

# FISHERIES DIVISION

## TECHNICAL REPORT

Sportfishing Catch and Effort from the Michigan Waters of Lakes Michigan, Huron, Erie, and Superior and their Important Tributary Streams,

April 1, 1988 - March 31, 1989

(Appendices)

Gerald P. Rakoczy  
and  
Richard D. Rogers

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Appendices**

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<sup>1</sup>These Appendices accompany: Rakoczy, G. P., and R. D. Rogers. 1990. Sportfishing catch and effort from the Michigan waters of lakes Michigan, Huron, Erie, and Superior, and their important tributary streams, April 1, 1988 - March 31, 1989, Fisheries Technical Report 90-2a.

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## APPENDICES

**SECTION I: LAKE MICHIGAN CATCH AND EFFORT ESTIMATES BY SITE**

Appendix 1.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for New Buffalo, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month								Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0521 (0.0427)	0 (0)	11,177 (10,670)	1,888 (1,661)	692 (672)	42 (92)	191 (324)	0 (0)	0 (0)	13,990 (10,825)
Chinook salmon	0.0222 (0.0135)	0 (0)	987 (1,946)	2,775 (2,140)	151 (205)	446 (518)	1,603 (1,343)	0 (0)	0 (0)	5,962 (3,237)
Rainbow trout	0.0112 (0.0077)	0 (0)	205 (530)	1,896 (1,706)	518 (529)	250 (367)	138 (221)	0 (0)	0 (0)	3,007 (1,912)
Brown trout	0.0006 (0.0008)	0 (0)	42 (88)	0 (0)	0 (0)	32 (69)	92 (196)	0 (0)	0 (0)	166 (226)
Lake trout	0.0213 (0.0134)	0 (0)	0 (0)	3,725 (2,908)	118 (150)	246 (348)	1,630 (1,390)	0 (0)	0 (0)	5,719 (3,245)
Northern pike	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	20 (42)	0 (0)	20 (42)
Channel catfish	0.0002 (0.0003)	0 (0)	0 (0)	0 (0)	38 (82)	19 (53)	0 (0)	0 (0)	0 (0)	57 (98)
Rock bass	0.0006 (0.0013)	0 (0)	0 (0)	0 (0)	152 (327)	0 (0)	0 (0)	0 (0)	0 (0)	152 (327)
Yellow perch	1.7867 (0.9418)	0 (0)	0 (0)	0 (0)	106,528 (80,370)	31,649 (23,150)	329,266 (199,652)	12,276 (12,183)	0 (0)	479,719 (216,805)
Other	0.0004 (0.0009)	0 (0)	0 (0)	0 (0)	114 (245)	0 (0)	0 (0)	0 (0)	0 (0)	114 (245)
Total	1.8954 (0.9584)	0 (0)	12,411 (10,859)	10,284 (4,325)	108,311 (80,376)	32,684 (23,162)	332,920 (199,662)	12,296 (12,183)	0 (0)	508,906 (217,133)
Angler hours		0 (0)	24,624 (18,678)	67,398 (43,417)	45,026 (25,025)	29,765 (17,144)	90,188 (46,130)	6,972 (3,796)	4,517 (3,112)	268,490 (72,843)
Angler trips		0 (0)	6,017 (4,686)	9,801 (6,285)	8,355 (4,396)	5,250 (2,995)	18,129 (9,125)	1,412 (790)	1,442 (1,010)	50,406 (13,216)
Angler days		0 (0)	5,918 (4,684)	9,256 (5,990)	8,107 (4,365)	5,134 (2,955)	18,129 (9,125)	1,412 (790)	1,181 (835)	49,137 (13,046)

Appendix 2.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for St. Joseph, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month								Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0195 (0.0130)	727 (893)	5,743 (5,052)	492 (524)	584 (1,201)	232 (361)	523 (565)	0 (0)	16 (32)	8,317 (5,337)
Chinook salmon	0.0267 (0.0110)	0 (0)	38 (73)	2,467 (1,506)	292 (601)	2,464 (1,692)	5,569 (3,441)	531 (695)	21 (42)	11,382 (4,222)
Rainbow trout	0.0131 (0.0065)	6 (14)	181 (370)	598 (730)	623 (1,204)	2,944 (1,943)	639 (679)	0 (0)	616 (609)	5,607 (2,594)
Atlantic salmon	<0.0001 (<0.0001)	0 (0)	3 (7)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (7)
Brown trout	0.0013 (0.0009)	90 (124)	280 (311)	23 (37)	0 (0)	111 (135)	46 (106)	0 (0)	0 (0)	550 (378)
Lake trout	0.0165 (0.0084)	0 (0)	0 (0)	3,164 (2,230)	584 (1,201)	563 (540)	2,713 (2,127)	0 (0)	0 (0)	7,024 (3,351)
Channel catfish	0.0013 (0.0017)	0 (0)	0 (0)	85 (144)	11 (22)	377 (672)	0 (0)	48 (105)	24 (48)	545 (697)
Smallmouth bass	0.0006 (0.0010)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	273 (468)	0 (0)	273 (468)
Largemouth bass	0.0002 (0.0003)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	46 (106)	30 (72)	0 (0)	76 (128)
Yellow perch	1.3502 (0.6678)	0 (0)	0 (0)	2,222 (3,280)	67,880 (65,497)	246,697 (153,546)	196,946 (189,656)	54,229 (81,215)	7,963 (19,137)	575,937 (266,099)
Freshwater drum	0.0009 (0.0014)	0 (0)	0 (0)	0 (0)	75 (154)	293 (593)	0 (0)	24 (53)	0 (0)	392 (615)
Lake whitefish	0.0004 (0.0008)	0 (0)	0 (0)	171 (353)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	171 (353)
Total	1.4308 (0.6733)	823 (902)	6,245 (5,076)	9,222 (4,354)	70,049 (65,533)	253,681 (153,572)	206,482 (189,701)	55,135 (81,219)	8,640 (19,147)	610,277 (266,222)
Angler hours		1,908 (1,872)	42,626 (12,765)	71,907 (34,506)	51,790 (21,517)	110,372 (36,679)	106,568 (34,616)	27,809 (26,499)	13,563 (24,545)	426,543 (75,289)
Angler trips		532 (524)	8,911 (3,023)	10,673 (5,020)	11,077 (4,858)	22,875 (8,061)	16,877 (5,512)	5,424 (4,596)	2,813 (4,578)	79,182 (13,988)
Angler days		426 (422)	7,981 (2,984)	10,134 (4,797)	10,793 (4,844)	22,187 (8,026)	16,877 (5,512)	5,057 (4,456)	2,787 (4,578)	76,242 (13,826)



