Northern Pike from Parkers Lake, July, 2013

Fish Survey of Parkers Lake (ID #27-0107), City of Plymouth, Hennepin County, Minnesota in 2013

Survey Dates: July 23-24, 2013

MnDNR Permit Number: 19241

Prepared for:
City of Plymouth and MnDNR

Prepared by:
Steve McComas and Jo Stuckert
Blue Water Science
St. Paul, MN

December 2013

Fish Survey of Parkers Lake (ID #27-0107), City of Plymouth, Hennepin County, Minnesota in 2013

Introduction

Parkers Lake (ID: 27-0107) is a 97-acre shallow lake, located in Hennepin County, Minnesota. In July 2013, the City of Plymouth sponsored a fish survey conducted by Blue Water Science under permit number 19241 granted from the MnDNR. The objectives were to characterize the fish community in Parkers Lake.

Methods

Six standard trapnets were sampled for two days for a total of twelve lifts to survey fish in Parkers Lake. The trapnet was a MnDNR-style with a 4 x 6 feet square frame with two funnel mouth openings and 50-feet lead. Net mesh size was 3/8 inch. Six standard trap nets were set on Monday July 22, 2013. Six nets were fished for the following 2 days (July 23 and 24). Trapnet locations are shown in Figure 1 and pictures of a typical trapnet operation are shown in Figure 2.

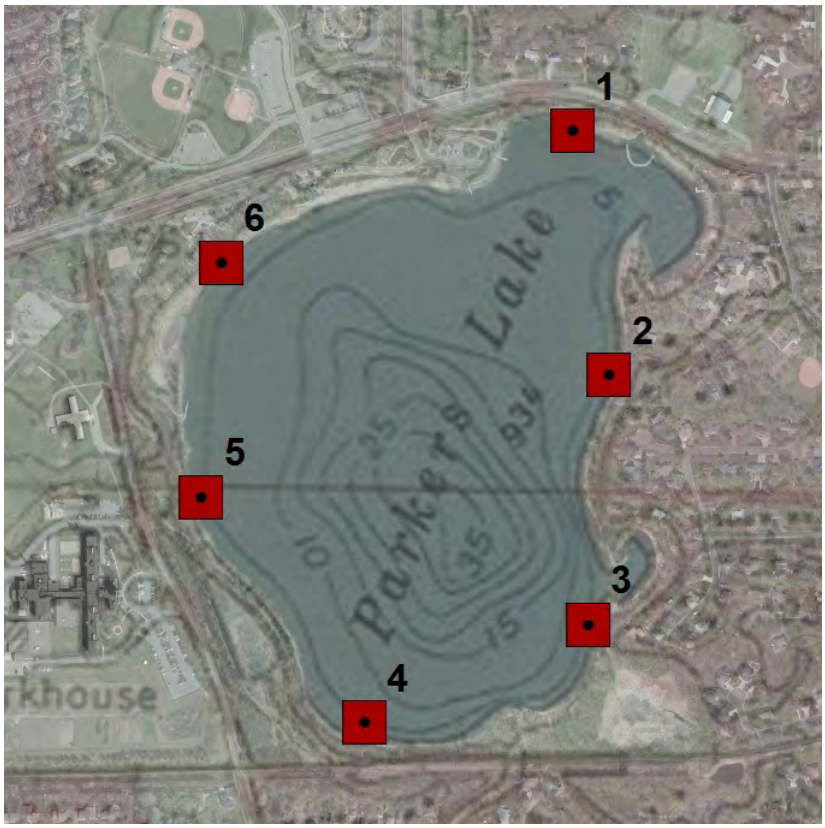

Figure 1. Map of trapnet sets in Parkers Lake.

A trapnet is a live fish trap. Fish run into the 50-foot lead net and follow it back through a series of hoops with funnel mouths. Fish end up in the back hoop.

A dip net is used to remove the fish from the back pocket of the trapnet.

Fish are transferred to tubs, then they are counted, measured, and released.

Figure 2. Trapnet set and fish sampling in the Parkers Lake fish survey.

Results

Fish Results: A total of nine fish species were sampled in Parkers Lake on July 23-24, 2013. Bluegill and pumpkinseed sunfish were the most abundant species followed by yellow bullheads. Nets 2 and 6, were the most productive (Table 1). The number of yellow bullheads caught per net was above the normal range with a haul of 13.2 fish per net (Table 1). In addition, pumpkinseed and green sunfish were found at above average numbers for a typical range for a lake like Parkers, as defined by the MnDNR. Only one Largemouth bass was captured throughout sampling, resulting in a catch-per-net less than the MnDNR average. Bluegill sunfish and black Crappie abundance was found to be within the average ranges based on data compiled by the MnDNR. Seven northern pike where captured in trapnets throughout the sampling regime ranging in size from 15.5 inches to 28 inches.

Turtle Results: Snapping turtles and painted turtles were also sampled in the trapnets and were common in Parkers Lake. Painted turtles and snapping turtles likely do well because there is a fair percentage of a natural shoreline area.

Table 1. Parkers Lake trapnet results for the fish survey conducted in July 2013.

	Fish Captured (July 23-24 2013)												Total Catch	Fish per Net (n=12)	Normal Range (MnDNR)
	Net 1		Net 2		Net 3		Net 4		Net 5		Net 6				
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2			
Black bullhead (*Ameiurus melas*)				1			1						2	0.2	2.2 - 60.5
Black crappies *(Pomoxis nigromaculatus*)	1	1	7	4	5		1	1	11	4	1		36	3.0	1.9-18.0
Bluegill sunfish (*Lepomis macrochirus*)	9	2	34	121	39	3	10	25	66	16	92	40	457	38.1	6.5-59.6
Green Sunfish (*Lepomis cyanellus*)			1	1							19	25	46	3.8	0.3-2.0
Hybrid Sunfish (*Lepomis sp*)				27	2	3	1	5	2		6	2	48	4.0	--
Largemouth bass (*Micropterus salmoides*)			1										1	0.1	0.3-0.8
Pumpkinseed sunfish (*Lepomis gibbosus*)	1	2	94	89	12	3	9	15	23	2	36	13	299	24.9	0.8-5.3
Northern Pike *(Esox lucius)*			1		3	1			1	1			7	0.6	--
Yellow bullheads *(Ameiurus natalis*)		2	57	29	6		7	18	14	16	9		158	13.2	0.8-5.0
TOTAL FISH	11	7	195	272	67	10	29	64	117	39	163	80	1054	87.8	
Turtles - painted	6	0	3	0	2	1	0	0	0	0	6	0	18	1.5	
Turtles - snapping	2	1	0	0	2	0	1	1	0	0	2	2	11	0.9	

Fish Lengths: Fish lengths are shown in Figure 3 and Table 2. Bluegill sunfish lengths ranged from 3 inches up to 8 inches with a relatively even distribution. Green and hybrid sunfish although increasing their abundance since last being surveyed, still have a low average length. The black crappie lengths show a strong year class in the 7-8 inch range, a good sign. Yellow bullheads where large and could be acting a predator to young-of-the-year (yoy) fish. Northen Pike lengths ranged from 15.5- 28 inches.

