Atlanta Pond
Montmorency County, T30N, R2E
Thunder Bay River Watershed, last surveyed 2013

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Environment

Atlanta Pond is an impounded reach of the upper Thunder Bay River in the town of Atlanta, Michigan in Montmorency County (Figure 1). The dam has a height of 15 feet and impounds an estimated 97 acres (Breck 2004), though the actual flooding appears much smaller based on observation. The dam is the responsibility of the Montmorency County drain commissioner, and local circuit court has established a legal lake level for Atlanta Pond. Operation and maintenance of the dam is overseen by the Montmorency County Drain Commissioner. The dam is a complete barrier to upstream fish passage. There is a top spillway at the dam which flows through an underground culvert and into the Thunder Bay River. This river is managed as a Type 4 trout stream downstream of the pond and is stocked annually with trout by the Michigan Department of Natural Resources.

The pond has a maximum depth of about 9 feet, and most of the lake is less than 6 feet deep. The bottom substrate is primarily muck with sand in some near-shore areas. Aquatic vegetation, particularly in spring and summer, is prevalent. The majority of the shoreline of Atlanta Pond is privately owned and is a mixture of houses, a township park (Briley Township), and some wetland and upland forest. The township park is located near the dam and offers shoreline access, including a fishing pier that runs parallel to the shore near the dam. The park also has a small unimproved boat launch that is maintained by the township.

History

The first assessment of the aquatic community was done by the Michigan Department of Natural Resources in July of 1971. At that time, bottom temperature ranged from 74-78 degrees F. The pond had high alkalinity indicating somewhat high productivity. Fishing pressure was considered high although survey observations and collections documented a limited game fish potential. DNR personnel used an unspecified number of gill nets to assess the fish community. White suckers were fairly abundant as well as pumpkinseed sunfish and yellow perch. Rock bass and northern pike were collected in lesser numbers in the 1971 assessment. No largemouth bass or bluegill were collected in the gill nets, although these species were known to inhabit Atlanta Pond.

Various management recommendations were made by DNR in the decade following the survey. Suggestions included chemical reclamation of the entire pond, and supplemental stocking of game fish such as largemouth bass and hybrid sunfish. One recommendation was to stock a cold water species such as brown trout. The only recommendation implemented was the stocking of 2,352 fall fingerling largemouth bass in 1975. By 1986, fisheries managers considered there might be some potential for walleye survival in the pond and stocked 10,000 spring fingerling (1.4 inch average) walleye. No walleye catch reports surfaced in the years following the stocking event, and the practice of stocking walleye was discontinued.

Current Status

The most recent fish community survey of Atlanta Pond was conducted from May 20 - June 25, 2013. Effort consisted of: 2 experimental gill-net lifts, 2 large mesh trap-net lifts, 9 large mesh fyke-net lifts, 4 small mesh fyke-net lifts, and 30 minutes of direct current nighttime boomshocking. A total of 446 fish were captured during the survey (Table 1). The most abundant species in the catch were bullheads. Panfish such as bluegill, pumpkinseed, yellow perch, rock bass, and black crappie made up 54% of the survey catch by number and 12% by weight. Largemouth bass, the top predator, comprised 10% of the total catch by number, but 76% by weight.

Bluegills are currently the most abundant panfish in Atlanta Pond, but very few of them are 7 inches or larger, which is considered a desirable size for tablefare (Table 2). No bluegill larger than 9 inches were captured during the survey. Growth of this species was average when compared to bluegill populations across Michigan (Table 1). Eight year classes of bluegill were captured (Table 3), yet bluegill older than age three were not abundant.

Panfish diversity is relatively high in Atlanta Pond, but sizes are generally less than desirable. Pumpkinseed sunfish were relatively abundant, but most were 2-5 inches, and none were larger than 7 inches. Pumpkinseed growth is considered average in Atlanta Pond. Rock bass were common with most ranging from 5-8 inches. Rock bass growth was average to slightly below average. Yellow perch were represented by four year classes (Table 3), but few exceeded five inches. Growth of this species was average, and a few perch larger than 8 inches were collected. Three year classes (ages) of black crappie were sampled and all were between 7 and 10 inches, yet this species was considered uncommon in the survey catch.

