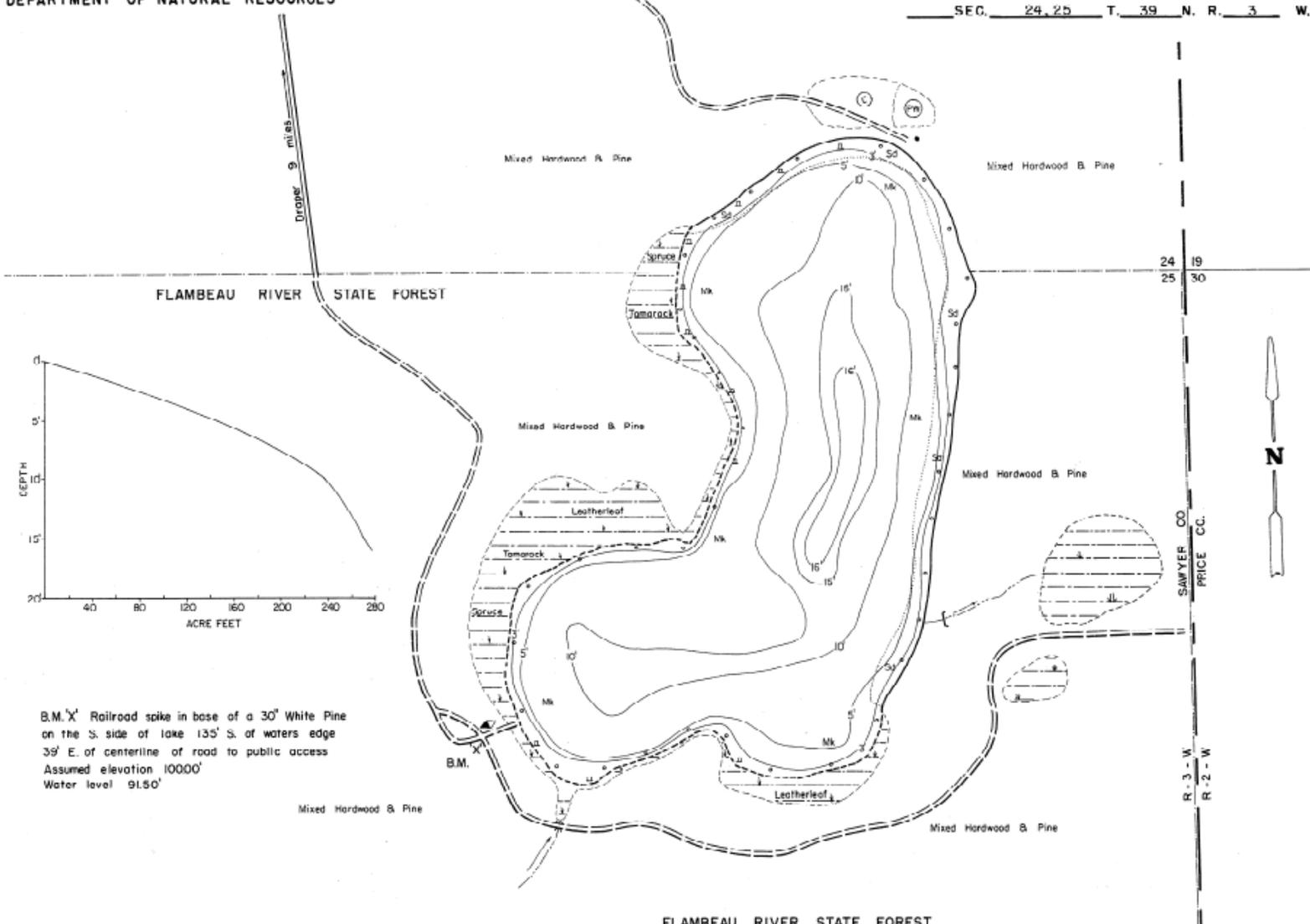
Report By: Jeff Scheirer, Fisheries Biologist, Flambeau River State Forest Waters, 4/19/13

Edited By: Dave Neuswanger, Fisheries Supervisor, Hayward Field Unit, 5/2/13

Approved for Posting By: Steve Avelallemant, Fisheries Supervisor, Northern District, 11/07/13

LAKE SURVEY MAP

LITTLE PELICAN LAKE
SAWYER COUNTY
SEC. 24, 25 T. 39 N. R. 3 W.



B.M. X' Railroad spike in base of a 30' White Pine
on the S. side of lake 135' S. of waters edge
39' E. of centerline of road to public access
Assumed elevation 10000'
Water level 91.50'

EQUIPMENT	RECORDING	SONAR	MAPPED	LINE	1973
TOPOGRAPHIC SYMBOLS				MONTH	YEAR
(B) Brush		Steep slope	P. Peat	LAKE <td>BOTTOM</td>	BOTTOM
(W) Partially wooded	-----	Indefinite shoreline	Mk. Muck		
(M) Wooded	-----	Marsh	C. Clay		
(C) Cleared	-----	Saring	M. Marl		
(P) Pastured	-----	Intermittent stream	Sd. Sand		
(A) Agricultural	-----	Permanent inlet	Sl. Silt		
B.M. Bench Mark	-----	Permanent outlet	Gr. Gravel		
(D) Dwelling	-----	Dam	R. Rubble		
(R) Resort	-----	D.N.R. State owned land	Bc. Bedrock		
([]) Camp	-----				

LAKE BOTTOM SYMBOLS		
B	Boulders	
Stumps & Snags		
Rock danger to navigation		
Submersent vegetation		
Emergent vegetation		
Floating vegetation		
Brush shelters		

Access Access with Parking Boat Livery
 Drawn by: C. Holt
 Field work by: C. Busch, K. Cable, L. Sather

SPECIES OF FISH	1973	
	Abundant	Present
Muskie		
N. Pike		
Walleye	X	
L. M. Bass	X	
S. M. Bass		
Panfish	X	
Trout		

WATER AREA 31.7 ACRES
 UNDER 3 FT. 7 %
 OVER 20 FT. 0 %
 MAX. DEPTH 16 FEET.
 TOTAL ALK. 4 P.P.M.
 VOLUME 278 ACRE FT.
 SHORELINE 105 MILES