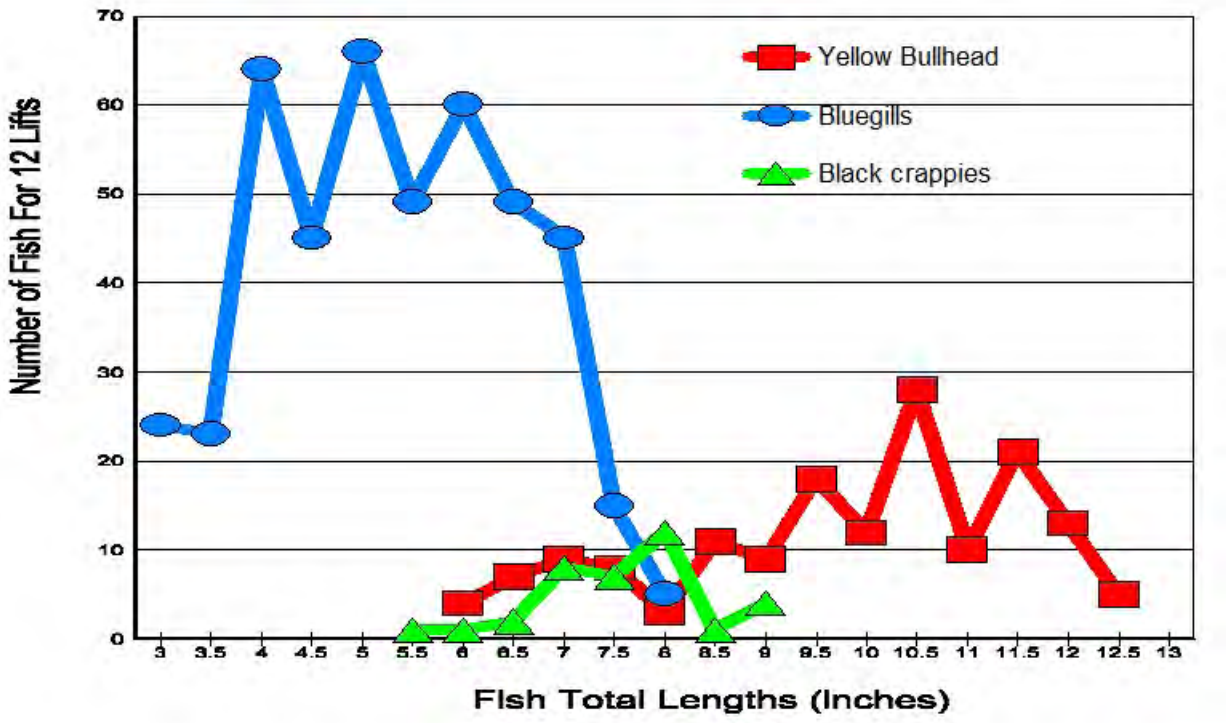

Figure 3. Length distribution of black crappies, yellow bullheads, and bluegill sunfish from the July 2013 survey in Parkers Lake.

Figure 4. Northern pike was the dominant predator found in Parkers Lake in July 2013.

Table 2. Length frequency of fish species (as total length) for the Parkers Lake fish survey.

Size (inches)	Black crappies	Bluegills	Green sunfish	Hybrid sunfish	Largemouth Bass	Northern Pike	Pumpkinseed	Yellow Bullhead
<3		12 (3%)	20 (44%)					
3		24 (5%)	4 (9%)	1 (2%)			5 (2%)	
3.5		23 (5%)	8 (18%)	2 (4%)			2 (1%)	
4		64 (14%)	6 (13%)	1 (2%)			20 (7%)	
4.5		45 (10%)	3 (6%)	5 (10%)			25 (8%)	
5		66 (14%)	2 (4%)	3 (6%)			33 (11%)	
5.5	1 (3%)	49 (11%)	1 (2%)	11 (23%)			35 (12%)	
6	1 (3%)	60 (13%)	1 (2%)	8 (16%)			70 (23%)	
6.5	2 (6%)	49 (11%)		11 (23%)			48 (16%)	4 (3%)
7	8 (22%)	45 (10%)	1 (2%)	6 (12%)			49 (16%)	7 (4%)
7.5	7 (19%)	15 (3%)					9 (3%)	9 (6%)
8	12 (33%)	5 (1%)					3 (1%)	8 (5%)
8.5	1 (3%)							3 (2%)
9	4 (11%)							11 (7%)
9.5								9 (6%)
10								18 (11%)
10.5								12 (7%)
11								28 (18%)
11.5								10 (6%)
12								21 (13%)
12.5								13 (8%)
13								5 (3%)
13.5								
14								
14.5								
15								
15.5						1 (14%)		
16						1 (14%)		
16.5								
17					1 (100%)	1 (14%)		
18								
19								
20						1 (14%)		
25						1 (14%)		
26								
27						1 (14%)		
28						1 (14%)		
Number of fish caught	36	457	46	48	1	7	299	158

Representative Fish Species of Parkers Lake

Largemouth Bass

Northern Pike

Bluegill

Yellow Bullhead

Pumpkinseed

Hybrid Sunfish (left) and Pumpkinseed (right)

Black Crappie

Snapping Turtle

Comparison of 2007 Survey to the 2013 Survey for Parkers Lake

Parkers Lake was last surveyed in 2007. Both surveys (2007 and 2013) are shown in Table 3. Minor shifts may have occurred over the last 20 years. Bluegill abundance has decreased since 2007, while yellow bullhead and pumpkinseeds sunfish have seen a increase in abundance. Northen Pike, the main predator fish in Parkers lake, sampled well in the trapnet (2013) and appear to be maintaining good size distribution.