The predator population is restricted to largemouth bass, northern pike, and a rare smallmouth bass. Largemouth bass are the top predator in Atlanta Pond, and make up most of the biomass for predators. Nine year classes of largemouth bass were sampled, and growth of this species was considered average when compared to other Michigan waters. Legal size (14 inches and larger) largemouth bass were relatively common and trophy size bass (20 inches and larger) are present (Table 2). Bass in the 14-16 inch size range were most abundant.

One large smallmouth bass was collected in the Atlanta Pond survey. Smallmouth bass may be more abundant in the Thunder Bay River upstream of this impoundment, and occasionally they may drift downstream and grow larger in the shallow, warmer water. Northern pike were also collected in the survey and were represented by five year classes (Table 3). Some legal size (24 inch and larger) northern pike were collected, though smaller sub-legal fish were much more common.

Other species typical to a warm water northern Michigan lake were found in Atlanta Pond including white suckers, bullheads, darters, and central mudminnow. Bullheads thrive in the mucky shallow waters of the pond, as do white suckers which most likely spawn upstream in the Thunder Bay River.

Analysis and Discussion

Atlanta Pond is a small, shallow impoundment on the upper Thunder Bay River. The impoundment receives cool river water all summer, yet it heats up considerably during the warm months and is only suitable for a marginal, warm water fish community.

The current fish community of Atlanta Pond can be generally characterized as having the following characteristics: 1) a diverse but low-quality, naturally-reproducing panfish community dominated by rock bass, bluegill, and pumpkinseed, 2) a panfish community which typically displays average growth across species, 3) a moderately diverse, naturally-reproducing predator population consisting of average-growing largemouth bass, and northern pike, 4) a non-game fish community low in species diversity and abundance, and

In addition, Atlanta Pond morphology is that of a typical small impoundment in northern Michigan which is shallow and continues to age through sediment accumulation and aquatic vegetation growth.

The Atlanta Pond panfish community is low quality since it does not produce an abundance of large panfish. Species available to anglers include bluegill, pumpkinseed, black crappie, rock bass, and yellow perch. Growth of sunfish is average and these species are the most abundant. Fishing pressure appears moderate at Atlanta Pond. Access in the town of Atlanta is good, and most pressure is exerted on the east end where the water is slightly deeper. Lack of large panfish (e.g. bluegill) is, most likely due to angler harvest, since growth rates are fair. Other panfish such as black crappie and yellow perch add diversity to the harvest, but probably remain insignificant in number yielded.

The main predators of Atlanta Pond are largemouth bass and northern pike. Largemouth bass of a variety of sizes and ages can be found and are vital in helping balance the panfish community through predation. Based on survey results, this species should afford anglers an opportunity to catch an occasional large fish. Northern pike densities are not high in Atlanta Pond, and their growth at young ages may be limited by thermal factors. This pond gets warm in the summer, which likely hinders northern pike activity and feeding. Pike prefer water that is cooler than what exists in Atlanta Pond during the summer.

The non-game fish community of Atlanta Pond is dominated by bullheads and white suckers, species which can compete with more desirable game fish.

Management Direction

1) Current statewide fishing regulations are suitable for the marginal warm water fish community in Atlanta Pond. The fish community is limited by the morphology of the impoundment. Stocking of other species such as walleye is not warranted.

2) Anglers are urged to report catches of all species to the local MDNR biologist. Sampling gear is not always efficient at capturing some fish, sometimes leaving information gaps for individual species. Such reports are useful for current management of the fishery and for future management as well. The current standard northern pike fishing regulations (24 inch minimum size limit with a daily possession limit of 2 fish) are appropriate for Atlanta Pond.

3) DNR would support the removal of the Atlanta Pond Dam and the re-connecting of the Thunder Bay River upstream and downstream of the pond. This is a general management option (for most watershed dams) identified in the Thunder Bay River Assessment (Cwalinski et al. 2006). This management option would allow fish passage upstream and downstream for riverine species, including

brown trout. In addition, dam removal would lower river temperatures downstream and create a more viable trout fishery.

References

Breck, J. E. 2004. Compilation of databases on Michigan lakes. Michigan Department of Natural Resources, Fisheries Technical Report 2004-2, Ann Arbor.

Cwalinski, T. A., N. A. Godby, Jr., and A. J. Nuhfer. 2006. Thunder Bay River Assessment. Michigan Department of Natural Resources, Fisheries Special Report 37, Ann Arbor.