Appendix 3.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Saugatuck boat fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month				Season
		May	Jun	Jul	Aug	
Coho salmon	0.0094 (0.0121)	528 (620)	0 (0)	220 (360)	3,060 (4,633)	3,808 (4,688)
Chinook salmon	0.0511 (0.0427)	7,691 (5,534)	54 (126)	1,028 (1,178)	11,862 (14,210)	20,635 (15,296)
Rainbow trout	0.0067 (0.0096)	774 (806)	23 (54)	0 (0)	1,911 (3,638)	2,708 (3,727)
Brown trout	0.0004 (0.0005)	176 (226)	0 (0)	0 (0)	0 (0)	176 (226)
Lake trout	0.0336 (0.0242)	7,362 (5,625)	661 (909)	2,630 (2,500)	2,927 (5,453)	13,580 (8,274)
Northern pike	0.0002 (0.0004)	92 (194)	0 (0)	0 (0)	0 (0)	92 (194)
White sucker	0.0004 (0.0009)	170 (358)	0 (0)	0 (0)	0 (0)	170 (358)
Redhorse spp.	0.0003 (0.0007)	0 (0)	133 (308)	0 (0)	0 (0)	133 (308)
Channel catfish	0.0215 (0.0215)	340 (716)	2,539 (3,383)	5,800 (7,217)	0 (0)	8,679 (8,003)
Pumpkinseed	0.0004 (0.0009)	170 (358)	0 (0)	0 (0)	0 (0)	170 (358)
Smallmouth bass	0.0005 (0.0012)	0 (0)	209 (484)	0 (0)	0 (0)	209 (484)
Black crappie	0.0002 (0.0004)	92 (194)	0 (0)	0 (0)	0 (0)	92 (194)
Yellow perch	0.4563 (0.3517)	0 (0)	8,154 (12,728)	123,563 (61,485)	52,734 (105,835)	184,451 (123,059)
Walleye	0.0297 (0.0234)	3,899 (4,521)	27 (63)	8,083 (6,915)	0 (0)	12,009 (8,262)
Freshwater drum	0.0058 (0.0098)	0 (0)	2,351 (3,888)	0 (0)	0 (0)	2,351 (3,888)

Appendix 3.—Continued:

Species	Total catch per hour	Month				Season
		May	Jun	Jul	Aug	
Total	0.6167 (0.3904)	21,294 (9,200)	14,151 (13,775)	141,324 (62,354)	72,494 (107,086)	249,263 (125,019)
Angler hours		83,436 (48,268)	42,875 (38,206)	158,269 (35,677)	119,623 (138,938)	404,203 (156,096)
Angler trips		14,240 (7,931)	7,911 (7,309)	32,792 (7,735)	21,270 (23,580)	76,213 (27,059)
Angler days		13,892 (7,738)	7,911 (7,309)	32,660 (7,730)	21,270 (23,580)	75,733 (27,001)

Appendix 4.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for South Haven, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0050 (0.0041)	0 (0)	448 (425)	50 (82)	1,122 (1,182)	0 (0)	0 (0)	0 (0)	1,620 (1,259)
Chinook salmon	0.0189 (0.0127)	22 (50)	192 (241)	65 (93)	4,352 (3,397)	1,391 (1,609)	101 (154)	9 (20)	6,132 (3,771)
Rainbow trout	0.0100 (0.0111)	0 (0)	90 (182)	97 (231)	2,614 (3,460)	254 (389)	0 (0)	190 (140)	3,245 (3,497)
Brown trout	0.0011 (0.0010)	124 (164)	195 (268)	0 (0)	0 (0)	10 (20)	37 (78)	0 (0)	366 (324)
Lake trout	0.0139 (0.0087)	0 (0)	621 (487)	422 (362)	2,065 (1,917)	1,351 (1,549)	26 (56)	0 (0)	4,485 (2,539)
Channel catfish	0.0003 (0.0006)	0 (0)	0 (0)	0 (0)	0 (0)	95 (193)	0 (0)	0 (0)	95 (193)
Yellow perch	1.9117 (0.9591)	0 (0)	48,964 (33,599)	43,642 (27,870)	498,947 (256,281)	19,874 (12,111)	7,506 (9,165)	0 (0)	618,933 (260,416)
Burbot	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9 (19)	9 (19)
Total	1.9609 (0.9666)	146 (171)	50,510 (33,608)	44,276 (27,874)	509,100 (256,337)	22,975 (12,323)	7,670 (9,167)	208 (143)	634,885 (260,482)
Angler hours		4,230 (3,378)	34,002 (15,142)	31,769 (15,780)	205,168 (84,743)	29,005 (9,215)	15,707 (8,205)	3,885 (1,931)	323,766 (88,471)
Angler trips		1,852 (1,588)	7,148 (3,060)	7,868 (3,538)	39,884 (15,923)	6,582 (1,891)	4,023 (1,997)	1,148 (587)	68,505 (16,907)
Angler days		1,670 (1,504)	6,389 (2,886)	7,868 (3,538)	39,124 (15,918)	6,443 (1,889)	3,672 (1,905)	1,090 (558)	66,256 (16,852)