Table 3. Historical trapnet fish survey records.

	Trapnet Results		
	Fish per net 2007 (MnDNR)	Fish per Net (n=12) 2013 (BWS)	Normal Range (MnDNR)
Black Crappie	1.3	3.0	1.9 - 18.0
Bluegills	312	38.1	6.5 - 59.6
Black Bullhead	--	0.2	2.2 - 60.5
Green sunfish	0.9	3.8	0.3 - 2.0
Hybrid Sunfish	3.1	4.0	--
Largemouth bass	0.1	0.1	0.3 - 0.8
Northern pike *(Trapnet)*	0.3	0.6	--
Northern pike *(Gillnet)*	20.2	--	1.8 - 3.3
Pumpkinseed	0.4	24.9	0.8 - 5.3
Yellow Bullhead	5.0	13.2	0.8 - 5.0
Turtles - painted	--	1.5	--
Turtles - snapping	--	0.9	--
TOTAL FISH	343.3	87.9	--
Number of Fish Species	8	9	--

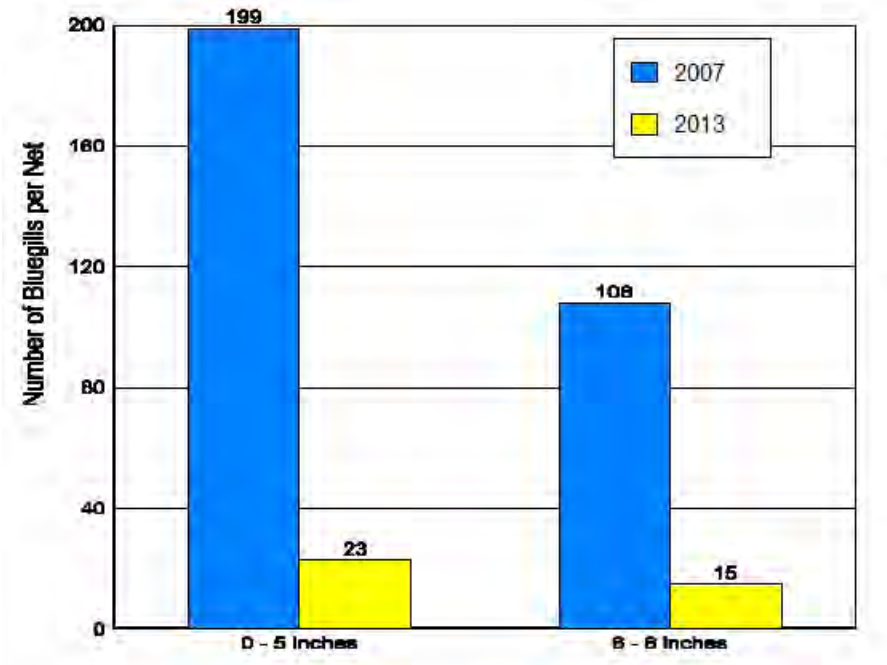

Figure 5. Bluegill densities have changed significantly between 2007 and 2013.

Discussion

General Findings In This Survey: Parkers Lake has the potential for good panfish fishing based on the size of black crappies and the number of bluegills found in this survey. For some reason, pumpkinseed sunfish are found in numbers above the regional range.

Adult yellow bullheads had a range of lengths with the 10 to 12-inch length the most common. Adult bullheads were probably not stunted since a community dominated by 6-8-inch bullheads are typically associated with stunting.

The top predator in Parkers Lake is the northern pike. However, additional predation pressure is likely applied to young fish by crappies and yellow bullheads.

Figure 6. Net results from one net sampled in Parkers Lake in July 2013.

Discussion - concluded

Gamefish Control to Prevent Bluegill Stunting: The existing top predator of the fish community in Parkers Lake is the northern pike. To prevent the development of stunted sunfish and bullhead populations predation pressure is essential. Based on theoretical piscivore lengths and converting fish length to gape width (Figure 8) it appears that the northern pike lengths in Parkers Lake, when converted to gape widths, will likely exert some predation pressure to prevent stunted bluegill (typical around 4-inches) or yellow bullhead populations.

Figure 7. Gamefish (piscivores) usually select prey that can be swallowed, which is a function of the piscivore gape verses the prey body depth. This 24-inch northern pike from White Bear Lake made a mistake. It attempted to ingest a seven inch bluegill. The 24-inch pike has a 2.0 inch gape, but a 7-inch bluegill has a body depth of 2.3 inches. This pike was found floating and basically choked on the bluegill.

