

## Survey Report for TWIN LAKES, Montmorency County, Summer, 2008

<b>Waterbody</b>	TWIN LAKES
<b>Year</b>	Summer, 2008
<b>County</b>	Montmorency County
<b>Sites</b>	East Twin, West Twin
<b>Survey period</b>	April 26 to June 30
<b>Survey design</b>	Roving-roving (roving counts and interviews)
<b>Interview type/mode</b>	access and roving/boat, shore
<b>Count type/mode</b>	roving/boat and shore
<b>Clerk time</b>	full time
<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 angling (interview and count) data. Both weekend days and 3 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. TWIN LAKES was divided into 2 sections: EAST TWIN, WEST TWIN. Each section was sampled per day. Starting location within a section and direction of travel were randomized for both counting and interviewing. roving counts of boat and shore anglers were made once per day. Survey period for both counts and interviews was April 26 to June 30. Months were estimated separately. Estimates are given in Tables xxx.

<b>Work shifts</b>	A-April through October 15th	6:00am to 4:30pm
	B-April	9:30am to 8:00pm
	May & Sept & Oct	10:30am to 9:00pm
	June & August	11:30pm to 10:00pm
	July	12:30pm to 11:00pm

NOTE: Due to the travel time to and from the Long Lake creel site (80+ miles), this survey will be conducted using 4-10 hour work days per week (2 week days and 2 weekend day). No counts will be scheduled within 1.5 hours of the shift's start or 2 hours of the shift's end.

Finally, due to the complexity of this schedule and 3 assigned pass days per week, there will be no delayed A-shifts associated with this survey. All A-shifts will begin at 6:00am regardless of what was worked the day before.

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### SITE DESCRIPTION & COUNT INSTRUCTIONS

Each day, 7 hours per 10 hour shift will be dedicated to collecting creel in formation from East and West Twin lakes (3 hours is dedicated to travel). The 7 hours of creel will be split in half with 3.5 hours spent on each lake. On your schedule, the assigned lake for each

work day is the location where you will perform creel during the FIRST half of your shift. At the 5 hour mid point of your day you will move and perform creel on the other lake. During each 3.5 hour creel period one count will be assigned where you are to count all anglers on the lake you are currently working. At the mid day switch point; please move from one lake to the other as quickly as possible. Two boats will be provided for this survey (1 will be left at each lake). All creel information for the two lakes should be kept separate and recorded as different fishing sites.

### **Site 1: West Twin Lake**

West Twin Lake is a 1,313 acre lake located in Montmorency County with a public access site in the western bay. You will be responsible for surveying the entire lake along the red interview/count route (see the map included w/ your schedule).

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 a given 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.

### **Site 2: East Twin Lake**

East Twin Lake is a 974 acre lake located in Montmorency County with a public access site located on the north east shore in Lewiston. You will be responsible for surveying the entire lake along the red interview/count route (see the map included w/ your schedule).

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 a given 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.

