

## **Loud Pond**

Iosco County

Au Sable River watershed, last surveyed 2008

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### **Environment**

Loud Pond is the third impoundment in a series of hydroelectric impoundments along the Au Sable River and located in northwest Iosco County, approximately seven miles east of the town of South Branch, Michigan, in the Lower Peninsula (Figure 1 and 2). Loud Pond is approximately 775-937 surface acres in size (depending on different documents, and what is counted as riverine versus impoundment reaches), and over two miles long from east to west. The pond has 11,700 acre-feet of storage (Zorn and Sendek 2001) and a flushing rate of less than three days.

The Consumer's Energy dam was built in 1913 and has a head of 27 feet. The dam completely prevents upstream fish passage and downstream entrainment of fish through the turbines occurs. Loud Dam is operated with peaking flows and generates power as needed. The structure is currently under a 40-year operating license (1994-2034) that is regulated by the Federal Energy Regulatory Commission.

The surrounding land around Loud Pond is owned by Consumers Energy and the U.S. Forest Service (USFS). The riparian zone is a mixture of lowland swamps and high hills. Aquatic vegetation is common in the impoundment. Bottom substrate is primarily sand and muck with little cobble or gravel present. The Au Sable River flows into the impoundment from the west. The Au Sable River flowing from Loud Dam immediately enters the upper riverine reaches of Five Channels Pond. Loud Pond has many riverine features to it. The deepest parts of the pond are over 30 feet in depth.

A gravel surfaced boat launch suitable to medium-sized watercraft is available for anglers on the south shore adjacent to the dam. This site is maintained by Consumers Energy as specified in their license agreement.

### **History**

Historical stocking records for Loud Pond are notably absent when compared to records of frequent stocking events at other regional lakes prior to 1960. Stocking simply did not occur prior to then. A few stocking records exist for spring or fall fingerling Muskellunge that were stocked since 2000 (Table 1). These stocking efforts were done in effort to rehabilitate Muskellunge populations in the lower Au Sable River impoundments where they were believed to be extirpated (Zorn and Sendek 2001).

Fish community and habitat observations for Loud Pond date back to the mid-1920s, ten years after the dam was constructed. The Department of Conservation (DOC) described a clear waterbody with a muck and sand bottom. Fish noted as present from anglers and DOC personnel observations were Rock Bass, sunfish species, Yellow Perch, Northern Pike, Walleye, Smallmouth Bass, suckers, minnows, shiners, and darters.

Department of Conservation conducted numerous temperature and dissolved oxygen profiles throughout the impoundment in the summer of 1950. Results showed very little thermal stratification with dissolved oxygen suitable to fish throughout most of the water column. Angler catches through the decade of the 1950s were dominated by Rock Bass, Yellow Perch, Smallmouth Bass, and Northern Pike, and to a lesser degree Pumpkinseed, Largemouth Bass, Walleye, and suckers. This was based on angler surveys conducted by DOC conservation officers for that period.

A large gap in fish surveys or fish management for Loud Pond then occurred till the early 1990s, prior to when FERC licenses were approaching the end of their dam leases. Temperature and dissolved oxygen profiles were conducted at Loud Pond in both 1991 and 1992 by the Department of Natural Resources (DNR). These were done at all the lower Au Sable River impoundments to investigate possible cold-water habitat in all the ponds prior to dam relicensing. Multiple locations were surveyed in Loud Pond, but again very little thermal stratification was found. No cold-water habitat was evident. Dissolved oxygen levels were suitable for fish throughout most of the water column.

The first detailed fish community survey of Loud Pond was made in 1996 by the DNR. Sampling effort from June 10-13 including large-mesh fyke-nets, small-mesh fyke-nets, and experimental gill nets for a total of 50 net nights. A total of 1,176 fish weighing an estimated 1,477 pounds were collected (Table 2). Nineteen species of fish were collected.

