Inventory # 9-012

Pat Martin Lake

Pat Martin Lake is a small, 35 acre lake located east of County Road 113 and north of County Road 114 in St. Louis County (Figure 1). The lake is accessible by carry in access only, and is surrounded by a floating spruce/tamarack bog. It has extremely soft water (mean total hardness = 7.7 mg/l as $CaCO_3$; mean specific conductance = 11.6), moderately stained (mean filtered color = 42.7), and moderately productive, on the low end of the mesotrophic range with a Carlson's Trophic State Index of 45.6, based upon total phosphorus, chlorophyll a and secchi depth.

The purpose of this survey was to collect base line data of fish communities, and to use this data for future management decisions. Fish species observed in Pat Martin Lake were largemouth bass and black crappie (Figure 2). Sampling gear was limited to three gill nets and supplemented by hook and line. Three black crappie and five largemouth bass were collected and used for mercury analysis (Table 1). Black crappie total wet weight mercury concentrations would suggest an unlimited safe consumption for the general population, and one meal/week for the sensitive population. Largemouth bass total wet weight mercury concentrations ranged from 0.299 to 1.27 μg/g, with four of the LMB in the 11-14" range suggesting a safe consumption advisory of one meal/week for the general population, and one meal/month for the 18"fish. Consumption advisories for the sensitive population would be one meal/month for the smaller fish, and "do not eat" for the largest fish.