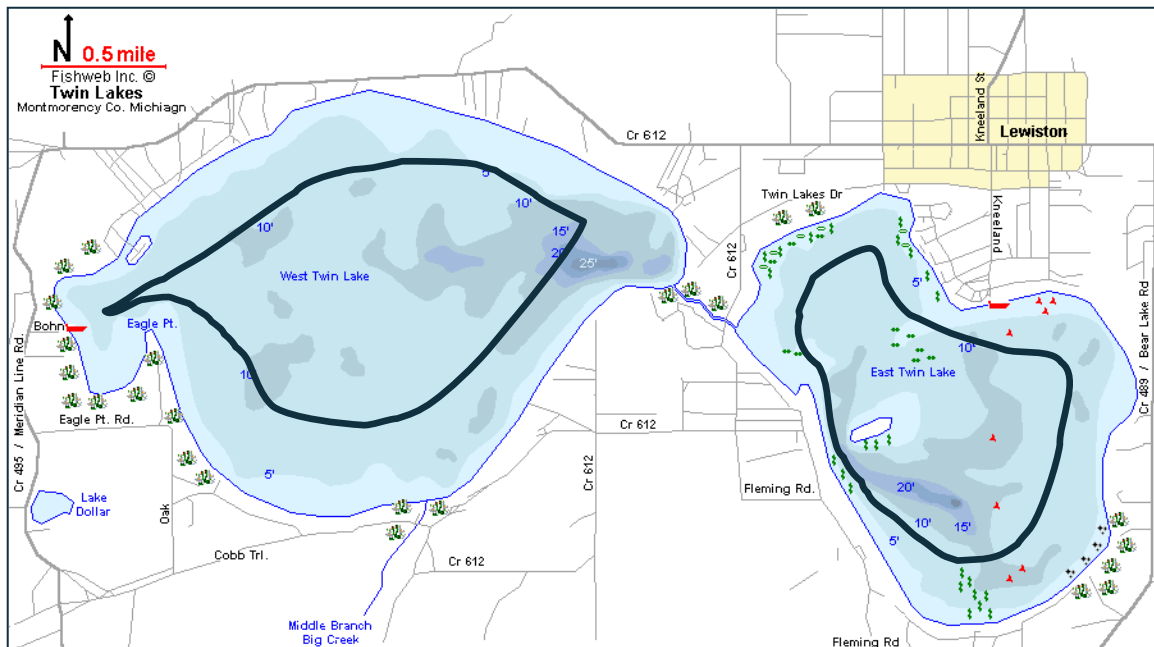


Table –Work shifts used to estimate catch and effort at TWIN LAKES, April 26 to June 30, Summer, 2008

	Year	Month	F
1	2008	4	14
2	2008	5	15
3	2008	6	16
4	2008	7	17
5	2008	8	16
6	2008	9	15

Estimated harvest, catch per hour, and fishing pressure for East Twin\_boat. Two standard errors are given in parentheses.

Species	C/H	April-May	June	Season	Win C/H	Win Season	Sum C/H	Sum Season
HARVEST								
Walleye	0.0959 (0.1046)	7 (11)	107 (111)	113 (112)	NAN (0)	0 (0)	0.0959 (0.1046)	113 (112)
Largemouth bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Smallmouth bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Yellow Perch	0.0869 (0.1042)	0 (0)	103 (114)	103 (114)	NAN (0)	0 (0)	0.0869 (0.1042)	103 (114)
Bluegill	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Rock bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
TOTAL HARVEST	0.1828 (0.1595)	7 (11)	210 (159)	216 (159)	NAN (0.0000)	0 (0)	0.1828 (0.1595)	216 (159)
RELEASED								
Walleye	0.0193 (0.0236)	0 (0)	23 (26)	23 (26)	NAN (0)	0 (0)	0.0193 (0.0236)	23 (26)
Northern pike	0.0032 (0.0067)	0 (0)	4 (8)	4 (8)	NAN (0)	0 (0)	0.0032 (0.0067)	4 (8)
Largemouth bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Smallmouth bass	0.0064 (0.0105)	0 (0)	8 (12)	8 (12)	NAN (0)	0 (0)	0.0064 (0.0105)	8 (12)
Yellow Perch	0.1125 (0.1439)	0 (0)	133 (159)	133 (159)	NAN (0)	0 (0)	0.1125 (0.1439)	133 (159)
Bluegill	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Rock bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
TOTAL RELEASED	0.1414 (0.1514)	0 (0)	167 (161)	167 (161)	NAN (0.0000)	0 (0)	0.1414 (0.1514)	167 (161)
TOTAL CATCH	0.3241 (0.2443)	7 (11)	377 (226)	384 (227)	NAN (0)	0 (0)	0.3241 (0.2443)	384 (227)
ANGLER HOURS		376 (316)	808 (454)	1,184 (553)		0 (0)		1,184 (553)
ANGLER TRIPS		112 (100)	218 (133)	330 (166)		0 (0)		330 (166)

Estimated harvest, catch per hour, and fishing pressure for East Twin\_shore. Two standard errors are given in parentheses.