Appendix 5.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Holland, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0020 (0.0025)	217 (530)	140 (209)	0 (0)	0 (0)	207 (359)	0 (0)	0 (0)	564 (673)
Chinook salmon	0.0575 (0.0333)	155 (379)	6,238 (3,742)	6,996 (4,952)	2,757 (3,718)	308 (474)	0 (0)	0 (0)	16,454 (7,261)
Rainbow trout	0.0028 (0.0032)	0 (0)	259 (281)	0 (0)	438 (783)	109 (219)	0 (0)	0 (0)	806 (860)
Brown trout	0.0025 (0.0030)	0 (0)	502 (690)	0 (0)	209 (434)	0 (0)	0 (0)	0 (0)	711 (815)
Lake trout	0.0213 (0.0146)	0 (0)	1,768 (1,364)	4,155 (3,208)	0 (0)	183 (265)	0 (0)	0 (0)	6,106 (3,496)
Channel catfish	0.0005 (0.0010)	0 (0)	0 (0)	0 (0)	153 (307)	0 (0)	0 (0)	0 (0)	153 (307)
Bluegill	0.0041 (0.0072)	0 (0)	0 (0)	208 (468)	0 (0)	978 (1,980)	0 (0)	0 (0)	1,186 (2,035)
White crappie	0.0003 (0.0006)	0 (0)	0 (0)	0 (0)	72 (143)	0 (0)	0 (0)	0 (0)	72 (143)
Yellow perch	0.4164 (0.7339)	0 (0)	3,363 (6,020)	8,948 (13,392)	84,382 (202,625)	22,435 (28,615)	0 (0)	0 (0)	119,128 (205,162)
Freshwater drum	0.0021 (0.0043)	0 (0)	0 (0)	0 (0)	613 (1,227)	0 (0)	0 (0)	0 (0)	613 (1,227)
Total	0.5096 (0.7427)	372 (652)	12,270 (7,260)	20,307 (14,642)	88,624 (202,665)	24,220 (28,692)	0 (0)	0 (0)	145,793 (205,338)
Angler hours		3,560 (4,882)	52,949 (13,191)	55,808 (20,483)	134,604 (102,970)	14,346 (9,955)	21,911 (13,536)	2,929 (1,597)	286,107 (107,262)
Angler trips		1,164 (1,586)	12,294 (3,010)	15,559 (5,201)	57,097 (55,889)	5,107 (3,282)	7,366 (4,050)	1,382 (885)	99,969 (56,482)
Angler days		1,142 (1,584)	12,136 (2,990)	15,559 (5,201)	57,097 (55,889)	5,048 (3,278)	7,366 (4,050)	1,040 (766)	99,388 (56,478)

Appendix 6.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Port Sheldon boat fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0048 (0.0076)	305 (803)	74 (108)	0 (0)	190 (387)	0 (0)	0 (0)	569 (898)
Chinook salmon	0.0787 (0.0307)	54 (158)	3,230 (1,654)	0 (0)	4,013 (2,305)	1,113 (1,732)	864 (196)	9,274 (3,333)
Rainbow trout	0.0091 (0.0028)	0 (0)	137 (147)	0 (0)	71 (145)	0 (0)	864 (196)	1,072 (285)
Brown trout	0.0028 (0.0033)	0 (0)	325 (377)	0 (0)	0 (0)	0 (0)	0 (0)	325 (377)
Lake trout	0.0240 (0.0149)	0 (0)	1,032 (659)	0 (0)	1,798 (1,565)	0 (0)	0 (0)	2,830 (1,698)
Yellow perch	1.0546 (0.5208)	0 (0)	2,707 (3,958)	0 (0)	101,781 (56,014)	15,662 (14,022)	4,048 (7,369)	124,198 (58,345)
Total	1.1741 (0.5278)	359 (818)	7,505 (4,360)	0 (0)	107,853 (56,085)	16,775 (14,129)	5,776 (7,374)	138,268 (58,474)
Angler hours		4,579 (7,329)	32,007 (5,704)	16,686 (7,250)	46,439 (12,862)	16,845 (7,513)	17,899 (3,717)	117,769 (17,943)
Angler trips		1,591 (2,599)	7,348 (1,441)	0 (0)	11,861 (3,555)	7,646 (3,887)	3,161 (656)	31,607 (6,083)
Angler days		1,404 (2,299)	7,255 (1,430)	0 (0)	11,744 (3,520)	7,517 (3,869)	3,161 (656)	31,081 (5,926)

Appendix 7.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Grand Haven, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0039 (0.0039)	465 (488)	252 (524)	0 (0)	647 (1,349)	0 (0)	300 (439)	0 (0)	1,664 (1,589)
Chinook salmon	0.0278 (0.0278)	151 (322)	1,781 (1,967)	6,221 (10,019)	1,069 (1,188)	2,270 (4,949)	377 (758)	68 (143)	11,937 (11,439)
Rainbow trout	0.0043 (0.0033)	0 (0)	0 (0)	356 (755)	857 (1,041)	0 (0)	72 (151)	580 (362)	1,865 (1,344)
Brown trout	0.0021 (0.0016)	242 (254)	378 (416)	161 (324)	128 (258)	0 (0)	0 (0)	12 (24)	921 (640)
Lake trout	0.0253 (0.0165)	76 (161)	1,082 (1,599)	6,187 (5,150)	2,974 (3,276)	535 (688)	0 (0)	0 (0)	10,854 (6,349)
Channel catfish	0.0008 (0.0009)	0 (0)	0 (0)	0 (0)	237 (351)	91 (128)	0 (0)	23 (46)	351 (376)
White bass	0.0002 (0.0004)	0 (0)	0 (0)	0 (0)	0 (0)	81 (163)	0 (0)	0 (0)	81 (163)
Rock bass	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	38 (79)	0 (0)	0 (0)	0 (0)	38 (79)
Smallmouth bass	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	36 (73)	0 (0)	0 (0)	36 (73)
Yellow perch	0.3648 (0.2256)	0 (0)	1,080 (1,277)	23,430 (11,272)	88,913 (44,690)	380 (657)	297 (451)	42,396 (72,533)	156,496 (85,951)
Freshwater drum	0.0004 (0.0006)	0 (0)	0 (0)	0 (0)	177 (261)	0 (0)	0 (0)	0 (0)	177 (261)
Total	0.4299 (0.2367)	934 (657)	4,573 (2,916)	36,355 (15,957)	95,040 (44,861)	3,393 (5,044)	1,046 (997)	43,079 (72,534)	184,420 (86,969)
Angler hours		27,120 (11,418)	39,315 (35,638)	147,472 (57,937)	94,933 (34,566)	67,571 (93,014)	33,775 (13,721)	18,810 (6,977)	428,996 (121,822)
Angler trips		6,624 (2,621)	8,440 (6,851)	32,553 (11,479)	25,753 (7,767)	10,051 (9,714)	7,755 (3,087)	5,808 (2,138)	96,984 (18,825)
Angler days		5,881 (2,446)	8,343 (6,836)	32,406 (11,473)	24,768 (7,435)	10,051 (9,714)	7,382 (3,063)	5,732 (2,135)	94,563 (18,653)

