

## Survey Report for HAMLIN LAKE, Mason County, Summer, 2008

<b>Waterbody</b>	HAMLIN LAKE
<b>Year</b>	Summer, 2008
<b>County</b>	Mason County
<b>Sites</b>	HAMLIN
<b>Survey period</b>	April 26 to September 30
<b>Survey design</b>	Roving-roving (roving counts and interviews)
<b>Interview type/mode</b>	roving and access/boat, shore
<b>Count type/mode</b>	aerial, progressive/boat and shore
<b>Clerk time</b>	full time, 4 days 10 hours
<b>Survey purpose</b>	Characterize general effort and catch aspects of the fishery

### Notes

Survey followed a roving-roving (roving counts and interviews) design. All funding was provided through Fisheries Division. One clerk worked full time to collect angler survey data. Both weekend days and 2 randomly selected weekdays were selected for sampling during each week of the survey season. No holidays were sampled. Clerk followed a randomized count and interview schedule. One of two shifts was selected each sample day. The entire water body was sampled each day. Starting location within the waterbody and direction of travel were randomized for both counting and interviewing. aerial, progressive counts of anglers were made once per day. Survey period for both counts and interviews was April 26 to September 30. Months were estimated separately. Estimates are given in Tables xxx.

### HAMLIN LAKE 2008 Creel Survey Schedule Central Lake Michigan Management Unit

<b>Work shifts</b>	<b>A</b> -April 26th through Sept	6:00am to 2:30pm
	<b>B</b> -April	11:30am to 8:00pm
	May & September	12:30am to 9:00pm
	June & August	1:30pm to 10:00pm
	July	2:30pm to 11:00pm

NOTE: When an A-shift is scheduled to follow B-shift the pervious day ending at 9, 10, or 11, that A-shift will start at 8:00am and run to 4:30pm AS LONG AS the scheduling program has not randomly assigned a count for 6 or 7 am. If a count has been assigned to these early hours of an A-shift, the work day will be 6:00am to 2:30pm regardless of the previous day's schedule. A-shifts that are to be delayed will be denoted by a "\*\*\*\*" next to the date on your schedule.

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### SITE DESCRIPTION

**Hamlin Lake** – The entire body of water from the outlet dam to the formation of the Big Sable River inlet including: Stearns Bay, the North, Middle, South, and Indian Pete’s bays, and Lost Lake\* near Ludington State Park. Three possible starting locations are assigned along the mapped route; #1 is at the base of Stearns Bay, #2 is at the narrows separating the upper arm from the main basin, and #3 is at the northern most tip of the upper arm near Big Sable River (see map included w/ schedule).

NOTE: If possible, Lost Lake should be included in the Hamlin Lake survey. There are two entries w/ footbridges accessing Lost Lake (The southern one connecting Lost Lake to the Sable River Outlet and the northern one connecting Lost Lake to the main basin). If the bridges allow for the passage of your boat make a loop through Lost Lake when conducting your interviews and daily count. If the bridges do not allow for boat passage, do not worry about collecting interviews or counting in Lost Lake.

**Count Instructions** – At the scheduled count time, stop taking interviews and start a count from your current location. Follow the mapped route in the direction scheduled for that day (clockwise or counter clockwise) and count all fishing boats and individual shore anglers. Record all count information on your PDA. When you have completed a loop and are back to where you started your count, resume conducting interviews.