Species	C/H	April-May	June	Season	Win C/H	Win Season	Sum C/H	Sum Season
HARVEST								
Walleye	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Largemouth bass	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Smallmouth bass	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Yellow Perch	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Bluegill	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Rock bass	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
TOTAL HARVEST	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
RELEASED								
Walleye	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Northern pike	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Largemouth bass	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Smallmouth bass	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Yellow Perch	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Bluegill	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
Rock bass	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
TOTAL RELEASED	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
TOTAL CATCH	NAN (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	NAN (0)	0 (0)
ANGLER HOURS		0 (0)	0 (0)	0 (0)		0 (0)		0 (0)
ANGLER TRIPS		0 (0)	0 (0)	0 (0)		0 (0)		0 (0)

Estimated harvest, catch per hour, and fishing pressure for West Twin\_boat. Two standard errors are given in parentheses.

Species	C/H	April-May	June	Season	Win C/H	Win Season	Sum C/H	Sum Season
HARVEST								
Walleye	0.1446 (0.0983)	150 (138)	147 (113)	297 (178)	NAN (0)	0 (0)	0.1446 (0.0983)	297 (178)
Largemouth bass	0.0047 (0.0086)	0 (0)	10 (17)	10 (17)	NAN (0)	0 (0)	0.0047 (0.0086)	10 (17)
Smallmouth bass	0.0067 (0.0111)	0 (0)	14 (22)	14 (22)	NAN (0)	0 (0)	0.0067 (0.0111)	14 (22)
Yellow Perch	0.0283 (0.0610)	0 (0)	58 (124)	58 (124)	NAN (0)	0 (0)	0.0283 (0.0610)	58 (124)
Bluegill	0.1142 (0.1987)	0 (0)	235 (401)	235 (401)	NAN (0)	0 (0)	0.1142 (0.1987)	235 (401)
Rock bass	0.0019 (0.0040)	0 (0)	4 (8)	4 (8)	NAN (0)	0 (0)	0.0019 (0.0040)	4 (8)
TOTAL HARVEST	0.3004 (0.2424)	150 (138)	467 (436)	617 (457)	NAN (0.0000)	0 (0)	0.3004 (0.2424)	617 (457)
RELEASED								
Walleye	0.0584 (0.0956)	23 (30)	97 (190)	120 (193)	NAN (0)	0 (0)	0.0584 (0.0956)	120 (193)
Northern pike	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Largemouth bass	0.0377 (0.0370)	0 (0)	77 (72)	77 (72)	NAN (0)	0 (0)	0.0377 (0.0370)	77 (72)
Smallmouth bass	0.0474 (0.0388)	24 (31)	74 (66)	97 (73)	NAN (0)	0 (0)	0.0474 (0.0388)	97 (73)
Yellow Perch	0.0039 (0.0083)	0 (0)	8 (17)	8 (17)	NAN (0)	0 (0)	0.0039 (0.0083)	8 (17)
Bluegill	0.0078 (0.0162)	0 (0)	16 (33)	16 (33)	NAN (0)	0 (0)	0.0078 (0.0162)	16 (33)
Rock bass	0.0749 (0.1062)	0 (0)	154 (213)	154 (213)	NAN (0)	0 (0)	0.0749 (0.1062)	154 (213)
TOTAL RELEASED	0.2300 (0.1665)	47 (43)	426 (304)	473 (307)	NAN (0.0000)	0 (0)	0.2300 (0.1665)	473 (307)
TOTAL CATCH	0.5305 (0.3172)	197 (145)	893 (532)	1,090 (551)	NAN (0)	0 (0)	0.5305 (0.3172)	1,090 (551)
ANGLER HOURS		696 (451)	1,359 (478)	2,055 (657)		0 (0)		2,055 (657)
ANGLER TRIPS		221 (161)	348 (135)	570 (210)		0 (0)		570 (210)