Appendix 8.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Muskegon, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Pink salmon	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	33 (70)	0 (0)	0 (0)	0 (0)	33 (70)
Coho salmon	0.0049 (0.0067)	16 (35)	35 (59)	0 (0)	1,086 (1,523)	0 (0)	0 (0)	0 (0)	1,137 (1,525)
Chinook salmon	0.0216 (0.0140)	49 (87)	788 (610)	1,916 (2,403)	1,053 (1,323)	499 (497)	345 (462)	314 (637)	4,964 (2,962)
Rainbow trout	0.0034 (0.0037)	14 (31)	153 (219)	0 (0)	279 (602)	254 (490)	0 (0)	80 (149)	780 (821)
Brown trout	0.0027 (0.0020)	143 (136)	269 (338)	0 (0)	47 (99)	147 (224)	0 (0)	17 (38)	623 (441)
Brook trout	0.0001 (0.0002)	20 (43)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	20 (43)
Lake trout	0.0135 (0.0094)	0 (0)	712 (703)	2,038 (1,750)	361 (692)	0 (0)	0 (0)	0 (0)	3,111 (2,009)
Rainbow trout	0.0048 (0.0102)	0 (0)	0 (0)	0 (0)	0 (0)	1,112 (2,343)	0 (0)	0 (0)	1,112 (2,343)
White perch	0.0024 (0.0052)	0 (0)	0 (0)	0 (0)	559 (1,204)	0 (0)	0 (0)	0 (0)	559 (1,204)
Rock bass	0.0003 (0.0006)	0 (0)	73 (149)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	73 (149)
Smallmouth bass	0.0003 (0.0006)	0 (0)	0 (0)	0 (0)	0 (0)	58 (122)	0 (0)	0 (0)	58 (122)
Yellow perch	0.8292 (0.3816)	76,229 (53,480)	47,252 (28,349)	23,860 (29,220)	22,015 (21,061)	3,707 (7,339)	0 (0)	17,901 (18,353)	190,964 (73,156)
Total	0.8834 (0.3899)	76,471 (53,480)	49,282 (28,368)	27,814 (29,371)	25,433 (21,212)	5,777 (7,740)	345 (462)	18,312 (18,365)	203,434 (73,313)
Angler hours		14,874 (7,875)	23,354 (7,178)	67,299 (31,172)	75,638 (46,260)	20,007 (8,700)	18,255 (10,614)	10,869 (5,712)	230,296 (58,704)
Angler trips		4,886 (2,346)	5,903 (1,851)	15,310 (6,572)	16,715 (9,330)	5,437 (2,242)	5,558 (3,385)	3,234 (1,459)	57,043 (12,561)
Angler days		4,512 (2,291)	5,729 (1,838)	15,310 (6,572)	16,436 (9,331)	5,172 (2,212)	5,558 (3,385)	3,234 (1,459)	55,951 (12,545)

Appendix 9.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Pentwater, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0117 (0.0101)	0 (0)	40 (93)	389 (816)	505 (971)	974 (1,283)	901 (1,409)	250 (551)	3,059 (2,356)
Chinook salmon	0.1020 (0.0762)	42 (88)	1,177 (1,319)	513 (768)	16,962 (15,924)	6,154 (5,041)	1,796 (2,567)	0 (0)	26,644 (16,968)
Rainbow trout	0.0202 (0.0197)	0 (0)	0 (0)	169 (315)	401 (638)	337 (486)	3,919 (4,595)	438 (423)	5,264 (4,694)
Brown trout	0.0051 (0.0051)	372 (341)	268 (509)	42 (91)	171 (388)	0 (0)	491 (986)	0 (0)	1,344 (1,227)
Lake trout	0.0276 (0.0295)	0 (0)	428 (571)	529 (556)	6,244 (7,118)	0 (0)	0 (0)	0 (0)	7,201 (7,162)
Rock bass	0.0002 (0.0004)	0 (0)	0 (0)	62 (130)	0 (0)	0 (0)	0 (0)	0 (0)	62 (130)
Smallmouth bass	0.0025 (0.0062)	0 (0)	0 (0)	0 (0)	662 (1,631)	0 (0)	0 (0)	0 (0)	662 (1,631)
Yellow perch	0.1020 (0.1330)	0 (0)	3,478 (4,647)	5,843 (5,536)	17,235 (32,347)	0 (0)	90 (233)	0 (0)	26,646 (33,146)
Total	0.2714 (0.1809)	414 (352)	5,391 (4,892)	7,547 (5,687)	42,180 (36,807)	7,465 (5,224)	7,197 (5,542)	688 (695)	70,882 (38,336)
Angler hours		5,837 (3,493)	20,233 (17,205)	28,547 (17,049)	90,683 (74,710)	68,742 (49,505)	43,922 (41,594)	3,210 (2,805)	261,174 (101,829)
Angler trips		1,795 (916)	5,151 (3,535)	8,379 (3,992)	16,844 (12,981)	12,892 (8,113)	8,741 (6,677)	1,176 (1,080)	54,978 (17,588)
Angler days		1,549 (907)	4,195 (3,090)	7,223 (3,815)	16,844 (12,981)	12,523 (7,950)	8,741 (6,677)	1,176 (1,080)	52,251 (17,389)



Appendix 10.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Ludington, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month								Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Coho salmon	0.0049 (0.0044)	0 (0)	0 (0)	21 (44)	79 (166)	711 (395)	381 (709)	673 (1,350)	0 (0)	1,865 (1,585)
Chinook salmon	0.0818 (0.0460)	0 (0)	10,582 (9,473)	293 (350)	7,943 (8,479)	10,854 (6,824)	1,175 (1,527)	107 (226)	0 (0)	30,954 (14,516)
Rainbow trout	0.0082 (0.0067)	149 (182)	137 (164)	68 (101)	184 (287)	526 (474)	729 (1,440)	1,179 (1,744)	135 (139)	3,107 (2,348)
Brown trout	0.0063 (0.0042)	943 (774)	974 (1,066)	101 (149)	311 (394)	53 (116)	0 (0)	0 (0)	0 (0)	2,382 (1,388)
Lake trout	0.0240 (0.0198)	0 (0)	925 (863)	1,489 (946)	5,812 (6,787)	851 (785)	0 (0)	0 (0)	0 (0)	9,077 (6,951)
Northern pike	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	36 (53)	0 (0)	0 (0)	36 (53)
Yellow perch	0.4719 (0.3064)	190 (384)	12,109 (24,831)	46,730 (28,855)	119,454 (94,483)	0 (0)	0 (0)	0 (0)	0 (0)	178,483 (101,864)
Round whitefish	0.0002 (0.0005)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	61 (160)	0 (0)	61 (160)
Other	0.0001 (0.0002)	0 (0)	31 (63)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	31 (63)
Total	0.5976 (0.3297)	1,282 (883)	24,758 (26,613)	48,702 (28,873)	133,783 (95,107)	12,995 (6,898)	2,321 (2,216)	2,020 (2,223)	135 (139)	225,996 (103,177)
Angler hours		11,524 (5,879)	63,863 (41,294)	29,556 (8,446)	109,372 (68,554)	109,860 (65,728)	44,081 (52,810)	8,739 (10,437)	1,206 (399)	378,201 (117,170)
Angler trips		4,167 (2,133)	11,406 (6,607)	7,479 (1,801)	30,156 (16,214)	22,806 (13,294)	10,097 (12,124)	2,340 (2,823)	442 (159)	88,893 (25,418)
Angler days		3,440 (1,769)	10,450 (6,138)	5,925 (1,558)	28,163 (16,062)	18,270 (10,956)	10,097 (12,124)	2,139 (2,788)	442 (159)	78,926 (24,001)