Panfish collected were Pumpkinseed, Rock Bass, Bluegill, Yellow Perch, Green Sunfish, and Black Crappie. These species comprised 56% of the total catch number and 9% by weight. Pumpkinseed, Rock Bass, Bluegill, and Yellow Perch were relatively common (Table 2) as compared to the other panfish. Bluegill and Pumpkinseed were dominated by fish 7 inches or less in size (Table 3). Six year-classes of Bluegill were found (Table 4) and growth was considered average compared to the statewide average for this species. Pumpkinseed also demonstrated average growth and were represented by five age classes. Rock Bass were slow-growing but could attain larger sizes (Table 3) and older ages (Table 4). Most Yellow Perch were in the 7-8 inch size range and displayed average growth rates. A few large Yellow Perch and Black Crappie were collected (Table 3).

Predator game fish including Northern Pike, Smallmouth and Largemouth Bass, and Walleye made up only 3% of the total catch by number and 4% by weight (Table 2). Northern Pike were the most abundant game fish predator, ranging in length from 6-30 inches (Table 3). Only five year-classes of pike were collected (Table 4). Pike growth in Loud Pond was considered slow when compared to statewide growth rates for this species. Both Smallmouth and Largemouth bass were found to be scarce in Loud Pond from the 1996 survey (Table 2). A few specimens of each species were larger than the statewide minimum size (14 inches). Despite not being stocked, a few Walleye were collected. These fish were likely transients from upstream river locations or from upstream Alcona Pond where Walleye were more common (from stocking and natural reproduction).

Non-game fish such as suckers, bullheads, Bowfin, and Common Carp made up a 40% of the survey catch by number and 84% by weight (Table 2). Some of these species were also likely products of upstream impoundments in the river system.

A fall assessment of juvenile and adult Walleye occurred at Loud Pond in September of 1996. The evaluation was done to assess if natural reproduction of this species was occurring in the upstream river reaches or in the pond itself. The impoundment shoreline was electrofished for four miles and over two

hours. Good numbers of age-0 Walleye were collected indicating a strong year-class of wild fish. In addition, good numbers of age-1 and age-2 Walleye were also collected. This documented that natural reproduction was likely contributing to the Loud Pond Walleye population.

An angler survey was made at Loud Pond from May 20 through September of 1999 to assess the fishery. The survey was coordinated and summarized by both the DNR and Huron Pines Resource Conservation and Development Council through grant dollars associated with Consumers Energy. Loud Pond angler hours for this period were over 12,000 while angler trips were nearly 3,000. Species harvest (Table 5) was dominated by Bluegill and Yellow Perch. Fish species caught and released the most were Bluegill, Smallmouth Bass, Yellow Perch, and Rock Bass. Most of the species documented in catches were reflective of a warm- to coolwater fish community.

### **Current Status**

The most recent general fish community survey in Loud Pond occurred in 2008. The survey was done by the DNR under the statewide Status and Trends survey protocol where sampling effort is a product of lake acreage. Sampling effort in early May consisted of 9 large-mesh fyke-net nights, 2 small-mesh fyke-net nights, 3 mini-fyke net nights, 3 trap-net nights, and 6 inland gill-net nights. Water temperature during the survey period ranged from 51-55F.

A total of only 242 fish were collected during the 2008 survey with a total estimated weight of 532 pounds (Table 6). Panfish made up 20% of the catch by number and 2% by weight, compared to 56% and 9%, respectively, in the 1996 survey. It should be noted that the recent survey was completed a month earlier and in colder water temperatures compared to the 1996 survey, so panfishes may have not yet moved into shallower habitats and thus been less vulnerable to nets set there. The colder water temperatures could have accounted for lower catches. Most Bluegill and Pumpkinseed in 2008 were 7 inches or less (Table 7) while most Yellow Perch were 8 inches or less.

Predator game fish including Northern Pike, Largemouth and Smallmouth bass, and Walleye were collected in low numbers, comprising 17% of the total catch number and 20% by weight. This was relatively high though compared to 3% and 4%, respectively, in 1996. Pike were the most abundant predator with 24% legal size (24 inches or larger). Six year-classes of Northern Pike were present (Table 4) and growth was slightly below the statewide average for this species. Based on length-at-age data, it takes a Loud Pond pike 4-5 years to reach legal size. Both species of bass were collected in low numbers, but some legal-sized bass (14 inches or larger) were present. Four year-classes of Walleye were collected (Table 4) but overall few were collected in the survey.