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

Species	C/H	April-May	June	Season	Win C/H	Win Season	Sum C/H	Sum Season
<b>HARVEST</b>								
Walleye	0.0959 (0.1046)	7 (11)	107 (111)	113 (112)	NAN (0)	0 (0)	0.0959 (0.1046)	113 (112)
Largemouth bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Smallmouth bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Yellow Perch	0.0869 (0.1042)	0 (0)	103 (114)	103 (114)	NAN (0)	0 (0)	0.0869 (0.1042)	103 (114)
Bluegill	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Rock bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
<b>TOTAL HARVEST</b>	<b>0.1828 (0.1595)</b>	<b>7 (11)</b>	<b>210 (159)</b>	<b>216 (159)</b>	<b>NAN (0.0000)</b>	<b>0 (0)</b>	<b>0.1828 (0.1595)</b>	<b>216 (159)</b>
<b>RELEASED</b>								
Walleye	0.0193 (0.0236)	0 (0)	23 (26)	23 (26)	NAN (0)	0 (0)	0.0193 (0.0236)	23 (26)
Northern pike	0.0032 (0.0067)	0 (0)	4 (8)	4 (8)	NAN (0)	0 (0)	0.0032 (0.0067)	4 (8)
Largemouth bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Smallmouth bass	0.0064 (0.0105)	0 (0)	8 (12)	8 (12)	NAN (0)	0 (0)	0.0064 (0.0105)	8 (12)
Yellow Perch	0.1125 (0.1439)	0 (0)	133 (159)	133 (159)	NAN (0)	0 (0)	0.1125 (0.1439)	133 (159)
Bluegill	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Rock bass	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
<b>TOTAL RELEASED</b>	<b>0.1414 (0.1514)</b>	<b>0 (0)</b>	<b>167 (161)</b>	<b>167 (161)</b>	<b>NAN (0.0000)</b>	<b>0 (0)</b>	<b>0.1414 (0.1514)</b>	<b>167 (161)</b>
<b>TOTAL CATCH</b>	<b>0.3241 (0.2443)</b>	<b>7 (11)</b>	<b>377 (226)</b>	<b>384 (227)</b>	<b>NAN (0)</b>	<b>0 (0)</b>	<b>0.3241 (0.2443)</b>	<b>384 (227)</b>
<b>ANGLER HOURS</b>		<b>376 (316)</b>	<b>808 (454)</b>	<b>1,184 (553)</b>		<b>0 (0)</b>		<b>1,184 (553)</b>
<b>ANGLER TRIPS</b>		<b>112 (100)</b>	<b>218 (133)</b>	<b>330 (166)</b>		<b>0 (0)</b>		<b>330 (166)</b>

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

Species	C/H	April-May	June	Season	Win C/H	Win Season	Sum C/H	Sum Season
HARVEST								
Walleye	0.1412 (0.0956)	150 (138)	147 (113)	297 (178)	NAN (0)	0 (0)	0.1412 (0.0956)	297 (178)
Largemouth bass	0.0046 (0.0084)	0 (0)	10 (17)	10 (17)	NAN (0)	0 (0)	0.0046 (0.0084)	10 (17)
Smallmouth bass	0.0065 (0.0108)	0 (0)	14 (22)	14 (22)	NAN (0)	0 (0)	0.0065 (0.0108)	14 (22)
Yellow Perch	0.0276 (0.0596)	0 (0)	58 (124)	58 (124)	NAN (0)	0 (0)	0.0276 (0.0596)	58 (124)
Bluegill	0.1115 (0.1940)	0 (0)	235 (401)	235 (401)	NAN (0)	0 (0)	0.1115 (0.1940)	235 (401)
Rock bass	0.0019 (0.0039)	0 (0)	4 (8)	4 (8)	NAN (0)	0 (0)	0.0019 (0.0039)	4 (8)
TOTAL HARVEST	0.2934 (0.2361)	150 (138)	467 (436)	617 (457)	NAN (0.0000)	0 (0)	0.2934 (0.2361)	617 (457)
RELEASED								
Walleye	0.0570 (0.0933)	23 (30)	97 (190)	120 (193)	NAN (0)	0 (0)	0.0570 (0.0933)	120 (193)
Northern pike	0 (0)	0 (0)	0 (0)	0 (0)	NAN (0)	0 (0)	0 (0)	0 (0)
Largemouth bass	0.0368 (0.0361)	0 (0)	77 (72)	77 (72)	NAN (0)	0 (0)	0.0368 (0.0361)	77 (72)
Smallmouth bass	0.0463 (0.0378)	24 (31)	74 (66)	97 (73)	NAN (0)	0 (0)	0.0463 (0.0378)	97 (73)
Yellow Perch	0.0038 (0.0081)	0 (0)	8 (17)	8 (17)	NAN (0)	0 (0)	0.0038 (0.0081)	8 (17)
Bluegill	0.0076 (0.0159)	0 (0)	16 (33)	16 (33)	NAN (0)	0 (0)	0.0076 (0.0159)	16 (33)
Rock bass	0.0731 (0.1036)	0 (0)	154 (213)	154 (213)	NAN (0)	0 (0)	0.0731 (0.1036)	154 (213)
TOTAL RELEASED	0.2247 (0.1621)	47 (43)	426 (304)	473 (307)	NAN (0.0000)	0 (0)	0.2247 (0.1621)	473 (307)
TOTAL CATCH	0.5181 (0.3082)	197 (145)	893 (532)	1,090 (551)	NAN (0)	0 (0)	0.5181 (0.3082)	1,090 (551)
ANGLER HOURS		745 (456)	1,359 (478)	2,104 (661)		0 (0)		2,104 (661)
ANGLER TRIPS		234 (162)	348 (135)	583 (211)		0 (0)		583 (211)