Appendix 11.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Manistee, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month								Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Coho salmon	0.0112 (0.0079)	0 (0)	0 (0)	0 (0)	222 (411)	585 (396)	3,931 (3,252)	175 (255)	34 (98)	4,947 (3,313)
Chinook salmon	0.0472 (0.0199)	1,219 (1,320)	2,186 (2,036)	2,190 (2,408)	4,148 (3,600)	4,869 (3,213)	6,201 (4,400)	0 (0)	90 (169)	20,903 (7,373)
Rainbow trout	0.0229 (0.0123)	144 (211)	85 (167)	1,622 (2,378)	4,346 (3,937)	563 (666)	347 (558)	2,050 (1,325)	998 (818)	10,155 (4,940)
Brown trout	0.0193 (0.0109)	6,593 (4,002)	530 (419)	453 (473)	813 (1,700)	66 (136)	79 (164)	20 (39)	0 (0)	8,554 (4,399)
Lake trout	0.0167 (0.0093)	0 (0)	1,101 (1,533)	847 (1,187)	4,880 (3,210)	562 (377)	0 (0)	0 (0)	0 (0)	7,390 (3,769)
Rock bass	0.0032 (0.0056)	230 (450)	0 (0)	1,176 (2,391)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,406 (2,433)
Yellow perch	0.6873 (0.5020)	17,213 (19,990)	14,594 (11,386)	14,668 (19,607)	250,335 (208,538)	0 (0)	177 (309)	1,101 (1,685)	6,142 (6,667)	304,230 (210,830)
Round whitefish	0.0034 (0.0030)	0 (0)	109 (223)	84 (202)	384 (849)	0 (0)	0 (0)	573 (586)	355 (717)	1,505 (1,292)
Total	0.8112 (0.5124)	25,399 (20,435)	18,605 (11,679)	21,040 (20,082)	265,128 (208,640)	6,645 (3,329)	10,735 (5,511)	3,919 (2,237)	7,619 (6,758)	359,090 (211,140)
Angler hours		56,917 (27,152)	37,799 (25,814)	46,865 (41,180)	125,475 (63,673)	59,326 (25,591)	84,841 (49,980)	24,464 (11,345)	6,962 (3,217)	442,649 (102,204)
Angler trips		12,987 (6,080)	9,067 (4,643)	8,839 (7,032)	24,983 (10,728)	16,129 (6,455)	18,212 (9,947)	6,592 (2,359)	1,552 (764)	98,361 (19,231)
Angler days		10,718 (5,151)	7,309 (4,174)	7,686 (6,427)	22,765 (10,090)	15,262 (5,949)	18,212 (9,947)	5,057 (2,293)	1,552 (764)	88,561 (18,090)

Appendix 12.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Portage Lake, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0200 (0.0171)	0 (0)	0 (0)	0 (0)	397 (542)	2,002 (1,893)	19 (44)	4 (11)	2,422 (1,970)
Chinook salmon	0.0559 (0.0320)	0 (0)	633 (656)	608 (734)	1,883 (1,672)	3,634 (2,854)	3 (6)	0 (0)	6,761 (3,451)
Rainbow trout	0.0469 (0.0278)	0 (0)	87 (137)	1,342 (1,360)	3,963 (2,648)	268 (479)	7 (13)	0 (0)	5,667 (3,018)
Brown trout	0.0013 (0.0017)	13 (37)	61 (107)	82 (165)	0 (0)	0 (0)	0 (0)	0 (0)	156 (200)
Lake trout	0.0150 (0.0122)	0 (0)	65 (148)	130 (161)	1,346 (1,324)	268 (361)	0 (0)	0 (0)	1,809 (1,390)
Rock bass	0.0078 (0.0071)	0 (0)	133 (288)	695 (739)	0 (0)	109 (220)	0 (0)	0 (0)	937 (823)
Pumpkinseed	0.0002 (0.0004)	0 (0)	0 (0)	0 (0)	0 (0)	22 (44)	0 (0)	0 (0)	22 (44)
Bluegill	0.0002 (0.0005)	0 (0)	21 (51)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	21 (51)
Black crappie	0.0034 (0.0055)	0 (0)	0 (0)	0 (0)	0 (0)	414 (659)	0 (0)	0 (0)	414 (659)
Yellow perch	0.1470 (0.1751)	0 (0)	17,066 (20,635)	560 (979)	0 (0)	144 (307)	0 (0)	0 (0)	17,770 (20,660)
Round whitefish	0.0002 (0.0005)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	21 (51)	21 (51)
Total	0.2978 (0.1927)	13 (37)	18,066 (20,649)	3,417 (1,986)	7,589 (3,443)	6,861 (3,559)	29 (46)	25 (52)	36,000 (21,327)
Angler hours		3,117 (3,150)	13,578 (6,447)	12,227 (6,378)	40,840 (15,298)	47,907 (25,601)	2,992 (3,111)	233 (349)	120,894 (31,487)
Angler trips		1,232 (1,119)	3,678 (1,638)	2,149 (988)	7,674 (3,132)	11,453 (5,040)	1,298 (1,430)	177 (258)	27,661 (6,499)
Angler days		771 (703)	3,122 (1,501)	1,903 (907)	7,674 (3,132)	9,661 (4,698)	1,298 (1,430)	160 (241)	24,589 (6,128)