Non-game fish such as bullheads, suckers, Bowfin, and Common Carp were again the most abundant group of fish. They comprised 61% of the total catch number and 77% by weight. This was compared to 40% and 84%, respectively, in 1996.

### **Analysis and Discussion**

The Loud Pond fish community and limnology can be characterized as having the following: 1) an average to slow-growing panfish community consisting primarily of Bluegill, Pumpkinseed, Rock Bass, and Yellow Perch. None of these species are considered abundant based on survey catches and when compared to other regional lakes, and fish of older age groups are scarce likely a result of habitat and

water temperatures rather than harvest; 2) a predator population that is low in abundance and consisting of Northern Pike, Smallmouth and Largemouth bass, and Walleye. Northern Pike are the top predator in Loud Pond and have average to slightly below average growth rates when compared to the statewide average. Most pike are less than legal size (24 inches or larger), but acceptable numbers of legal-size fish are present. Smallmouth and Largemouth bass are not common, based on survey catches. Despite this, anglers do target both species, particularly Smallmouth Bass, which can reach large sizes. Walleye numbers are generally lower in Loud Pond compared to other regional waterbodies where fish are, or were, stocked. Walleye in Loud Pond are likely transients from upstream populations; 3) an abundant non-game fish community consisting of suckers, bullheads, Bowfin, and Common Carp; 4) a lake chemistry profile which is typical for warmwater and coolwater species, and has limited thermal stratification in the summer. Loud Pond and some other Au Sable River impoundments have limited potential due to high flushing rates which keep them from ever approaching the productivity of a typical lake.

Stocking efforts for Great Lakes Muskellunge fall fingerlings were prescribed for Loud Pond over a decade ago. Due to limited statewide production of fall fingerlings, Fisheries Division made the decision to focus fall fingerling stocking efforts on one Au Sable impoundment (Cooke Pond). A stocking prescription currently exists for Muskellunge for Loud Pond, but it requests surplus spring fingerlings. This stocking was first accomplished in August 2019. The stocking event was done at the boat launch site adjacent to the dam. Coincidentally, many of these fingerlings were observed below Loud Dam in the river itself the following day. Stocking adjacent to the dam may lead to entrainment of fish in the dam, and loss of surviving stocked fish downstream.

Survey efforts at this impoundment have been limited. The riverine nature of the impoundment and limited littoral zone make it a challenge to survey fish populations with traditional survey gear.

### **Management Direction**

1. The standard State of Michigan fishing regulations (bag limits and size limits) for game fish are appropriate.
2. Prior to future Muskellunge stocking events, an alternate stocking location apart from the dam should be explored. If DNR production is increased for fall fingerlings, then Loud Pond would be a good candidate for receiving additional Muskellunge.
3. Anglers of Loud Pond should share their catch information with fisheries managers. This allows for a more complete understanding of the fishery and likely will result in better management of the lake in the future.
4. Utilize best available fish population assessment techniques for this impoundment. Traditional survey gear deployment has not resulted in efficient capture of a variety of fish species. Perhaps innovative approaches, or more narrow gear choices are appropriate for Loud Pond to assess fish populations in the future, especially when conducting stocking evaluations.
5. Loud Pond offers limited value for the fishery as an impoundment. Efforts should be made to foster relationships to restore the high-quality river environment that could exist following potential dam removal.

### **References**

Zorn, T.G., and S.P. Sendek. 2001. Au Sable River Assessment. Michigan Department of Natural Resources, Fisheries Division, Special Report 26, Ann Arbor, Michigan.

Figure 1.-Location of Loud Pond in the northern Lower Peninsula of Michigan.