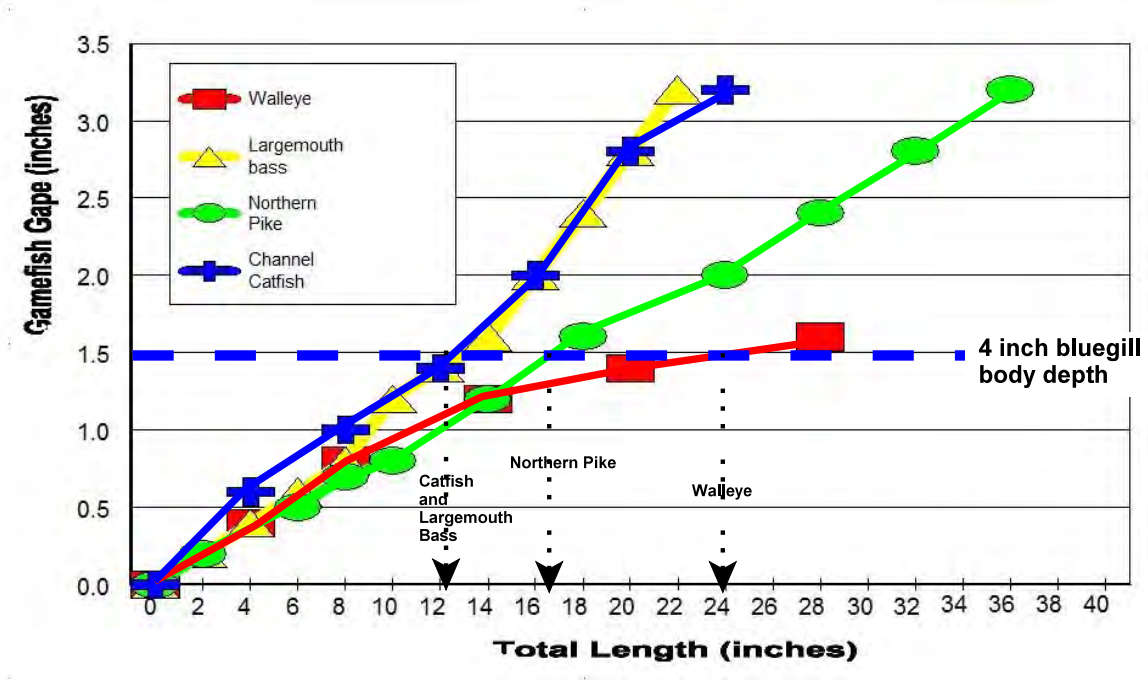

Figure 8. Gamefish gape increases as a function of it's total length. The gape determines the size of the prey fish that can be swallowed. For example, a 4-inch bluegill has a body depth of 1.5 inches. To ingest a 4-inch bluegill it would take a 12-inch bass that has a gape of 1.5 inches. There are few bass in Parkers Lake that could ingest a 4-inch bluegills.

Conclusions and Recommendations

The trapnet survey in 2013 found the fish community was composed of nine species. The crappie and bluegill abundance were average for trapnet catches. Green sunfish, pumpkinseed sunfish, and yellow bullheads were above average in abundance.

Recommendations and future considerations include the following:

- The young fish should produce an adequate a forage base on an annual basis. The carrying capacity of Parkers Lake will likely be established naturally which is a good long-term management strategy.
- Stocking adult largemouth bass could possibly help control bluegills and add to the sport fishery.
- However, at the present time, fish do not appear to be adversely impacting water quality and northern pike are found in high abundance.
- In four to five years another fish survey should be conducted to evaluate conditions and re-evaluate recommendations.

Figure 9. Three northern pike sampled on July 23, 2013 in Parkers Lake.

Appendix A

Minnesota DNR Fish Survey Notification

From: Steve McComas [mailto:mccomas@pclink.com]
Sent: Friday, July 19, 2013 2:40 PM
To: Daryl Ellison ; Greg Salo
Cc: Derek Asche
Subject: Fish survey notification

Hello all,

Blue Water Science will be conducting a fish survey in Parkers Lake (MN ID 27-107), Hennepin County, starting on Monday, July 22. We will set 6 fyke nets on Monday. The nets will be monitored daily on Tuesday and Wednesday and all fish will be weighed and measured and returned to the lake. The nets will be removed from the lake on Wednesday, July 24. The fish survey is sponsored by the City of Plymouth with the objective to check for changes in the fish community structure since the last MnDNR survey and determine if fish may have an impact on lake water quality.

This survey is being conducted under the permit number: 19241.

Steve McComas
BLUE WATER SCIENCE
550 South Snelling Avenue
St. Paul, MN 55116
651 690 9602
mccomas@pclink.com

Appendix B

Minnesota DNR Fish Survey - 2007

Minnesota Department of Natural Resources

Fisheries Management

STANDARD LAKE SURVEY REPORT

Lake Name: Parkers | **Survey Type: Population Assessment**

DOW Number: 27-0107-00 | **Survey ID Date: 06/11/2007**

Lake Identification

Alternate Lake Name: N/A
Primary Lake Class ID: 30
DNR Sounding Map Number: C1342
Alternate Lake Class ID: N/A

Lake Location

Primary County: Hennepin
Nearest Town: Plymouth

Legal Descriptions

Lake Center: Township - 118N Range - 22W Section - 28
PLS Section Lake Center: 11802228

All Legal Descriptions:

Hennepin County: Township - 118N Range - 22W Sections - 28, 33

Area Office

Area Name: Metro West
Region Name: Central
ORG Code: F314
Region Number: 3

Lake Access

(Information based on Re-Survey dated 06/05/1995)

Station ID	Ownership	Public Use	Type	Location / Comments

(Data excludes records where public use is not designated or is designated "No Public Use")

Lake Characteristics

Lake Area (planimetered acres): 97.10
GIS Lake Area (acres): 100.17
DOW Lake Area (acres): 96.00
Littoral Area (acres): 67.70
Area in MN (acres): 100.17
Maximum Depth (feet): 37.0
Mean Depth (feet): 12.0
GIS Shoreline Length (miles): 1.75
Maximum Fetch (miles): 0.53
Fetch Orientation (degrees): 360
USGS Quad Map Number: S16b
USGS Quad 24K GIS Index: 3631

Watershed Characteristics

Major Watershed

Name: Mississippi River-TC
Watershed Number: 20
Watershed size (acres): 644,320

Minor Watershed

Name: unknown DNR Minor Wshd
Watershed Number: 97
Watershed size (acres): 6,472

Surveys And Investigations

Initial Survey: 08/07/1975.
Re-Survey: 06/05/1995, 06/10/1985.
Population Assessment: 06/11/2007, 06/12/2001, 06/10/1991, 06/23/1980.

Dissolved Oxygen And Temperature Profile Of Lake Water

Station ID	Sampling Date	Bottom Depth (Feet)	Sample Depth (Feet)	Water Temperature (°F)	Dissolved Oxygen (ppm)
WQ - 1	06/11/2007	36.8	Surface	71.1	7.7
			2.0	70.9	7.8
			4.0	70.9	7.7
			6.0	70.0	7.5
			8.0	69.4	5.7
			10.0	68.9	5.6
			12.0	68.5	4.8
			14.0	67.8	4.6
			16.0	66.0	4.5
			18.0	61.2	4.9
			20.0	55.6	5.6
			22.0	52.0	6.2
			24.0	49.6	6.7
			26.0	47.3	6.4
			28.0	45.3	3.3
			30.0	44.2	1.6
			32.0	43.5	0.4
			34.0	43.2	0.3
			36.0	43.0	0.3
			37.0	43.0	0.2

Field Measurements Of Water Quality

Station ID	Sampling Date	Sample Depth (Feet)	Secchi Depth (Feet)	Field pH	Alkalinity (ppm)	Water Color	Color Cause
WQ - 1	06/11/2007	Surface	11.5	N\A	N/A	Lt Brown	N/A
				Color Description:		Tanic Staind	