Appendix 13.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Frankfort, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Pink salmon	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	26 (64)	0 (0)	0 (0)	26 (64)
Coho salmon	0.0208 (0.0093)	0 (0)	0 (0)	68 (111)	49 (85)	2,947 (1,802)	2,335 (1,113)	57 (73)	5,456 (2,124)
Chinook salmon	0.0439 (0.0177)	0 (0)	407 (444)	712 (687)	1,729 (1,714)	4,953 (2,906)	3,552 (1,698)	183 (144)	11,536 (3,867)
Rainbow trout	0.0194 (0.0108)	60 (121)	41 (61)	1,929 (2,193)	790 (810)	157 (161)	1,078 (823)	1,030 (714)	5,085 (2,588)
Brown trout	0.0097 (0.0072)	1,087 (1,396)	117 (95)	805 (1,080)	91 (111)	200 (282)	92 (158)	149 (175)	2,541 (1,809)
Lake trout	0.0352 (0.0166)	0 (0)	1,411 (953)	4,034 (3,084)	2,017 (1,817)	1,783 (999)	0 (0)	0 (0)	9,245 (3,837)
Northern pike	0.0004 (0.0007)	0 (0)	0 (0)	0 (0)	77 (164)	12 (26)	0 (0)	13 (27)	102 (168)
Largemouth bass	0.0009 (0.0020)	0 (0)	0 (0)	247 (540)	0 (0)	0 (0)	0 (0)	0 (0)	247 (540)
Yellow perch	0.0143 (0.0259)	404 (631)	24 (49)	2,919 (6,705)	384 (505)	0 (0)	26 (56)	0 (0)	3,757 (6,754)
Lake whitefish	0.0018 (0.0025)	30 (60)	4 (9)	0 (0)	0 (0)	0 (0)	0 (0)	439 (657)	473 (660)
Round whitefish	0.0043 (0.0037)	0 (0)	16 (32)	0 (0)	0 (0)	0 (0)	0 (0)	1,117 (952)	1,133 (953)
Other	0.0004 (0.0007)	0 (0)	9 (17)	82 (180)	0 (0)	14 (36)	0 (0)	0 (0)	105 (184)
Total	0.1513 (0.0496)	1,581 (1,538)	2,029 (1,059)	10,796 (7,826)	5,137 (2,683)	10,092 (3,578)	7,083 (2,197)	2,988 (1,380)	39,706 (9,564)
Angler hours		14,383 (4,836)	13,828 (4,301)	41,680 (28,180)	33,502 (26,031)	70,452 (32,491)	70,055 (28,370)	18,601 (5,034)	262,501 (58,305)
Angler trips		3,935 (1,243)	3,503 (958)	8,238 (5,244)	7,021 (5,083)	13,949 (5,943)	16,628 (6,304)	4,873 (1,224)	58,147 (11,505)
Angler days		3,757 (1,238)	3,379 (936)	7,777 (4,874)	6,569 (4,781)	12,316 (5,215)	14,955 (5,669)	4,448 (1,143)	53,201 (10,472)

Appendix 14.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Platte Bay, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0596 (0.0369)	0 (0)	0 (0)	3 (9)	0 (0)	64 (117)	1,689 (1,028)	13 (21)	1,769 (1,035)
Chinook salmon	0.0360 (0.0209)	0 (0)	0 (0)	0 (0)	23 (32)	270 (336)	763 (470)	12 (24)	1,068 (579)
Rainbow trout	0.0234 (0.0223)	253 (590)	0 (0)	0 (0)	0 (0)	0 (0)	200 (188)	240 (180)	693 (645)
Brown trout	0.0090 (0.0127)	143 (344)	0 (0)	3 (8)	16 (26)	90 (141)	10 (21)	5 (10)	267 (373)
Brook trout	0.0057 (0.0133)	169 (394)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	169 (394)
Lake trout	0.0043 (0.0050)	0 (0)	0 (0)	94 (135)	0 (0)	33 (51)	0 (0)	0 (0)	127 (144)
Yellow perch	0.0763 (0.0705)	0 (0)	71 (73)	1,101 (1,433)	1,092 (1,449)	0 (0)	0 (0)	0 (0)	2,264 (2,039)
Lake whitefish	0.0052 (0.0059)	0 (0)	6 (13)	85 (130)	63 (113)	0 (0)	0 (0)	0 (0)	154 (173)
Round whitefish	0.0003 (0.0007)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	8 (18)	8 (18)
Total	0.2198 (0.0960)	565 (788)	77 (74)	1,286 (1,445)	1,194 (1,454)	457 (386)	2,662 (1,146)	278 (184)	6,519 (2,515)
Angler hours		2,682 (1,632)	1,406 (370)	1,570 (896)	2,210 (1,297)	3,392 (2,904)	14,872 (4,656)	3,527 (1,224)	29,659 (6,074)
Angler trips		787 (426)	498 (180)	384 (222)	498 (300)	903 (791)	3,426 (1,056)	839 (304)	7,335 (1,479)
Angler days		768 (410)	483 (178)	380 (221)	483 (292)	889 (787)	3,180 (1,003)	762 (270)	6,945 (1,426)

Appendix 15.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Leland, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month			Season
		Jun	Jul	Aug	
Coho salmon	0.0052 (0.0051)	0 (0)	0 (0)	757 (716)	757 (716)
Chinook salmon	0.0603 (0.0310)	146 (263)	3,233 (1,886)	5,443 (3,318)	8,822 (3,826)
Rainbow trout	0.0359 (0.0283)	0 (0)	5,161 (3,881)	97 (221)	5,258 (3,887)
Brown trout	0.0006 (0.0009)	0 (0)	41 (84)	40 (92)	81 (125)
Lake trout	0.0688 (0.0327)	3,236 (2,491)	4,177 (2,348)	2,656 (1,862)	10,069 (3,897)
Rock bass	0.0020 (0.0034)	299 (501)	0 (0)	0 (0)	299 (501)
Smallmouth bass	0.0061 (0.0117)	888 (1,684)	0 (0)	0 (0)	888 (1,684)
Yellow perch	0.0162 (0.0213)	2,377 (3,055)	0 (0)	0 (0)	2,377 (3,055)
Lake whitefish	0.0020 (0.0045)	299 (669)	0 (0)	0 (0)	299 (669)
Other	0.0033 (0.0069)	0 (0)	486 (1,010)	0 (0)	486 (1,010)
<b>Total</b>	<b>0.2004</b> <b>(0.0765)</b>	<b>7,245</b> <b>(4,375)</b>	<b>13,098</b> <b>(5,016)</b>	<b>8,993</b> <b>(3,879)</b>	<b>29,336</b> <b>(7,704)</b>
<b>Angler hours</b>		<b>17,689</b> <b>(9,624)</b>	<b>63,192</b> <b>(23,843)</b>	<b>65,534</b> <b>(31,375)</b>	<b>146,415</b> <b>(40,565)</b>
<b>Angler trips</b>		<b>3,691</b> <b>(1,919)</b>	<b>11,052</b> <b>(4,286)</b>	<b>10,710</b> <b>(5,163)</b>	<b>25,453</b> <b>(6,979)</b>
<b>Angler days</b>		<b>3,691</b> <b>(1,919)</b>	<b>10,979</b> <b>(4,251)</b>	<b>10,710</b> <b>(5,163)</b>	<b>25,380</b> <b>(6,958)</b>