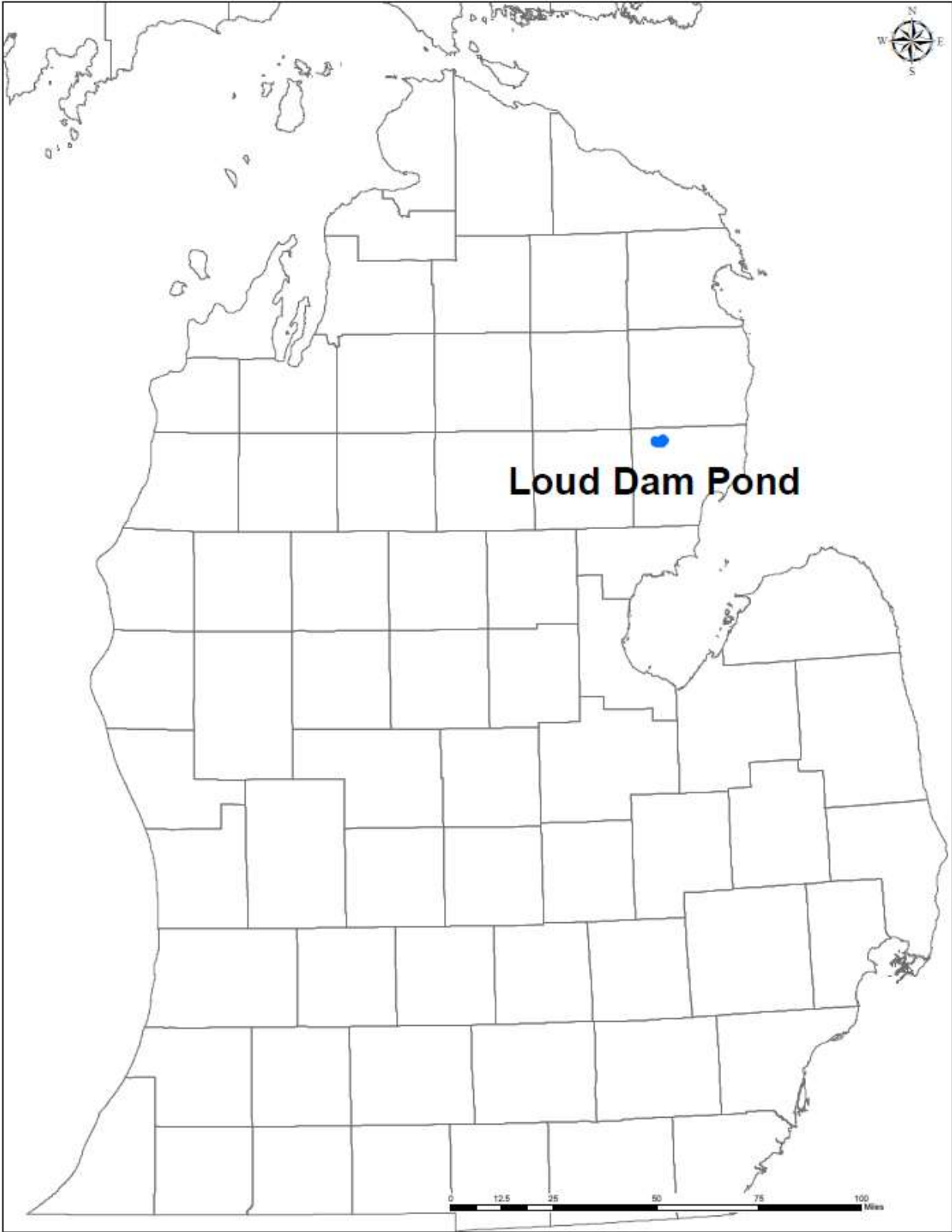


Figure 2.-Map of Loud Pond and its surrounding area.



Table 1.-Recent stocking history of Muskellunge for Loud Pond by the Department of Natural Resources.

Year	Species	Strain	Length (in)	No. Stocked
2006	Muskellunge	Northern	9.5-10.7	3,784
2010	Muskellunge	Northern	9.5	3,749
2019	Muskellunge	Great Lakes	3.7	28,590

Table 2.-Fish collected from Loud Pond June 10-13, 1996 by DNR with small- and large-mesh fyke-nets, and experimental gill nets. Weight was estimated from Michigan length-weight relationships.