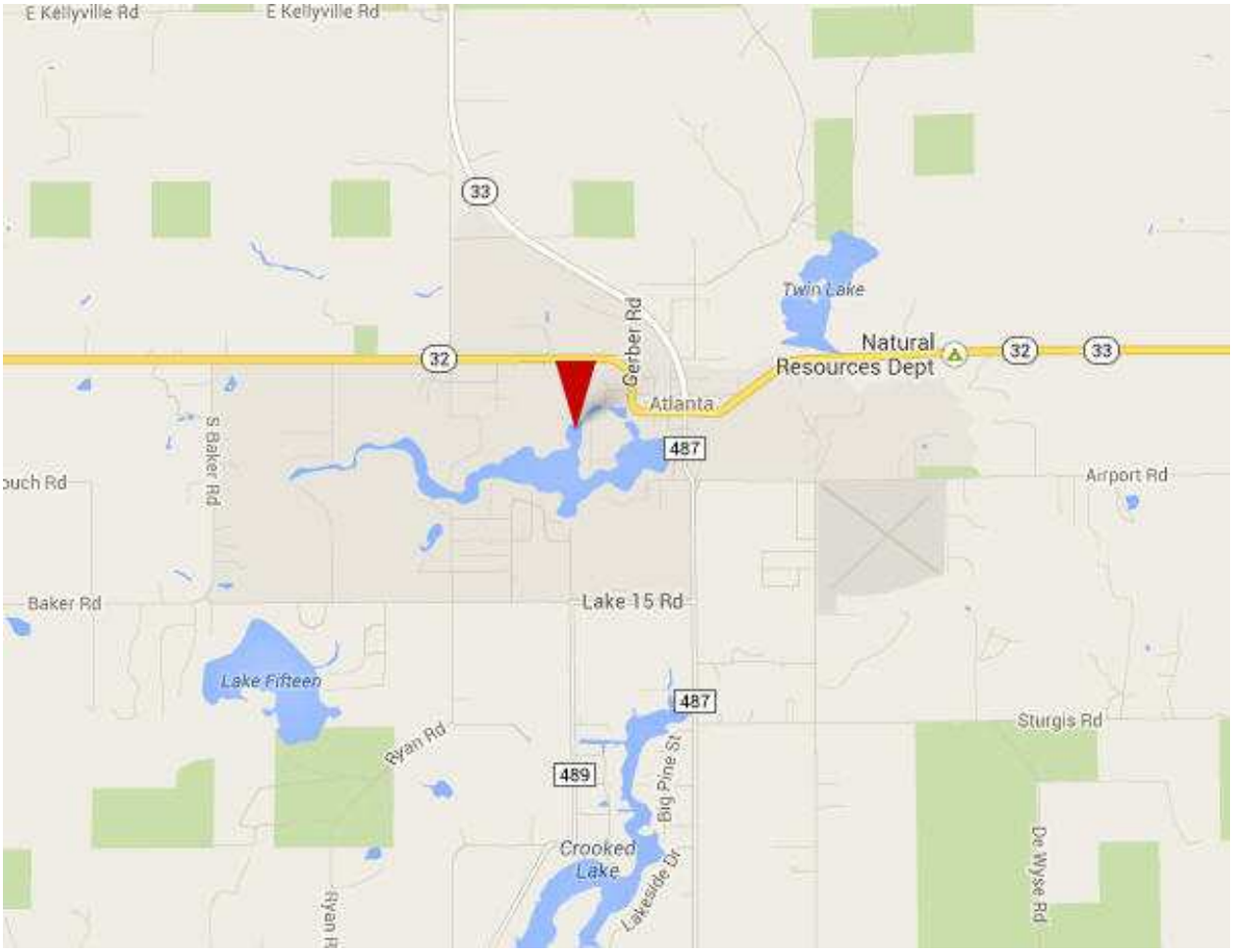

Figure 1. Location of Atlanta Pond near Atlanta, Michigan. Pond is marked by red arrow.

Table 1. Species and relative abundance of fishes collected with survey gear at Atlanta Pond.