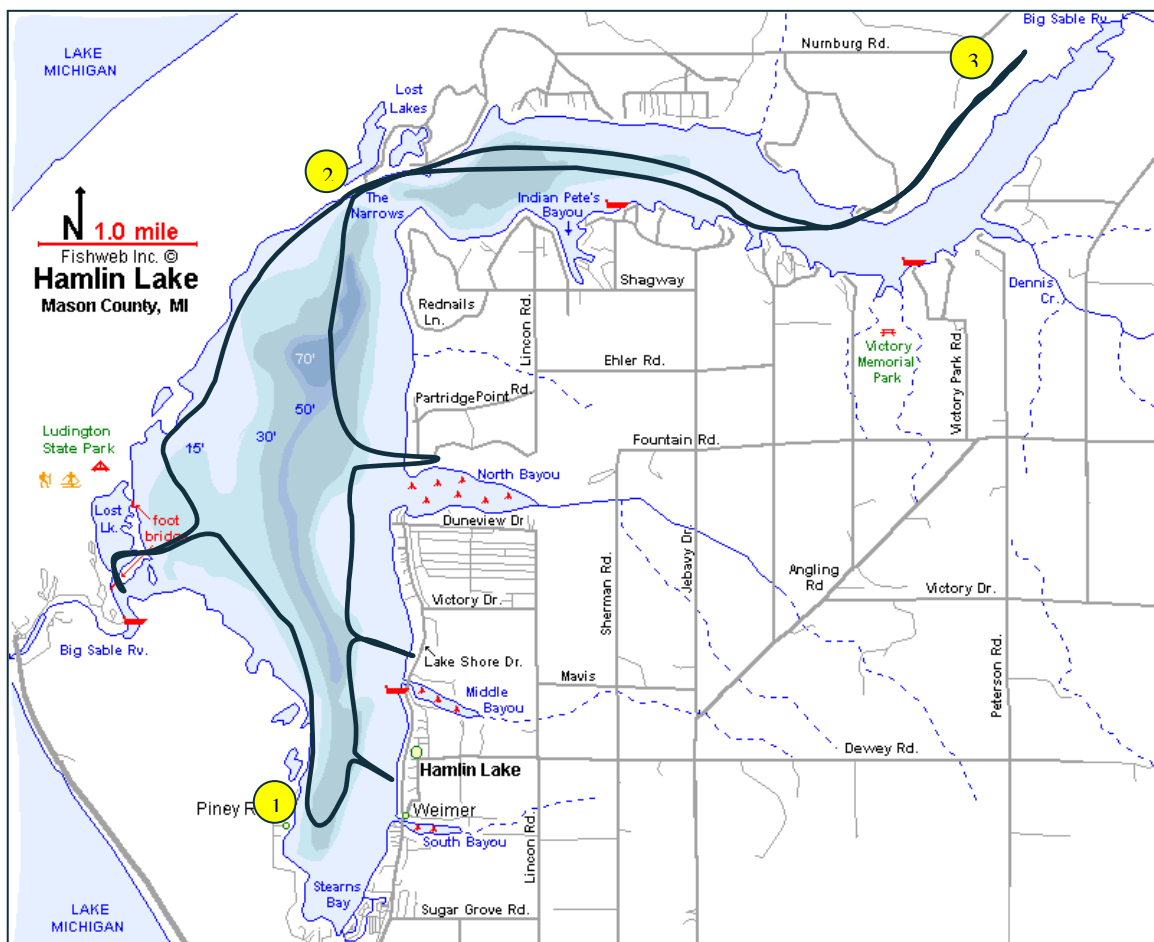


Table –Work shifts used to estimate catch and effort at HAMLIN LAKE, April 26 to September 30, Summer, 2008

	<b>Year</b>	<b>Month</b>	<b>F</b>
1	2008	4	15
2	2008	5	16
3	2008	6	17
4	2008	7	17
5	2008	8	17
6	2008	9	16

Estimated harvest, catch per hour, and fishing pressure for boat. Two standard errors are given in parentheses.