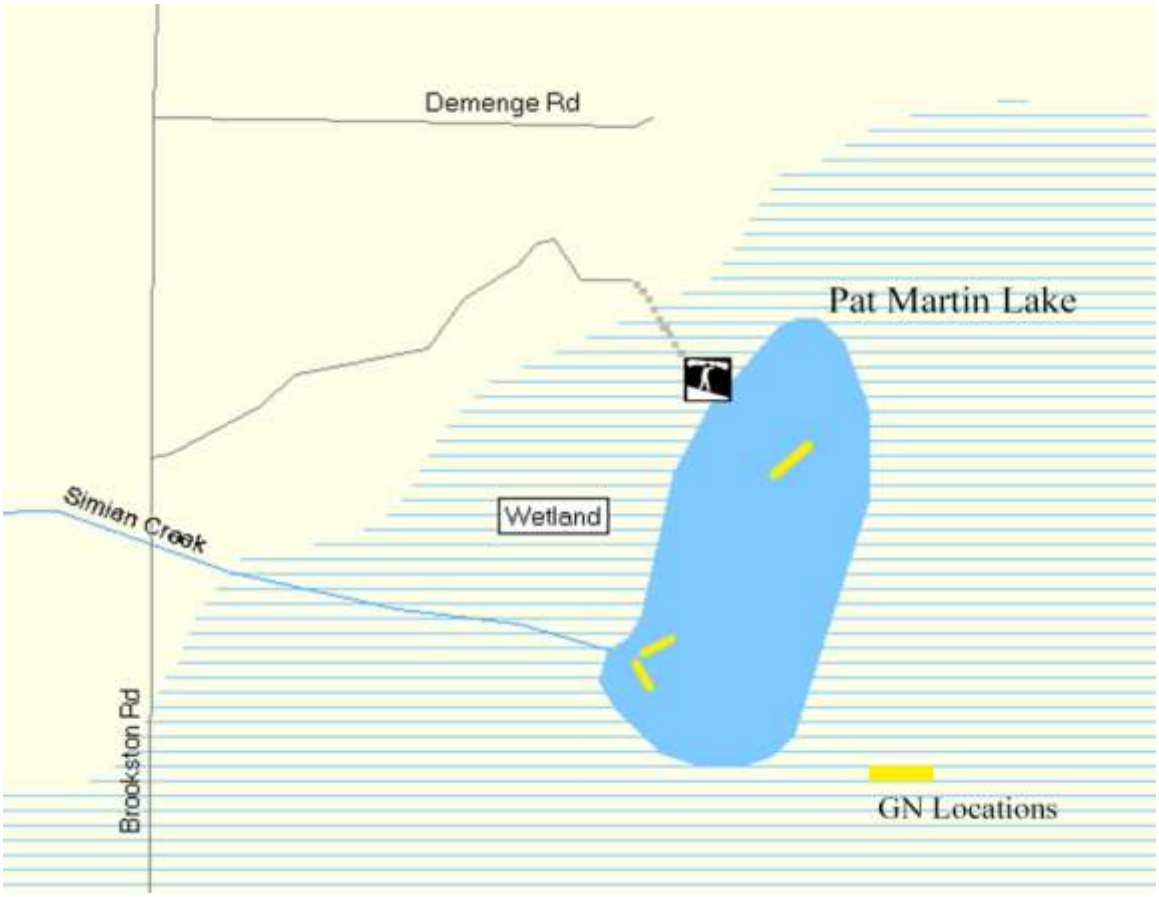

Figure 1. Map of Pat Martin Lake, with 2008 gill net locations indicated.

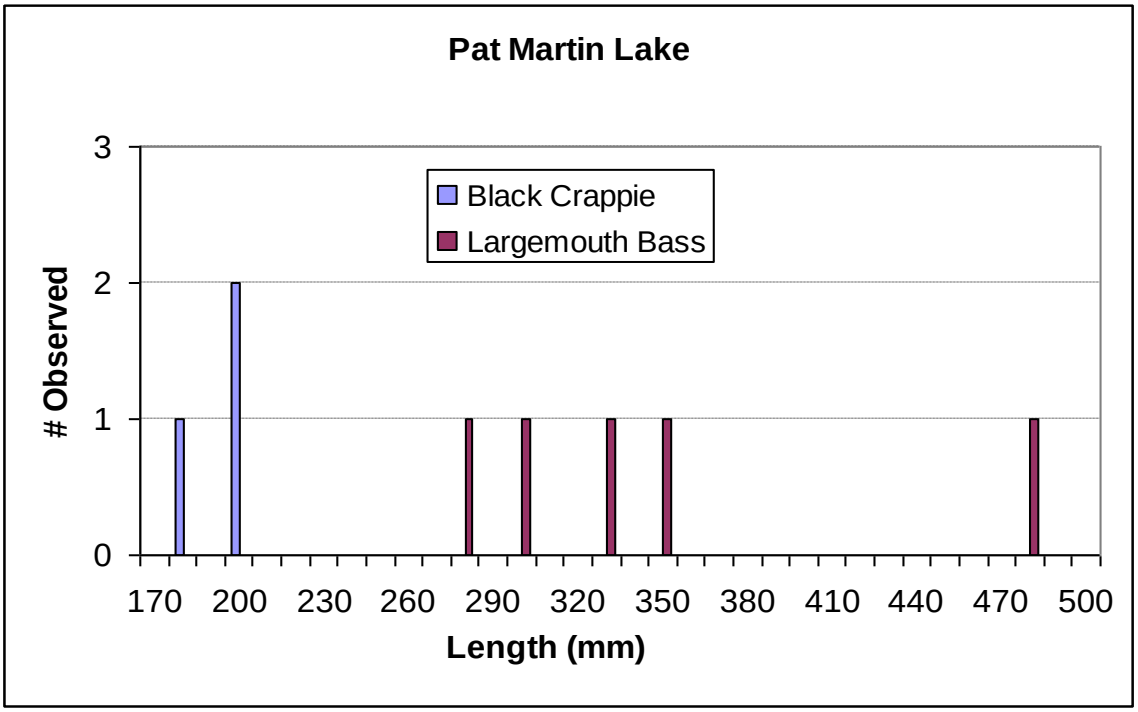

Figure 2. Black crappie and largemouth bass length frequency sampled in Pat Martin Lake 2008

Table 1. Mercury analysis results of bluegill and northern pike, measured in micrograms of mercury per gram of fish tissue (µg/g), for Pat Martin Lake 2008.

Species	Length (mm)	Length (in)	µg/g Tissue
BLC	186	7.3	0.043
BLC	206	8.1	0.115
BLC	200	7.9	0.083
LMB	282	11.1	0.299
LMB	480	18.9	1.27
LMB	337	13.3	0.363
LMB	350	13.8	0.363
LMB	304	12.0	0.32