Laboratory Analysis Of Water Chemistry

Station ID	Sampling Date	Analysis Date	Sample Depth (ft)	Chemical Parameter	Chemical Value
WQ - 1	06/11/2007	07/13/2007	Surface	Total phosphorus	0.077 ppm
				Total alkalinity	110 ppm
				Total dissolved solids	380 ppm
				Chlorophyll-a trichromatic method calculation	8.2 ppb
				Conductivity	688 :S/cm
				pH	8.65 pH

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 6
First Set Date: 06/11/2007
Last Lift Date: 06/14/2007
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 30* 25%	50%	75%
BLC	Black Crappie	8	1.33	1.88	6.25	18.00
BLG	Bluegill	118	19.67	N/A	N/A	N/A
NOP	Northern Pike	121	20.17	2.50	5.00	7.94
YEB	Yellow Bullhead	48	8.00	1.00	2.50	6.88
		Total Fish/Set:	49.17	* Quartiles for Number Per Set		

Net Catch Summary by Weight for GN

Standard gill net sets

Abbr	Species	Total Weight (Pounds)	Pounds Per Set	Mean Weight	Quartiles for Lake Class 30* 25%	50%	75%
BLC	Black Crappie	1.64	0.27	0.20	0.11	0.18	0.25
BLG	Bluegill	23.73	3.96	0.20	N/A	N/A	N/A
NOP	Northern Pike	330.34	55.06	2.73	1.76	2.47	3.30
YEB	Yellow Bullhead	37.98	6.33	0.79	0.37	0.50	0.67
		Total Pounds Fish/Set:	65.62		* Quartiles for Mean Weight		

Net Catch Summary by Numbers for TN

Standard 3/4-in mesh, double frame trap net sets

Number of Sets: 8
First Set Date: 06/11/2007
Last Lift Date: 06/14/2007
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 30* 25%	50%	75%
BLG	Bluegill	2,497	312.13	6.54	24.60	59.60
GSF	Green Sunfish	7	0.88	0.25	0.50	2.00
HSF	Hybrid Sunfish	25	3.13	N/A	N/A	N/A
LMB	Largemouth Bass	1	0.13	0.25	0.40	0.75
NOP	Northern Pike	2	0.25	N/A	N/A	N/A
PMK	Pumpkinseed	3	0.38	0.80	2.00	5.33
YEB	Yellow Bullhead	40	5.00	0.75	1.61	5.00
		Total Fish/Set:	321.88	* Quartiles for Number Per Set		

Net Catch Summary by Weight for TN

Standard 3/4-in mesh, double frame trap net sets

Abbr	Species	Total Weight (Pounds)	Pounds Per Set	Mean Weight	Quartiles for Lake Class 30* 25%	50%	75%
BLG	Bluegill	291.08	36.38	0.12	0.11	0.15	0.23
GSF	Green Sunfish	0.43	0.05	0.06	0.07	0.10	0.12
HSF	Hybrid Sunfish	5.25	0.66	0.21	N/A	N/A	N/A
LMB	Largemouth Bass	0.15	0.02	0.15	0.15	0.36	1.13
NOP	Northern Pike	2.32	0.29	1.16	N/A	N/A	N/A
PMK	Pumpkinseed	0.26	0.03	0.09	0.08	0.11	0.16
YEB	Yellow Bullhead	31.43	3.93	0.79	0.40	0.53	0.71
	Total Pounds Fish/Set:		41.37		* Quartiles for Mean Weight		

Length Frequency Distribution For GN

Standard gill net sets

(Field work conducted between 06/11/2007 and 06/14/2007)

	BLC	BLG	NOP	YEB
< 3.00	-	1	-	-
3.00 - 3.49	-	-	-	-
3.50 - 3.99	-	1	-	-
4.00 - 4.49	-	4	-	-
4.50 - 4.99	-	6	-	-
5.00 - 5.49	-	3	-	-
5.50 - 5.99	-	7	-	-
6.00 - 6.49	2	24	-	-
6.50 - 6.99	1	45	-	-
7.00 - 7.49	1	26	-	-
7.50 - 7.99	2	1	-	-
8.00 - 8.49	1	-	-	-
8.50 - 8.99	1	-	-	1
9.00 - 9.49	-	-	-	3
9.50 - 9.99	-	-	-	2
10.00 - 10.49	-	-	-	7
10.50 - 10.99	-	-	-	13
11.00 - 11.49	-	-	-	5
11.50 - 11.99	-	-	-	5
12.00 - 12.99	-	-	-	10
13.00 - 13.99	-	-	-	2
14.00 - 14.99	-	-	-	-
15.00 - 15.99	-	-	-	-
16.00 - 16.99	-	-	-	-
17.00 - 17.99	-	-	4	-
18.00 - 18.99	-	-	6	-
19.00 - 19.99	-	-	12	-
20.00 - 20.99	-	-	11	-
21.00 - 21.99	-	-	21	-
22.00 - 22.99	-	-	23	-
23.00 - 23.99	-	-	10	-
24.00 - 24.99	-	-	11	-
25.00 - 25.99	-	-	10	-
26.00 - 26.99	-	-	2	-
27.00 - 27.99	-	-	1	-
28.00 - 28.99	-	-	6	-
29.00 - 29.99	-	-	2	-
30.00 - 30.99	-	-	1	-
31.00 - 31.99	-	-	1	-
32.00 - 32.99	-	-	-	-
33.00 - 33.99	-	-	-	-
34.00 - 34.99	-	-	-	-
35.00 - 35.99	-	-	-	-
= > 36.00	-	-	-	-

	BLC	BLG	NOP	YEB
Total	8	118	121	48
Min. Length	6.38	1.97	17.72	8.78
Max. Length	8.54	7.76	31.97	13.58
Mean Length	7.43	6.40	22.64	11.09
# Measured	8	118	121	48
No Lengths for	0	0	0	0

Note: Unless all fish were measured in the catch, totals shown for some length-frequency distributions may differ from the total number of fish in the catch, due to rounding of fractions used in the estimation of length frequency from a subsample of measured fish.