Species	C/H	April-May	June	July	August	September	Season	Win C/H	Win Season	Sum C/H	Sum Season
HARVEST											
Walleye	0.0028 (0.0026)	32 (64)	0 (0)	48 (66)	194 (239)	0 (0)	275 (256)	NAN (0)	0 (0)	0.0028 (0.0026)	275 (256)
Northern pike	0.0002 (0.0003)	0 (0)	0 (0)	0 (0)	15 (32)	0 (0)	15 (32)	NAN (0)	0 (0)	0.0002 (0.0003)	15 (32)
Largemouth bass	0.0156 (0.0134)	189 (210)	204 (408)	115 (173)	1,027 (1,190)	0 (0)	1,535 (1,287)	NAN (0)	0 (0)	0.0156 (0.0134)	1,535 (1,287)
Smallmouth bass	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Yellow Perch	0.0093 (0.0078)	394 (472)	381 (547)	0 (0)	88 (176)	58 (115)	920 (752)	NAN (0)	0 (0)	0.0093 (0.0078)	920 (752)
Bluegill	0.2751 (0.1325)	1,872 (1,550)	10,935 (10,358)	1,759 (1,258)	8,053 (4,917)	4,526 (2,848)	27,145 (11,981)	NAN (0)	0 (0)	0.2751 (0.1325)	27,145 (11,981)
Pumpkinseed	0.0450 (0.0409)	1,653 (1,948)	1,598 (3,197)	649 (1,124)	316 (327)	219 (439)	4,436 (3,947)	NAN (0)	0 (0)	0.0450 (0.0409)	4,436 (3,947)
Rock bass	0.0448 (0.0413)	956 (839)	2,689 (3,852)	600 (454)	178 (356)	0 (0)	4,423 (3,984)	NAN (0)	0 (0)	0.0448 (0.0413)	4,423 (3,984)
Black crappie	0.0516 (0.0317)	3,411 (2,310)	714 (1,158)	184 (369)	703 (1,405)	84 (169)	5,096 (2,970)	NAN (0)	0 (0)	0.0516 (0.0317)	5,096 (2,970)
TOTAL HARVEST	0.4443 (0.1627)	8,506 (3,537)	16,521 (11,582)	3,356 (1,795)	10,574 (5,281)	4,887 (2,889)	43,845 (13,642)	NAN (0.0000)	0 (0)	0.4443 (0.1627)	43,845 (13,642)
RELEASED											
Walleye	0.0040 (0.0042)	0 (0)	0 (0)	54 (83)	206 (294)	137 (274)	397 (411)	NAN (0)	0 (0)	0.0040 (0.0042)	397 (411)
Northern pike	0.0496 (0.0297)	1,838 (1,700)	1,996 (2,095)	328 (304)	551 (512)	182 (283)	4,895 (2,777)	NAN (0)	0 (0)	0.0496 (0.0297)	4,895 (2,777)
Largemouth bass	0.2934 (0.1077)	4,549 (2,931)	5,637 (6,174)	5,010 (2,900)	10,328 (4,673)	3,434 (2,175)	28,958 (9,038)	NAN (0)	0 (0)	0.2934 (0.1077)	28,958 (9,038)
Smallmouth bass	0.0362 (0.0329)	2,064 (3,042)	367 (444)	411 (407)	436 (354)	290 (549)	3,569 (3,169)	NAN (0)	0 (0)	0.0362 (0.0329)	3,569 (3,169)
Yellow Perch	0.0551 (0.0328)	298 (304)	1,463 (1,974)	472 (510)	1,945 (1,913)	1,264 (1,202)	5,442 (3,059)	NAN (0)	0 (0)	0.0551 (0.0328)	5,442 (3,059)

Bluegill	0.2691	3,993	5,131	2,754	9,226	5,451	26,555	NAN	0	0.2691	26,555
	(0.1151)	(2,754)	(3,965)	(1,955)	(7,562)	(4,305)	(10,141)	(0)	(0)	(0.1151)	(10,141)
Pumpkinseed	0.0268	128	1,598	345	575	0	2,647	NAN	0	0.0268	2,647
	(0.0339)	(257)	(3,197)	(462)	(680)	(0)	(3,311)	(0)	(0)	(0.0339)	(3,311)
Rock bass	0.0292	778	142	1,113	817	32	2,882	NAN	0	0.0292	2,882
	(0.0154)	(653)	(202)	(1,051)	(662)	(64)	(1,419)	(0)	(0)	(0.0154)	(1,419)
Black crappie	0.0090	426	0	0	88	375	889	NAN	0	0.0090	889
	(0.0076)	(437)	(0)	(0)	(176)	(555)	(728)	(0)	(0)	(0.0076)	(728)
Channel catfish	0.0008	0	0	77	0	0	77	NAN	0	0.0008	77
	(0.0016)	(0)	(0)	(157)	(0)	(0)	(157)	(0)	(0)	(0.0016)	(157)
Carp	0.0007	0	0	0	70	0	70	NAN	0	0.0007	70
	(0.0014)	(0)	(0)	(0)	(141)	(0)	(141)	(0)	(0)	(0.0014)	(141)
Bowfin	0	0	0	0	0	0	0	NAN	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Freshwater drum	0.0016	0	0	0	155	0	155	NAN	0	0.0016	155
	(0.0023)	(0)	(0)	(0)	(221)	(0)	(221)	(0)	(0)	(0.0023)	(221)
OTH1	0.0006	0	0	54	0	0	54	NAN	0	0.0006	54
	(0.0009)	(0)	(0)	(85)	(0)	(0)	(85)	(0)	(0)	(0.0009)	(85)
TOTAL RELEASED	0.7761	14,076	16,336	10,617	24,397	11,164	76,590	NAN	0	0.7761	76,590
	(0.2135)	(5,394)	(8,520)	(3,756)	(9,173)	(5,047)	(15,014)	(0.0000)	(0)	(0.2135)	(15,014)
TOTAL CATCH	1.2204	22,582	32,857	13,973	34,970	16,051	120,435	NAN	0	1.2204	120,435
	(0.3127)	(6,450)	(14,378)	(4,163)	(10,585)	(5,815)	(20,286)	(0)	(0)	(0.3127)	(20,286)
ANGLER HOURS		17,602	24,086	22,613	23,036	11,345	98,682		0		98,682
		(8,593)	(12,018)	(6,664)	(8,650)	(5,042)	(19,050)		(0)		(19,050)
ANGLER TRIPS		5,199	4,648	4,635	5,805	1,994	22,280		0		22,280
		(2,622)	(3,148)	(1,586)	(2,443)	(904)	(5,107)		(0)		(5,107)