Species	Total Catch	Percent by number	Weight (lbs)	Percent by weight	Length range (in)
Pumpkinseed	268	22.8	48.7	3.3	3-7
Rock Bass	219	18.6	49.6	3.4	1-11
Brown Bullhead	167	14.2	140.9	9.5	5-13
Bluegill	117	9.9	25.9	1.8	2-8
Yellow Bullhead	80	6.8	54.4	3.7	6-13
White Sucker	69	5.9	203.1	13.7	10-21
Golden Redhorse	64	5.4	317.9	21.5	15-25
Bowfin	56	4.8	343.5	23.2	20-28
Yellow Perch	51	4.3	11.3	0.8	4-13
Northern Pike	24	2.0	51.4	3.5	10-30
Redhorse sp.	22	1.9	98.4	6.7	18-25
Greater Redhorse	14	1.2	71.5	4.8	19-24
Largemouth Bass	8	0.7	17.9	1.2	13-16
Green Sunfish	6	0.5	0.6	0.0	4
Black Crappie	3	0.3	3.9	0.3	12-13
Walleye	3	0.3	11.8	0.8	19-25
Common Carp	2	0.2	22.3	1.5	24-30
Smallmouth Bass	2	0.2	4.8	0.3	14-18
Golden Shiner	1	0.1	0.0	0.0	4
<b>Total</b>	<b>1,176</b>		<b>1,477.9</b>		



Table 3.-Length-frequency of certain game fish collected during the June 1996 Loud Pond survey. Black bass are both Largemouth and Smallmouth bass.

Length group (in)	Black Crappie	Bluegill	Pumpkinseed	Yellow Perch	Black Bass	Northern Pike	Walleye
<5		24	68	6			
5-5.9		18	62	8			
6-6.9		34	115	8		1	
7-7.9		35	23	12			
8-8.9		6		14			
9-9.9				1			
10-10.9						1	
11-11.9							
12-12.9	1				2		
13-13.9	2			2		1	
14-14.9					1	3	
15-15.9					3		
16-16.9					3	1	
17-17.9						1	
18-18.9					1	3	
19-19.9						1	2
20-20.9						4	
21-21.9						1	
22-22.9						1	
23-23.9							
24-24.9						2	
25-25.9							1
26-26.9							
27-27.9						1	
28-28.9							
29-29.9							
30-30.9						3	

Table 4.-Comparison of mean length (inches) at age for various game fishes of Loud Pond from 1996 and 2008. Number in parentheses represents number aged. The growth index is the average growth for each species at the pond in 2008 compared to the statewide average for that species across ages (if sample size was adequate).

<b>Species</b>	<b>Age group</b>	<b>June 1996</b>	<b>May 2008</b>	<b>Growth Index (in)</b>
Black Crappie	I	--	--	--
	II	--	--	
	III	--	--	
	IV	--	--	
	V	--	--	
	VI	12.1 (1)	--	
	VII	--	--	
	VIII	13.5 (2)	--	
Bluegill	I	--	--	+0.5
	II	3.2 (7)	--	
	III	5.3 (19)	4.6 (1)	
	IV	6.8 (6)	6.3 (3)	
	V	7.3 (15)	7.4 (8)	
	VI	7.3 (3)	7.4 (6)	
	VII	8.3 (1)	7.8 (3)	
Pumpkinseed	I	--	--	--
	II	3.2 (2)	--	
	III	5.0 (26)	4.3 (2)	
	IV	6.0 (2)	5.2 (1)	
	V	6.6 (15)	--	
	VI	7.1 (2)	6.7 (2)	

Table 4.-Continued.

<b>Species</b>	<b>Age group</b>	<b>June 1996</b>	<b>May 2008</b>	<b>Growth Index (in)</b>
Yellow Perch	I	--	--	--
	II	5.3 (5)	--	
	III	6.6 (14)	7.8 (1)	
	IV	7.4 (11)	8.3 (3)	
	V	8.2 (3)	8.6 (4)	
	VI	8.9 (3)	--	
	VII	--	8.1 (1)	
	VIII	--	--	
	IX	13.0 (2)	--	
Rock Bass	I	--	--	
	II	3.3 (3)	--	
	III	4.7 (16)	5.1 (3)	
	IV	5.5 (5)	5.6 (4)	
	V	6.8 (23)	5.7 (4)	
	VI	7.2 (12)	6.8 (3)	
	VII	8.9 (1)	8.6 (3)	
	VIII	9.1 (2)	--	
	IX	9.9 (2)	--	
	X	10.6 (2)	--	
Largemouth	I	--	--	--
Bass	II	--	--	
	III	--	--	
	IV	12.6 (2)	--	
	V	15.8 (3)	--	
	VI	16.0 (1)	15.0 (3)	
	VII	16.0 (1)	15.8 (3)	
	VIII	--	17.5 (2)	

Table 4.-Continued.