Appendix 16.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for West Grand Traverse Bay, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Chinook salmon	0.0243 (0.0108)	0 (0)	82 (175)	0 (0)	805 (704)	1,989 (1,229)	511 (478)	97 (98)	3,484 (1,508)
Rainbow trout	0.0035 (0.0029)	137 (146)	0 (0)	0 (0)	38 (77)	333 (388)	0 (0)	0 (0)	508 (422)
Brown trout	0.0039 (0.0073)	20 (40)	0 (0)	0 (0)	0 (0)	533 (1,039)	0 (0)	0 (0)	553 (1,040)
Lake trout	0.0616 (0.0192)	0 (0)	700 (596)	2,909 (1,473)	5,009 (2,031)	228 (273)	0 (0)	0 (0)	8,846 (2,593)
White sucker	0.0012 (0.0020)	168 (274)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	168 (274)
Channel catfish	0.0008 (0.0016)	0 (0)	0 (0)	112 (226)	0 (0)	0 (0)	0 (0)	0 (0)	112 (226)
Smallmouth bass	0.0280 (0.0272)	0 (0)	0 (0)	830 (1,257)	853 (1,725)	1,419 (2,905)	0 (0)	912 (1,441)	4,014 (3,882)
Yellow perch	0.0611 (0.0453)	988 (2,025)	0 (0)	559 (1,131)	0 (0)	0 (0)	0 (0)	7,224 (5,998)	8,771 (6,431)
Lake whitefish	0.0056 (0.0052)	0 (0)	96 (197)	0 (0)	714 (720)	0 (0)	0 (0)	0 (0)	810 (746)
Round whitefish	0.0084 (0.0098)	0 (0)	0 (0)	53 (107)	0 (0)	0 (0)	0 (0)	1,148 (1,392)	1,201 (1,396)
Total	0.1984 (0.0616)	1,313 (2,049)	878 (652)	4,463 (2,256)	7,419 (2,850)	4,502 (3,355)	511 (478)	9,381 (6,325)	28,467 (8,326)
Angler hours		8,390 (2,190)	8,755 (3,696)	15,661 (3,508)	48,534 (9,415)	39,959 (9,553)	15,923 (3,311)	6,268 (2,187)	143,490 (15,047)
Angler trips		2,492 (675)	2,241 (986)	3,748 (877)	11,402 (2,276)	9,226 (2,247)	4,507 (950)	1,893 (653)	35,509 (3,709)
Angler days		2,123 (576)	2,022 (920)	3,619 (876)	10,444 (2,201)	8,271 (2,127)	3,618 (855)	1,730 (626)	31,827 (3,527)

Appendix 17.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for East Grand Traverse Bay, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Chinook salmon	0.0197 (0.0124)	353 (507)	321 (610)	0 (0)	130 (139)	576 (425)	99 (111)	0 (0)	1,479 (917)
Rainbow trout	0.0068 (0.0049)	240 (246)	0 (0)	0 (0)	211 (244)	52 (106)	0 (0)	5 (13)	508 (363)
Brown trout	0.0082 (0.0115)	71 (143)	32 (40)	0 (0)	490 (844)	20 (41)	0 (0)	0 (0)	613 (858)
Lake trout	0.0652 (0.0246)	0 (0)	1,004 (470)	1,812 (1,205)	1,428 (969)	654 (757)	0 (0)	0 (0)	4,898 (1,785)
Channel catfish	0.0003 (0.0006)	0 (0)	0 (0)	0 (0)	0 (0)	24 (49)	0 (0)	0 (0)	24 (49)
Smallmouth bass	0.0168 (0.0140)	0 (0)	0 (0)	250 (353)	1,009 (979)	0 (0)	0 (0)	0 (0)	1,259 (1,041)
Yellow perch	0.0985 (0.0550)	1,923 (2,697)	368 (719)	3,382 (2,275)	0 (0)	0 (0)	374 (563)	1,354 (1,812)	7,401 (4,070)
Lake whitefish	0.1441 (0.0550)	0 (0)	159 (170)	6,403 (3,422)	1,281 (1,473)	0 (0)	1,933 (1,020)	1,046 (999)	10,822 (3,993)
Round whitefish	0.0035 (0.0042)	0 (0)	125 (252)	138 (183)	0 (0)	0 (0)	0 (0)	0 (0)	263 (311)
Burbot	0.0005 (0.0008)	0 (0)	40 (66)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	40 (66)
Total	0.3636 (0.0898)	2,587 (2,759)	2,049 (1,099)	11,985 (4,301)	4,549 (2,204)	1,326 (877)	2,406 (1,170)	2,405 (2,069)	27,307 (6,212)
Angler hours		8,337 (1,664)	9,757 (1,726)	11,389 (2,480)	14,408 (3,562)	17,619 (4,449)	8,607 (2,343)	4,983 (1,627)	75,100 (7,247)
Angler trips		1,905 (467)	2,341 (450)	2,595 (598)	3,268 (874)	4,788 (1,261)	2,053 (567)	1,334 (471)	18,284 (1,917)
Angler days		1,639 (426)	2,268 (447)	2,558 (593)	2,791 (808)	4,023 (1,166)	1,839 (534)	1,159 (408)	16,277 (1,788)