Estimated harvest, catch per hour, and fishing pressure for shore. Two standard errors are given in parentheses.

Species	C/H	April-May	June	July	August	September	Season	Win C/H	Win Season	Sum C/H	Sum Season
HARVEST											
Walleye	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Northern pike	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Largemouth bass	0.0068 (0.0089)	0 (0)	0 (0)	79 (102)	0 (0)	0 (0)	79 (102)	NAN (0)	0 (0)	0.0068 (0.0089)	79 (102)
Smallmouth bass	0.0025 (0.0051)	0 (0)	0 (0)	30 (59)	0 (0)	0 (0)	30 (59)	NAN (0)	0 (0)	0.0025 (0.0051)	30 (59)
Yellow Perch	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Bluegill	0.0102 (0.0205)	0 (0)	0 (0)	119 (238)	0 (0)	0 (0)	119 (238)	NAN (0)	0 (0)	0.0102 (0.0205)	119 (238)
Pumpkinseed	0.1099 (0.1490)	957 (1,676)	254 (360)	75 (150)	0 (0)	0 (0)	1,286 (1,721)	NAN (0)	0 (0)	0.1099 (0.1490)	1,286 (1,721)
Rock bass	0.0104 (0.0152)	46 (92)	0 (0)	75 (150)	0 (0)	0 (0)	121 (176)	NAN (0)	0 (0)	0.0104 (0.0152)	121 (176)
Black crappie	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
TOTAL HARVEST	0.1397 (0.1527)	1,003 (1,679)	254 (360)	378 (340)	0 (0)	0 (0)	1,635 (1,751)	NAN (0.0000)	0 (0)	0.1397 (0.1527)	1,635 (1,751)
RELEASED											
Walleye	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Northern pike	0.0339 (0.0501)	250 (500)	147 (293)	0 (0)	0 (0)	0 (0)	397 (580)	NAN (0)	0 (0)	0.0339 (0.0501)	397 (580)
Largemouth bass	0.0367 (0.0338)	116 (231)	122 (173)	169 (250)	23 (46)	0 (0)	429 (385)	NAN (0)	0 (0)	0.0367 (0.0338)	429 (385)
Smallmouth bass	0.0025 (0.0051)	0 (0)	0 (0)	30 (59)	0 (0)	0 (0)	30 (59)	NAN (0)	0 (0)	0.0025 (0.0051)	30 (59)
Yellow Perch	0.0375 (0.0462)	250 (500)	0 (0)	188 (182)	0 (0)	0 (0)	438 (532)	NAN (0)	0 (0)	0.0375 (0.0462)	438 (532)
Bluegill	0.2512 (0.1663)	597 (855)	1,303 (1,404)	807 (676)	232 (464)	0 (0)	2,939 (1,836)	NAN (0)	0 (0)	0.2512 (0.1663)	2,939 (1,836)