Length Frequency Distribution For TN

Standard 3/4-in mesh, double frame trap net sets

(Field work conducted between 06/11/2007 and 06/14/2007)

	BLG	GSF	HSF	LMB	NOP	PMK	YEB
< 3.00	8	-	1	-	-	1	-
3.00 - 3.49	353	2	1	-	-	-	-
3.50 - 3.99	328	1	-	-	-	-	-
4.00 - 4.49	310	3	-	-	-	-	-
4.50 - 4.99	173	-	3	-	-	1	-
5.00 - 5.49	179	-	-	-	-	1	-
5.50 - 5.99	278	1	6	-	-	-	1
6.00 - 6.49	346	-	6	-	-	-	-
6.50 - 6.99	338	-	4	-	-	-	-
7.00 - 7.49	156	-	3	1	-	-	-
7.50 - 7.99	28	-	1	-	-	-	-
8.00 - 8.49	-	-	-	-	-	-	2
8.50 - 8.99	-	-	-	-	-	-	1
9.00 - 9.49	-	-	-	-	-	-	-
9.50 - 9.99	-	-	-	-	-	-	-
10.00 - 10.49	-	-	-	-	-	-	4
10.50 - 10.99	-	-	-	-	-	-	9
11.00 - 11.49	-	-	-	-	-	-	9
11.50 - 11.99	-	-	-	-	-	-	6
12.00 - 12.99	-	-	-	-	-	-	7
13.00 - 13.99	-	-	-	-	-	-	1
14.00 - 14.99	-	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	-	-	-
16.00 - 16.99	-	-	-	-	-	-	-
17.00 - 17.99	-	-	-	-	1	-	-
18.00 - 18.99	-	-	-	-	1	-	-
19.00 - 19.99	-	-	-	-	-	-	-
20.00 - 20.99	-	-	-	-	-	-	-
21.00 - 21.99	-	-	-	-	-	-	-
22.00 - 22.99	-	-	-	-	-	-	-
23.00 - 23.99	-	-	-	-	-	-	-
24.00 - 24.99	-	-	-	-	-	-	-
25.00 - 25.99	-	-	-	-	-	-	-
26.00 - 26.99	-	-	-	-	-	-	-
27.00 - 27.99	-	-	-	-	-	-	-
28.00 - 28.99	-	-	-	-	-	-	-
29.00 - 29.99	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-	-	-
32.00 - 32.99	-	-	-	-	-	-	-
33.00 - 33.99	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-

	BLG	GSF	HSF	LMB	NOP	PMK	YEB
Total	2497	7	25	1	2	3	40
Min. Length	2.91	3.19	2.99	7.24	17.52	2.99	5.87
Max. Length	7.80	5.83	7.95	7.24	18.19	5.35	13.03
Mean Length	5.28	4.12	5.97	7.24	17.85	4.42	11.00
# Measured	381	7	25	1	2	3	40
No Lengths for	2116	0	0	0	0	0	0

Note: Unless all fish were measured in the catch, totals shown for some length-frequency distributions may differ from the total number of fish in the catch, due to rounding of fractions used in the estimation of length frequency from a subsample of measured fish.

Length At Capture With Last Incremental Length

(Body-Scale constant, all lengths, and all length increments in inches)

Species: Black Crappie
Body-Scale Constant: 0.79
Total Sample Size: 8

Length at Capture in 2007 for Each Age Class, with Incremental Lengths for 2007

Year Class	Age	Sample Size	Length At Capture: Average Length	Length At Capture: Maximum Length	Length At Capture: Minimum Length	Length At Capture: Standard Error	Length Increments: Increment	Length Increments: Standard Error
2004	3	4	6.70	7.05	6.38	0.167	0.63	0.060
2003	4	1	7.68	7.68	7.68	N/A	0.41	N/A
2002	5	2	8.19	8.46	7.91	0.276	0.40	0.049
2001	6	1	8.54	8.54	8.54	N/A	0.31	N/A

Species: Bluegill
Body-Scale Constant: 0.79
Total Sample Size: 61

Length at Capture in 2007 for Each Age Class, with Incremental Lengths for 2007

Year Class	Age	Sample Size	Length At Capture: Average Length	Length At Capture: Maximum Length	Length At Capture: Minimum Length	Length At Capture: Standard Error	Length Increments: Increment	Length Increments: Standard Error
2005	2	9	3.64	4.80	3.11	0.227	0.48	0.064
2004	3	20	4.43	5.31	3.62	0.122	0.47	0.038
2003	4	3	5.63	5.79	5.43	0.104	0.39	0.038
2002	5	8	6.01	6.54	5.63	0.102	0.35	0.051
2001	6	14	7.02	7.56	5.87	0.124	0.30	0.030
2000	7	4	6.72	7.09	6.34	0.160	0.23	0.070
1999	8	3	7.39	7.80	6.61	0.387	0.27	0.065

Species: Largemouth Bass
Body-Scale Constant: 0.79
Total Sample Size: 1

Length at Capture in 2007 for Each Age Class, with Incremental Lengths for 2007

Year Class	Age	Sample Size	Length At Capture: Average Length	Length At Capture: Maximum Length	Length At Capture: Minimum Length	Length At Capture: Standard Error	Length Increments: Increment	Length Increments: Standard Error
2004	3	1	7.24	7.24	7.24	N/A	0.83	N/A

Length At Capture With Last Incremental Length (Continued)

Species: Northern Pike
Body-Scale Constant: 2.09
Total Sample Size: 101

Length at Capture in 2007 for Each Age Class, with Incremental Lengths for 2007

Year Class	Age	Sample Size	Length At Capture: Average Length	Length At Capture: Maximum Length	Length At Capture: Minimum Length	Length At Capture: Standard Error	Length Increments: Increment	Length Increments: Standard Error
2005	2	2	18.09	18.46	17.72	0.374	1.30	0.087
2004	3	22	19.61	22.05	17.52	0.296	1.46	0.135
2003	4	35	21.80	26.02	18.19	0.320	0.89	0.059
2002	5	29	23.92	28.82	18.86	0.454	0.82	0.060
2001	6	9	27.57	31.97	24.02	0.904	0.55	0.058
2000	7	4	26.72	29.06	24.41	1.021	0.68	0.073

Species: Pumpkinseed
Body-Scale Constant: 0.98
Total Sample Size: 3

Length at Capture in 2007 for Each Age Class, with Incremental Lengths for 2007

Year Class	Age	Sample Size	Length At Capture: Average Length	Length At Capture: Maximum Length	Length At Capture: Minimum Length	Length At Capture: Standard Error	Length Increments: Increment	Length Increments: Standard Error
2006	1	1	2.99	2.99	2.99	N/A	0.81	N/A
2005	2	2	5.14	5.35	4.92	0.217	0.38	0.029