Species	Age group	June 1996	May 2008	Growth Index (in)
Northern Pike	I	10.5 (3)	--	-0.6
	II	17.6 (6)	15.0 (7)	
	III	19.7 (4)	21.4 (7)	
	IV	21.9 (4)	22.4 (4)	
	V	29.4 (3)	25.7 (5)	
	VI	--	25.7 (1)	
	VII	--	37.8 (1)	
Smallmouth	I	--	--	--
Bass	II	--	--	
	III	--	--	
	IV	--	--	
	V	14.9 (1)	13.9 (1)	
	VI	--	14.4 (2)	
	VII	18.1 (1)	15.0 (2)	
	VIII	--	--	
	IX	--	17.7 (1)	
	Walleye	I	--	--
	II	--	--	
	III	--	--	
	IV	--	--	
	V	19.1 (2)	18.0 (1)	
	VI	--	21.5 (1)	
	VII	--	--	
	VIII	--	--	
	IX	--	21.2 (1)	
	X	--	--	
	XI	--	24.1 (1)	

Table 5.-Creel survey statistics for Loud Pond from May 20 through September 30, 1999. The field data was collected by Huron Pines RCD and summarized by DNR.

Species	Harvest	Catch and Release
Bluegill	3,828	3,552
Sunfish species	165	53
Black Crappie	0	17
Yellow Perch	939	818
Rock Bass	322	808
Largemouth Bass	8	202
Smallmouth Bass	39	1,458
Northern Pike	44	495
Walleye	180	278
Trout species	24	5
White Sucker	25	25
Redhorse sucker sp.	21	23
Bullhead sp.	0	8
Common Carp	0	5

Table 6.-Fish collected from Loud Pond May 5-8, 2008 by DNR as part of the Status and Trends fish survey program.

Species	Total Catch	Percent by number	Weight (lbs)	Percent by weight	Length range (in)
Brown Bullhead	69	28.5	56.0	10.5	4-14
Bowfin	41	16.9	228.9	43.0	18-28
Northern Pike	25	10.3	65.8	12.4	14-37
Bluegill	21	8.7	6.0	1.1	4-8
White Sucker	15	6.2	41.7	7.8	17-20
Rock Bass	14	5.8	3.1	0.6	4-9
Golden Redhorse	13	5.4	37.0	7.0	12-26
Yellow Perch	9	3.7	2.5	0.5	7-10
Largemouth Bass	8	3.3	18.3	3.4	14-19
Greater Redhorse	7	2.9	30.0	5.6	17-25
Smallmouth Bass	6	2.5	10.7	2.0	13-17
Pumpkinseed	5	2.1	0.9	0.2	4-7
Walleye	4	1.7	13.4	2.5	18-24
Black Bullhead	3	1.2	2.7	0.5	11-13
Common Carp	1	0.4	15.1	2.8	32
Golden Shiner	1	0.4	0.0	0.0	4
<b>Total</b>	<b>242</b>		<b>532.1</b>		

Table 7.-Length-frequency of certain game fish collected during the early-May 2008 Loud Pond survey. Black bass are both Largemouth and Smallmouth bass.

<b>Length group (in)</b>	<b>Bluegill</b>	<b>Pumpkinseed</b>	<b>Yellow Perch</b>	<b>Black Bass</b>	<b>Northern Pike</b>	<b>Walleye</b>
<5	1	2				
5-5.9	1	1				
6-6.9	4	1				
7-7.9	11	1	1			
8-8.9	4		7			
9-9.9						
10-10.9			1			
11-11.9						
12-12.9						
13-13.9				1		
14-14.9				3	4	
15-15.9				1	1	
16-16.9					1	
17-17.9				1	1	
18-18.9						1
19-19.9					1	
20-20.9					1	
21-21.9					4	2
22-22.9					4	
23-23.9					2	
24-24.9						1
25-25.9					3	
26-26.9					1	
27-27.9						
28-28.9					1	
29-29.9						
30-30.9						
31-31.9						
32-32.9						
33-33.9						
34-34.9						
35-35.9						
36-36.9						
37-37.9					1	