Pumpkinseed	0.1688	1,125	541	0	309	0	1,975	NAN	0	0.1688	1,975
	(0.1961)	(2,031)	(755)	(0)	(619)	(0)	(2,254)	(0)	(0)	(0.1961)	(2,254)
Rock bass	0.0067	0	49	30	0	0	79	NAN	0	0.0067	79
	(0.0099)	(0)	(98)	(59)	(0)	(0)	(114)	(0)	(0)	(0.0099)	(114)
Black crappie	0.0059	0	0	69	0	0	69	NAN	0	0.0059	69
	(0.0086)	(0)	(0)	(100)	(0)	(0)	(100)	(0)	(0)	(0.0086)	(100)
Channel catfish	0	0	0	0	0	0	0	NAN	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Carp	0	0	0	0	0	0	0	NAN	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Bowfin	0.0064	0	0	75	0	0	75	NAN	0	0.0064	75
	(0.0129)	(0)	(0)	(150)	(0)	(0)	(150)	(0)	(0)	(0.0129)	(150)
Freshwater drum	0	0	0	0	0	0	0	NAN	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
OTH1	0	0	0	0	0	0	0	NAN	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
TOTAL RELEASED	0.5496	2,337	2,162	1,368	565	0	6,432	NAN	0	0.5496	6,432
	(0.2868)	(2,326)	(1,633)	(769)	(775)	(0)	(3,044)	(0.0000)	(0)	(0.2868)	(3,044)
TOTAL CATCH	0.6893	3,340	2,416	1,747	565	0	8,067	NAN	0	0.6893	8,067
	(0.3361)	(2,869)	(1,672)	(841)	(775)	(0)	(3,512)	(0)	(0)	(0.3361)	(3,512)
ANGLER HOURS		2,964	2,815	2,323	2,869	733	11,704		0		11,704
		(1,502)	(1,412)	(1,017)	(1,098)	(341)	(2,570)		(0)		(2,570)
ANGLER TRIPS		1,694	1,609	1,327	1,639	419	6,688		0		6,688
		(931)	(872)	(641)	(715)	(213)	(1,610)		(0)		(1,610)

Estimated harvest, catch per hour, and fishing pressure for Hamlin\_lake. Two standard errors are given in parentheses.

Species	C/H	April-May	June	July	August	September	Season	Win C/H	Win Season	Sum C/H	Sum Season
HARVEST											
Walleye	0.0025 (0.0024)	32 (64)	0 (0)	48 (66)	194 (239)	0 (0)	275 (256)	NAN (0)	0 (0)	0.0025 (0.0024)	275 (256)
Northern pike	0.0001 (0.0003)	0 (0)	0 (0)	0 (0)	15 (32)	0 (0)	15 (32)	NAN (0)	0 (0)	0.0001 (0.0003)	15 (32)
Largemouth bass	0.0146 (0.0120)	189 (210)	204 (408)	194 (201)	1,027 (1,190)	0 (0)	1,614 (1,291)	NAN (0)	0 (0)	0.0146 (0.0120)	1,614 (1,291)
Smallmouth bass	0.0003 (0.0005)	0 (0)	0 (0)	30 (59)	0 (0)	0 (0)	30 (59)	NAN (0)	0 (0)	0.0003 (0.0005)	30 (59)
Yellow Perch	0.0083 (0.0070)	394 (472)	381 (547)	0 (0)	88 (176)	58 (115)	920 (752)	NAN (0)	0 (0)	0.0083 (0.0070)	920 (752)
Bluegill	0.2470 (0.1168)	1,872 (1,550)	10,935 (10,358)	1,878 (1,280)	8,053 (4,917)	4,526 (2,848)	27,264 (11,984)	NAN (0)	0 (0)	0.2470 (0.1168)	27,264 (11,984)
Pumpkinseed	0.0518 (0.0400)	2,610 (2,570)	1,852 (3,217)	724 (1,134)	316 (327)	219 (439)	5,722 (4,306)	NAN (0)	0 (0)	0.0518 (0.0400)	5,722 (4,306)
Rock bass	0.0412 (0.0368)	1,002 (844)	2,689 (3,852)	675 (478)	178 (356)	0 (0)	4,544 (3,988)	NAN (0)	0 (0)	0.0412 (0.0368)	4,544 (3,988)
Black crappie	0.0462 (0.0281)	3,411 (2,310)	714 (1,158)	184 (369)	703 (1,405)	84 (169)	5,096 (2,970)	NAN (0)	0 (0)	0.0462 (0.0281)	5,096 (2,970)
TOTAL HARVEST	0.4120 (0.1438)	9,509 (3,915)	16,776 (11,588)	3,734 (1,827)	10,574 (5,281)	4,887 (2,889)	45,480 (13,754)	NAN (0.0000)	0 (0)	0.4120 (0.1438)	45,480 (13,754)
RELEASED											
Walleye	0.0036 (0.0038)	0 (0)	0 (0)	54 (83)	206 (294)	137 (274)	397 (411)	NAN (0)	0 (0)	0.0036 (0.0038)	397 (411)
Northern pike	0.0479 (0.0270)	2,088 (1,772)	2,143 (2,116)	328 (304)	551 (512)	182 (283)	5,292 (2,837)	NAN (0)	0 (0)	0.0479 (0.0270)	5,292 (2,837)
Largemouth bass	0.2662 (0.0942)	4,664 (2,940)	5,759 (6,176)	5,178 (2,911)	10,351 (4,673)	3,434 (2,175)	29,387 (9,046)	NAN (0)	0 (0)	0.2662 (0.0942)	29,387 (9,046)
Smallmouth bass	0.0326 (0.0293)	2,064 (3,042)	367 (444)	440 (411)	436 (354)	290 (549)	3,598 (3,170)	NAN (0)	0 (0)	0.0326 (0.0293)	3,598 (3,170)
Yellow Perch	0.0533 (0.0296)	548 (585)	1,463 (1,974)	660 (541)	1,945 (1,913)	1,264 (1,202)	5,881 (3,105)	NAN (0)	0 (0)	0.0533 (0.0296)	5,881 (3,105)
Bluegill	0.2672 (0.1043)	4,590 (2,883)	6,434 (4,207)	3,561 (2,068)	9,458 (7,576)	5,451 (4,305)	29,495 (10,306)	NAN (0)	0 (0)	0.2672 (0.1043)	29,495 (10,306)