Estimated harvest, catch per hour, and fishing pressure for East and West Twin Lakes total. Two standard errors are given in parentheses.

Species	C/H	April-May	June	Season	Win C/H	Win Season	Sum C/H	Sum Season
HARVEST								
Walleye	0.1249 (0.0719)	157 (139)	254 (158)	411 (210)	NAN (0)	0 (0)	0.1249 (0.0719)	411 (210)
Largemouth bass	0.0029 (0.0054)	0 (0)	10 (17)	10 (17)	NAN (0)	0 (0)	0.0029 (0.0054)	10 (17)
Smallmouth bass	0.0042 (0.0069)	0 (0)	14 (22)	14 (22)	NAN (0)	0 (0)	0.0042 (0.0069)	14 (22)
Yellow Perch	0.0490 (0.0527)	0 (0)	161 (168)	161 (168)	NAN (0)	0 (0)	0.0490 (0.0527)	161 (168)
Bluegill	0.0714 (0.1235)	0 (0)	235 (401)	235 (401)	NAN (0)	0 (0)	0.0714 (0.1235)	235 (401)
Rock bass	0.0012 (0.0025)	0 (0)	4 (8)	4 (8)	NAN (0)	0 (0)	0.0012 (0.0025)	4 (8)
TOTAL HARVEST	0.2536 (0.1616)	157 (139)	677 (464)	834 (484)	NAN (0.0000)	0 (0)	0.2536 (0.1616)	834 (484)
RELEASED								
Walleye	0.0434 (0.0602)	23 (30)	120 (192)	143 (194)	NAN (0)	0 (0)	0.0434 (0.0602)	143 (194)
Northern pike	0.0012 (0.0024)	0 (0)	4 (8)	4 (8)	NAN (0)	0 (0)	0.0012 (0.0024)	4 (8)
Largemouth bass	0.0235 (0.0227)	0 (0)	77 (72)	77 (72)	NAN (0)	0 (0)	0.0235 (0.0227)	77 (72)
Smallmouth bass	0.0319 (0.0241)	24 (31)	81 (68)	105 (74)	NAN (0)	0 (0)	0.0319 (0.0241)	105 (74)
Yellow Perch	0.0429 (0.0498)	0 (0)	141 (159)	141 (159)	NAN (0)	0 (0)	0.0429 (0.0498)	141 (159)
Bluegill	0.0049 (0.0101)	0 (0)	16 (33)	16 (33)	NAN (0)	0 (0)	0.0049 (0.0101)	16 (33)
Rock bass	0.0468 (0.0658)	0 (0)	154 (213)	154 (213)	NAN (0)	0 (0)	0.0468 (0.0658)	154 (213)
TOTAL RELEASED	0.1947 (0.1172)	47 (43)	593 (344)	640 (347)	NAN (0.0000)	0 (0)	0.1947 (0.1172)	640 (347)
TOTAL CATCH	0.4483 (0.2159)	204 (145)	1,270 (578)	1,474 (596)	NAN (0)	0 (0)	0.4483 (0.2159)	1,474 (596)
ANGLER HOURS		1,121 (555)	2,167 (659)	3,288 (862)		0 (0)		3,288 (862)
ANGLER TRIPS		347 (190)	567 (190)	913 (268)		0 (0)		913 (268)