Back-Calculated Lengths for Each Age Class and Average Annual Increments of Back-Calculated Lengths

Species: Black Crappie
Gear Type: Combined Gear Types (GN)

Class	Age	N	1	2	3	4	5	6
2004	3	4	2.69	4.91	6.07	-	-	-
			2.69	2.22	1.16	-	-	-
2003	4	1	3.67	5.17	6.53	7.26	-	-
			3.67	1.50	1.36	0.73	-	-
2002	5	2	2.80	4.72	6.61	7.30	7.79	-
			2.80	1.92	1.90	0.69	0.49	-
2001	6	1	2.03	4.61	6.23	7.21	7.90	8.23
			2.03	2.58	1.62	0.98	0.69	0.33
Mean Length			2.76	4.86	6.28	7.27	7.82	8.23
Mean Increment			2.76	2.10	1.43	0.77	0.56	0.33
Total N			8	8	8	4	3	1

Species: Bluegill
Gear Type: Combined Gear Types (GN and TN)

Class	Age	N	1	2	3	4	5	6	7	8
2005	2	9	1.94	3.16	-	-	-	-	-	-
			1.94	1.22	-	-	-	-	-	-
2004	3	20	1.62	2.78	3.96	-	-	-	-	-
			1.62	1.16	1.18	-	-	-	-	-
2003	4	3	1.79	2.87	4.13	5.24	-	-	-	-
			1.79	1.08	1.26	1.11	-	-	-	-
2002	5	8	1.52	2.66	3.83	4.95	5.66	-	-	-
			1.52	1.14	1.17	1.12	0.71	-	-	-
2001	6	14	1.62	2.64	3.88	5.16	6.07	6.73	-	-
			1.62	1.03	1.24	1.28	0.92	0.66	-	-
2000	7	4	1.30	2.18	3.42	4.81	5.41	6.08	6.50	-
			1.30	0.89	1.23	1.39	0.61	0.67	0.42	-
1999	8	3	1.52	2.30	3.53	5.03	5.92	6.32	6.77	7.12
			1.52	0.78	1.23	1.50	0.89	0.39	0.45	0.35
Mean Length			1.64	2.73	3.86	5.06	5.85	6.55	6.61	7.12
Mean Increment			1.64	1.10	1.21	1.26	0.82	0.62	0.43	0.35
Total N			61	61	52	32	29	21	7	3

Species: Largemouth Bass
Gear Type: Combined Gear Types (TN)

Class	Age	N	1	2	3
2004	3	1	2.95	5.08	6.41
			2.95	2.13	1.33
Mean Length			2.95	5.08	6.41
Mean Increment			2.95	2.13	1.33
Total N			1	1	1

Back-Calculated Lengths for Each Age Class and Average Annual Increments of Back-Calculated Lengths (Continued)

Species: Northern Pike
Gear Type: Combined Gear Types (GN and TN)

Class	Age	N	1	2	3	4	5	6	7
2005	2	2	8.07	16.80	-	-	-	-	-
			8.07	8.73	-	-	-	-	-
2004	3	22	7.47	13.44	18.15	-	-	-	-
			7.47	5.97	4.71	-	-	-	-
2003	4	35	7.70	14.31	18.52	20.91	-	-	-
			7.70	6.61	4.21	2.39	-	-	-
2002	5	29	7.44	13.50	18.27	21.26	23.09	-	-
			7.44	6.07	4.77	2.99	1.83	-	-
2001	6	9	7.33	13.69	19.55	23.37	25.65	27.02	-
			7.33	6.36	5.87	3.82	2.28	1.37	-
2000	7	4	7.05	12.31	18.43	21.37	23.31	24.73	26.05
			7.05	5.26	6.12	2.95	1.94	1.42	1.32
Mean Length			7.52	13.80	18.46	21.36	23.66	26.32	26.05
Mean Increment			7.52	6.28	4.71	2.81	1.93	1.39	1.32
Total N			101	101	99	77	42	13	4

Species: Pumpkinseed
Gear Type: Combined Gear Types (TN)

Class	Age	N	1	2
2006	1	1	2.18	-
			2.18	-
2005	2	2	2.49	4.76
			2.49	2.27
Mean Length			2.38	4.76
Mean Increment			2.38	2.27
Total N			3	2

Age Class Frequency Distribution

Species and Gear (1)	Number of Fish (2)			Number of Fish in Year Class ('yy) and Age Class															
	Aged	Keyed	Unaged	'07 0	'06 1	'05 2	'04 3	'03 4	'02 5	'01 6	'00 7	'99 8	'98 9	'97 10	'96 11	'95 12	'94 13	'93 14	<'93 15+
Black Crappie																			
GN	8	0	0	0	0	0	4	1	2	1	0	0	0	0	0	0	0	0	0
Bluegill																			
GN	23	91	4	0	0	4	6	2	17	63	13	9	0	0	0	0	0	0	0
TN	38	2450	9	0	0	353	930	129	539	246	284	7	0	0	0	0	0	0	0
Totals:	61	2541	13	0	0	357	936	131	556	309	297	16	0	0	0	0	0	0	0
Largemouth Bass																			
TN	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Northern Pike																			
GN	99	22	0	0	0	2	25	45	36	9	4	0	0	0	0	0	0	0	0
TN	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Totals:	101	22	0	0	0	2	26	46	36	9	4	0	0	0	0	0	0	0	0
Pumpkinseed																			
TN	3	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0

(1) Key to sampling gear abbreviations:

GN = Standard gill net sets

TN = Standard 3/4-in mesh, double frame trap net sets

(2) Notes:

Number of Fish Aged: Fish that were aged from bony parts.

Number of Fish Keyed: Fish assigned an age with an age-length key or by expansion of mesh or station age distributions.

Number of Fish Unaged: Fish that were not aged and were not assigned an age.

Other Species

Gear Type (1)	Other Species (Gender) (2)	Total Num	Number Measured	Length (inches) Min - Mean - Max	Number Weighed	Weight (pounds) Min - Mean - Max
TN	Painted Turtle	3	0	N/A	0	N/A
	Snapping Turtle	3	0	N/A	0	N/A

(1) Key to sampling gear abbreviations:

TN = Standard 3/4-in mesh, double frame trap net sets

(2) Gender: If identified and reported.