Pumpkinseed	0.0419	1,253	2,139	345	884	0	4,622	NAN	0	0.0419	4,622
	(0.0370)	(2,048)	(3,285)	(462)	(919)	(0)	(4,005)	(0)	(0)	(0.0370)	(4,005)
Rock bass	0.0268	778	191	1,143	817	32	2,961	NAN	0	0.0268	2,961
	(0.0137)	(653)	(225)	(1,053)	(662)	(64)	(1,424)	(0)	(0)	(0.0137)	(1,424)
Black crappie	0.0087	426	0	69	88	375	958	NAN	0	0.0087	958
	(0.0068)	(437)	(0)	(100)	(176)	(555)	(734)	(0)	(0)	(0.0068)	(734)
Channel catfish	0.0007	0	0	77	0	0	77	NAN	0	0.0007	77
	(0.0014)	(0)	(0)	(157)	(0)	(0)	(157)	(0)	(0)	(0.0014)	(157)
Carp	0.0006	0	0	0	70	0	70	NAN	0	0.0006	70
	(0.0013)	(0)	(0)	(0)	(141)	(0)	(141)	(0)	(0)	(0.0013)	(141)
Bowfin	0.0007	0	0	75	0	0	75	NAN	0	0.0007	75
	(0.0014)	(0)	(0)	(150)	(0)	(0)	(150)	(0)	(0)	(0.0014)	(150)
Freshwater drum	0.0014	0	0	0	155	0	155	NAN	0	0.0014	155
	(0.0020)	(0)	(0)	(0)	(221)	(0)	(221)	(0)	(0)	(0.0020)	(221)
OTH1	0.0005	0	0	54	0	0	54	NAN	0	0.0005	54
	(0.0008)	(0)	(0)	(85)	(0)	(0)	(85)	(0)	(0)	(0.0008)	(85)
TOTAL RELEASED	0.7521	16,413	18,498	11,986	24,961	11,164	83,022	NAN	0	0.7521	83,022
	(0.1908)	(5,874)	(8,675)	(3,834)	(9,206)	(5,047)	(15,319)	(0.0000)	(0)	(0.1908)	(15,319)
TOTAL CATCH	1.1641	25,922	35,273	15,720	35,535	16,051	128,502	NAN	0	1.1641	128,502
	(0.2755)	(7,059)	(14,475)	(4,247)	(10,613)	(5,815)	(20,588)	(0)	(0)	(0.2755)	(20,588)
ANGLER HOURS		20,565	26,901	24,936	25,905	12,078	110,386		0		110,386
		(8,723)	(12,100)	(6,741)	(8,719)	(5,053)	(19,223)		(0)		(19,223)
ANGLER TRIPS		6,892	6,257	5,962	7,444	2,413	28,968		0		28,968
		(2,783)	(3,266)	(1,711)	(2,545)	(929)	(5,355)		(0)		(5,355)