Common Name	Number	Percent	Length Range *(inches)*	Weight (lbs)*	Percent	Growth** (inches)
Yellow bullhead	91	20.4	6-13	64.0	26.3	
Rock bass	82	18.4	4-8	18.2	7.5	-0.5
Bluegill	74	16.6	1-8	2.7	6.5	+0.2
Pumpkinseed	48	10.8	2-6	2.9	1.2	-0.1
Largemouth bass	43	9.6	3-20	75.6	31.1	+0.3
Central mudminnow	35	7.8	2-3	0.4	0.2	
Yellow perch	31	7.0	4-9	3.1	1.3	+0.3
Northern pike	15	3.4	13-29	32.2	13.2	-2.6
White sucker	9	2.0	7-21	23.7	9.7	
Black bullhead	8	1.8	10-13	8.0	3.3	
Black crappie	5	1.1	7-9	1.6	0.6	
Brown bullhead	3	0.7	9-13	2.4	1.0	
Iowa darter	1	0.2	2	0.0	0.0	
Smallmouth bass	1	0.2	20	3.1	1.3	
Total	446			243.0		

* calculated based on length-weight relationships

**based on a comparison to statewide growth for that species (inches)

Table 2. Length-frequency distribution of game fishes collected during the late-May/early-June 2013 survey at Atlanta Pond.

Length (in)	Bluegill	L. bass	N. pike	Rock bass	Yellow perch
1	3				
2	18				
3	20	2			
4	3			5	2
5	15	2		30	22
6	7			14	1
7	6	1		26	2
8	2			7	3
9					1
10					
11		1			
12		2			
13		5	1		
14		9	3		
15		11	1		
16		5	1		
17		2	1		
18					
19		2	1		
20		1			
21			2		
22					
>23			5		

Table 3. Age and growth of game fishes collected in Atlanta Pond, 2013.

Species/Age	No. Aged	Length Range (in)	Weighted mean length (in)	State Average Length (in)
Bluegill				
Age I	14	1.9 – 2.7	2.2	1.8
Age II	24	3.0 – 4.5	3.5	3.8
Age III	10	4.8 – 6.3	5.3	5.0
Age IV	6	5.8 – 6.7	6.2	5.9
Age V	1	6.6	6.6	6.7
Age VI	4	7.3 – 7.7	7.5	7.3
Age VII	3	7.7 – 8.4	8.0	7.8
Age VIII	1	8.6	8.6	8.2
Pumpkinseed				
Age I	7	2.4 – 3.3	3.0	1.8
Age II	9	2.7 – 4.5	3.4	3.8
Age III	13	3.5 – 5.2	3.9	4.9
Age IV	2	5.3 – 6.8	6.1	5.6
Age V	1	6.5	6.5	6.2
Age VI	1	6.6	6.6	6.6
Age VII	2	6.0 – 6.8	6.4	7.1
Y. perch				
Age II	15	4.6 – 5.8	5.3	5.2
Age III	4	5.8 – 7.7	6.6	6.5
Age IV	5	7.7 – 8.1	8.0	7.5
Age V	1	9.2	9.2	8.5
Rock bass				
Age II	1	4.5	4.5	3.9
Age III	13	4.3 – 5.8	5.4	5.1
Age IV	3	6.1 – 6.2	6.2	6.1
Age V	6	5.3 – 6.6	6.1	6.9
Age VI	12	5.1 – 8.3	7.1	7.8
Age VII	6	7.2 – 8.4	7.7	8.6
Age VIII	1	8.9	8.9	9.3
Black crappie				
Age II	1	7.2	7.2	6.0
Age III	2	7.3 – 8.8	8.1	7.5
Age IV	2	8.4 – 9.3	8.9	8.6

Table 3 continued...

Species/Age	No. Aged	Length Range (in)	Weighted mean length (in)	State Average Length (in)
L. bass				
Age I	2	3.2 – 3.8	3.5	4.2
Age II	3	5.0 – 7.8	6.2	7.1
Age III	1	11.8	11.8	9.4
Age IV	4	12.6 – 13.7	13.1	11.6
Age V	5	13.7 – 14.7	14.2	13.2
Age VI	11	13.3 – 15.9	14.8	14.7
Age VII	10	14.8 – 17.6	15.8	16.3
Age VIII	5	16.5 – 19.2	17.8	17.4
Age IX	-	-	-	-
Age X	1	20.2	20.2	19.3
S. bass				
Age VIII	1	20.5	20.5	17.3
N. pike				
Age II	7	13.4 – 17.8	15.1	17.7
Age III	3	19.2 – 21.8	20.7	20.8
Age IV	3	24.5 – 26.2	25.1	23.4
Age V	1	27.0	27.0	25.5
Age VI	-	-	-	-
Age VII	-	-	-	-
Age VIII	1	29.1	29.1	31.2