Survey Crew Notes

null

Area Signed by user 'mihabrat' on 06/05/2008

Area Signed by user 'Daelliso' on 06/05/2008

Area Signed by user 'Daelliso' on 08/07/2008

Region Signed by user 'Damccorm' on 08/08/2008

Field Notes - General Field

Crew leader: Mike Habrat
Crew member: Chris Longhenry
Report prepared by: Chris Longhenry

Discussion

Parkers Lake is a 97-acre, class 30 lake within the city of Plymouth. Boat access to the lake is through a city maintained concrete boat ramp on the north end of the lake and shore access is available from a public fishing pier located on the west side of the lake. Northern pike and bluegill were the most abundant game fish during this survey but largemouth bass are also an important game fish in this lake.

Northern pike index of abundance is at an all time high for Parkers Lake. Gill nets averaged 20.2 northern pike per net, which is approximately three times the third quartile for this lake class. Mean weight (2.7 pounds) was between the median and third quartiles. Lengths ranged from 17.7 to 32 inches and averaged 22.6 inches. The size structure of this population includes a large number of fish between 20 and 25 inches (PSD = 73) and few fish exceeding 28 inches (RSD-28 = 8). Even with the noted increase in abundance, growth is very similar to previous surveys and is average for class 30 lakes in this area. Aging analysis indicated six age classes are present (2 through 7) with ages 3, 4, and 5 accounting for 88 percent of the total population.

Bluegill trap net catches (312.1 per net) were very high compared with similar lakes (third quartile = 59.6 per net). Similar to northern pike, this marks the highest bluegill abundance for Parkers Lake. These fish tend to be small, averaging 5.3 inches and 0.1 pounds. Only 25 percent of the population is longer than 6 inches and no fish greater than 8 inches were sampled. Growth was approximately average for this lake class and 7 age classes between 2 and 8 were present in the sample. Ages 3 and 5 were especially strong age classes and make up 58 percent of the total fish sampled.

Black crappie were sampled below the first gill net quartile for abundance (1.3 per net) and has been below the normal range since 1985. Sampled black crappies ranged from 6.4 to 8.5 inches and averaged 7.4 inches. Four age classes (3 □6) were present and growth was below the area average for class 30 lakes.

Largemouth bass were not targeted during this survey, however one three-year-old bass was sampled that measured 7.2 inches and weighed 0.2 pounds.

Yellow bullhead were sampled at or above the third quartile for abundance and mean weight for both trap (5 per net; 0.8 pounds) and gill nets (8 per net; 0.8 pounds). Lengths ranged from 5.9 to 13.6 and averaged 11 inches.

Other species sampled during this survey include pumpkinseed, hybrid, and green sunfish (0.4, 3.1, and 0.9 per trap net, respectively), however, abundance is low and sizes are small (mean lengths are 4.4, 6.0, and 4.1 inches for the respective species).

Status Of The Fishery

Parkers Lake is a 97-acre, class 30 lake within the city of Plymouth. Boat access to the lake is through a city maintained concrete boat ramp on the north end of the lake and shore access is available from a public fishing pier located on the west side of the lake. Northern pike and bluegill were the most abundant game fish during this survey but largemouth bass are also an important game fish in this lake.

Northern pike abundance is at an all time high for Parkers Lake. Gill nets averaged 20.2 northern pike per net, and mean weight was 2.7 pounds. Lengths ranged from 17.7 to 32 inches and averaged 22.6 inches. The size structure of this population includes a large number of fish between 20 and 25 inches and 8 percent of the population is longer than 28 inches.

Bluegill trap net catches (312.1 per net) were very high compared with similar lakes. Similar to northern pike, this marks the highest bluegill abundance for Parkers Lake. These fish tend to be small, averaging 5.3 inches and 0.1 pounds. Only 25 percent of the population is longer than 6 inches and no fish greater than 8 inches were sampled.

Other sunfish species sampled during this survey include pumpkinseed, hybrid, and green sunfish, however abundance is low and sizes are small (mean lengths are 4.4, 6.0, and 4.1 inches for the respective species).

Black crappie were sampled in below average numbers (1.3 per net) and have been below the normal range since 1985. Sampled black crappies ranged from 6.4 to 8.5 inches and averaged 7.4 inches.

Largemouth bass were not targeted during this survey, however one three-year-old bass was sampled that measured 7.2 inches and weighed 0.2 pounds.

Yellow bullhead were at above average density and weight (average weight = 0.8 pound). Lengths ranged from 5.9 to 13.6 and averaged 11 inches.

Approval Dates And Notices

Date Approved By Metro West Area Fisheries Supervisor: 08/07/2008

Date Approved By Central Region Fisheries Manager: 08/08/2008

REPORT OVERVIEW - FOR OFFICE USE ONLY

(This page is not part of the Standard Lake Survey Report and should be discarded)

Lake Name: Parkers **Survey Type: Population Assessment**

DOW Number: 27-0107-00 **Survey ID Date: 06/11/2007**

Survey Status: Region Signed

The following 17 (of 31) report components are not included in this report:

1. Current Water Level
2. Benchmark And Gauge Descriptions / Locations
3. Water Level History*
4. Water Level History - Readings*
5. Water Level History - Station Summary*
6. Lake Inlets
7. Additional Inlet Information
8. Lake Outlets
9. Additional Outlet Information
10. Water Control Structure (Dam)
11. Surrounding Watershed Characteristics, Shoreline Characteristics, and Riparian Landscape Observations
12. Resorts And Campgrounds
13. Fish Spawning Conditions
14. Erosion And Pollution
15. Fish Diseases And Parasites
16. Aquatic Vegetation And Shoalwater Substrates
17. Water Quality (Winter Observations) (added to revision 01/21/2010)

* Water Level History report: This data has not yet been migrated into the Fisheries LSM database. On 01/08/2009, two additional Water Level History report components (Readings and Station Summary) were added.

Note: The data source for Length and Age Class Frequency Distribution tables is updated twice daily - once at noon and once overnight. Any changes to the data made after noon on 12/16/2013 may not be reflected in the Distribution tables until 12/17/2013.

The following survey component was flagged to be specifically excluded from this report: TN - 6