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FILE REF: [Click [here](#) and type file ref.]TO: Mike Donofrio  
Becker Lake FileFROM: Steve Hogler  
Steve Surendonk

SUBJECT: 2011 Survey Report for Becker Lake, Calumet County

Becker Lake is a 31 acre, 53 foot deep lake located in the northeast corner of Calumet County. The lake is partially drained and is considered highly productive. Land use in the surrounding watershed is primarily agricultural. It is likely that the surrounding land use in the Becker Lake Watershed has contributed to the numerous algae blooms and fish kills that have occurred on Becker Lake since the 1960's. The most recent fish kills were in 2003, 2007 and 2010. Following the fish kill in 2010, DNR and a local Sportsmen Club began restocking the lake in 2011 (Table 1).

**Table 1. Fish stocking in Becker Lake following the 2010 fish kill.**

Year	Species	Number	Average Length
2011	BLUEGILL	1,499	4
2011	FATHEAD MINNOW	30,000	2
2011	LARGEMOUTH BASS	1,597	3
2011	NORTHERN PIKE	3,553	4
2011	YELLOW PERCH	1,000	5

Past fisheries surveys have found that the fish population of the lake was dominated by largemouth bass, northern pike and bluegill. Other species that have been noted in past surveys include yellow bass, pumpkinseed sunfish, black crappie, yellow perch, white sucker, bullhead and carp. The last fish survey that was not associated with a fish kill occurred in 1998 when the entire shoreline was electroshocked at night. Bluegill dominated the catch followed by yellow bass and largemouth bass. No northern pike were seen or captured. Most of the bluegill were small in size and averaged 103 mm in length. The majority of largemouth bass that were captured were young of year and only a few large bass were collected in the sample. Despite the fish kills, Becker Lake remained a popular destination for anglers.

On the night June 1, 2011, Becker Lake was surveyed as part of Tier 1 lake monitoring. During the 60 minutes of shocking, the entire 0.857 mile shoreline of the lake was surveyed and 177 individual fish representing 5 species were captured (Table 2). Total CPE was 177 fish/ hour shocked or 207 fish per mile shocked. Black bullhead dominated our catch followed by golden shiner. Other species were captured in lower numbers.

**Table 2. The number of fish captured during electroshocking on Becker Lake June 1, 2011 by species. Catch Per Effort (CPE) is expressed as fish per hour shocked or as fish per mile shocked.**

Species	Number	CPE Fish/Hour	CPE Fish/Mile
Black Bullhead	92	92	107.4
Golden Shiner	40	40	46.7
Common Carp	19	19	22.2
Northern Pike	14	14	16.3
Black Crappie	8	8	9.3
Yellow Perch	2	2	2.3
Bluegill	1	1	1.2
Hybrid Sunfish	1	1	1.2
Total	177	177	206.5

We captured 14 northern pike although only 9 were measured. The measured northern pike ranged from 426 mm to 678 mm in length and had an average length of 506 mm (Table 3).

**Table 3. The length frequency of northern pike captured during electroshocking on Becker Lake.**

Length (mm)	Northern Pike
420	1
430	
440	1
450	
460	1
470	1
480	1
490	
500	
510	1
520	
530	2
540	
550	
560	
570	
580	
590	
600	
610	
620	
630	
640	
650	
660	
670	1
680	
Total	9
Ave. Length	<b>506</b>
S.D.	<b>74.8</b>

Four species of panfish were captured during our survey although none were abundant in number. Bluegill, yellow perch, black crappie and hybrid sunfish had average lengths of 114 mm, 137 mm, 117 mm and 122 mm respectively (Table 4).

Table 4. The length frequency of bullhead, panfish and minnow species captured during electroshocking on Becker Lake.

Length (mm)	Bluegill	Yellow Perch	Black Crappie	Hybrid Sunfish	Black Bullhead	Golden Shiner
80						1
90						4
100			2			9
110	1		1		1	1
120		1	5	1	2	3
130					3	
140					7	
150		1			12	1
160					12	
170					5	1
180						
Total	1	2	8	1	42	20
Ave. Length	114	137	117	122	154	111
S.D.	--	21.9	6.3	--	15.0	21.0

Black bullhead dominated our catch accounting for nearly 52% of our catch. Measured bullhead lengths ranged from 111 mm to 178 mm with an average length of 154 mm (Table 4).

Golden shiner and common carp were moderately abundant in our catch. Measured golden shiner ranged from 85 mm to 170 mm in length with an average length of 111 mm (Table 4). The common carp that we measured ranged in length from 228 mm to 660 mm and had an average length of 333 mm.

Results from this survey indicate that the 2010 fish kill was severe, although not a total kill based on the species captured and by the length of the northern pike. Some of the fish stocked in 2011 were likely captured in our survey, although bluegill and yellow perch numbers were very low. No stocked largemouth bass were captured during our survey indicating either poor survival or that they were not where we were shocking. Since the size of the stocked largemouth bass (3 inches) and northern pike (4 inches) was relatively small, better survival might occur if small numbers of larger predators were stocked.

The success or failure of restocking efforts will depend on the water quality of Becker Lake. If additional low oxygen events occur during succeeding winters, then stocking will not restore a desirable mix of fish species back into the lake. To achieve long term stability of a desirable mix of fish species, improvements in water quality in the lake will be necessary. To improve water quality in the lake, changes in the watershed that reduce sediment and phosphorus runoff into the lake will be required. Additional management actions may be required even with decreases of external phosphorus levels to ensure long term stability of the lake and its fish community.