Appendix 18.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Elk Rapids, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0050 (0.0050)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	144 (156)	73 (148)	217 (215)
Chinook salmon	0.0184 (0.0113)	0 (0)	0 (0)	0 (0)	273 (364)	103 (164)	308 (258)	121 (111)	805 (488)
Rainbow trout	0.0312 (0.0158)	863 (542)	214 (219)	0 (0)	0 (0)	0 (0)	151 (302)	140 (187)	1,368 (684)
Brown trout	0.0036 (0.0043)	58 (119)	0 (0)	0 (0)	0 (0)	0 (0)	45 (91)	56 (113)	159 (188)
Lake trout	0.0160 (0.0137)	0 (0)	0 (0)	82 (108)	555 (578)	63 (96)	0 (0)	0 (0)	700 (596)
Redhorse spp.	0.0016 (0.0032)	0 (0)	71 (143)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	71 (143)
Rock bass	0.0026 (0.0036)	0 (0)	0 (0)	115 (157)	0 (0)	0 (0)	0 (0)	0 (0)	115 (157)
Smallmouth bass	0.1036 (0.0587)	0 (0)	40 (81)	2,500 (1,866)	1,272 (1,375)	290 (438)	435 (938)	0 (0)	4,537 (2,540)
Yellow perch	0.1873 (0.1222)	45 (91)	7,123 (5,188)	660 (908)	0 (0)	0 (0)	378 (630)	0 (0)	8,206 (5,305)
Lake whitefish	0.0457 (0.0632)	0 (0)	1,612 (2,635)	0 (0)	0 (0)	392 (838)	0 (0)	0 (0)	2,004 (2,765)
Total	0.4150 (0.1547)	966 (562)	9,060 (5,825)	3,357 (2,084)	2,100 (1,535)	848 (964)	1,461 (1,211)	390 (286)	18,182 (6,590)
Angler hours		7,318 (1,529)	7,585 (818)	6,111 (927)	10,230 (2,678)	3,587 (1,161)	5,842 (1,317)	3,139 (538)	43,812 (3,796)
Angler trips		2,005 (517)	2,362 (310)	1,854 (312)	2,953 (741)	833 (260)	1,588 (338)	881 (184)	12,476 (1,107)
Angler days		1,142 (310)	1,986 (340)	1,721 (291)	2,849 (744)	749 (256)	1,011 (301)	538 (146)	9,996 (1,014)

Appendix 19.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Charlevoix, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Chinook salmon	0.0844 (0.0636)	0 (0)	0 (0)	768 (579)	1,123 (725)	3,364 (3,699)	5,255 (3,814)
Rainbow trout	0.0017 (0.0019)	0 (0)	3 (7)	72 (109)	22 (45)	9 (18)	106 (119)
Brown trout	0.0022 (0.0024)	0 (0)	92 (115)	0 (0)	44 (91)	0 (0)	136 (147)
Lake trout	0.1086 (0.0520)	674 (639)	1,755 (1,530)	2,425 (1,602)	1,911 (1,802)	0 (0)	6,765 (2,926)
Smallmouth bass	0.0044 (0.0098)	0 (0)	0 (0)	277 (615)	0 (0)	0 (0)	277 (615)
Total	0.2013 (0.0881)	674 (639)	1,850 (1,534)	3,542 (1,814)	3,100 (1,945)	3,373 (3,699)	12,539 (4,850)
Angler hours		1,867 (959)	6,947 (4,184)	22,095 (9,774)	16,740 (5,696)	14,638 (4,055)	62,287 (12,761)
Angler trips		550 (305)	1,425 (772)	5,988 (2,843)	5,385 (2,050)	4,811 (1,455)	18,159 (3,885)
Angler days		475 (287)	1,294 (681)	5,700 (2,833)	5,385 (2,050)	4,774 (1,449)	17,628 (3,857)

Appendix 20.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Petoskey, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0003 (0.0006)	0 (0)	0 (0)	0 (0)	0 (0)	9 (17)	0 (0)	9 (17)
Chinook salmon	0.0186 (0.0101)	0 (0)	0 (0)	0 (0)	190 (138)	242 (176)	169 (205)	601 (303)
Rainbow trout	0.0042 (0.0046)	53 (85)	0 (0)	0 (0)	66 (114)	16 (29)	0 (0)	135 (145)
Brown trout	0.0006 (0.0011)	0 (0)	0 (0)	2 (4)	17 (35)	0 (0)	0 (0)	19 (35)
Lake trout	0.1497 (0.0782)	0 (0)	831 (482)	2,308 (2,038)	1,298 (990)	389 (307)	0 (0)	4,826 (2,337)
Smallmouth bass	0.0038 (0.0048)	0 (0)	0 (0)	0 (0)	68 (140)	40 (59)	16 (34)	124 (156)
Yellow perch	0.0131 (0.0085)	0 (0)	0 (0)	0 (0)	421 (262)	0 (0)	0 (0)	421 (262)
Total	0.1903 (0.0827)	53 (85)	831 (482)	2,310 (2,038)	2,060 (1,050)	696 (360)	185 (208)	6,135 (2,381)
Angler hours		1,705 (1,120)	1,782 (673)	5,648 (3,932)	9,271 (3,139)	5,599 (1,757)	8,233 (3,068)	32,238 (6,287)
Angler trips		496 (311)	763 (286)	1,943 (1,246)	2,490 (840)	1,845 (651)	2,344 (948)	9,881 (1,939)
Angler days		496 (311)	727 (279)	1,878 (1,190)	2,321 (798)	1,764 (645)	2,168 (888)	9,354 (1,853)

Appendix 21.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Harbor Springs boat fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Chinook salmon	0.0036 (0.0063)	0 (0)	0 (0)	0 (0)	33 (57)	0 (0)	33 (57)
Brown trout	0.0127 (0.0177)	0 (0)	0 (0)	0 (0)	0 (0)	117 (158)	117 (158)
Lake trout	0.1120 (0.1130)	67 (110)	0 (0)	965 (977)	0 (0)	0 (0)	1,032 (983)
White perch	0.0071 (0.0148)	0 (0)	0 (0)	0 (0)	0 (0)	65 (134)	65 (134)
Rock bass	0.0067 (0.0145)	0 (0)	0 (0)	0 (0)	62 (133)	0 (0)	62 (133)
Smallmouth bass	0.0556 (0.0912)	0 (0)	0 (0)	322 (796)	190 (205)	0 (0)	512 (822)
Yellow perch	0.3428 (0.4439)	887 (1,375)	0 (0)	0 (0)	0 (0)	2,271 (3,704)	3,158 (3,951)
Total	0.5405 (0.4863)	954 (1,379)	0 (0)	1,287 (1,260)	285 (251)	2,453 (3,710)	4,979 (4,161)
Angler hours		829 (654)	3,448 (2,402)	3,132 (1,758)	1,536 (1,145)	3,715 (2,147)	9,212 (3,072)
Angler trips		379 (342)	0 (0)	1,228 (724)	503 (391)	1,328 (691)	3,438 (1,128)
Angler days		379 (342)	0 (0)	1,166 (678)	503 (391)	1,328 (691)	3,376 (1,099)

Appendix 22.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Manistique-Thompson, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0115 (0.0152)	0 (0)	0 (0)	0 (0)	44 (28)	2 (4)	281 (430)	327 (431)
Chinook salmon	0.0342 (0.0104)	0 (0)	8 (18)	0 (0)	557 (182)	147 (111)	257 (174)	969 (276)
Rainbow trout	0.0231 (0.0123)	0 (0)	448 (265)	0 (0)	101 (56)	0 (0)	106 (209)	655 (342)
Brown trout	0.0004 (0.0004)	0 (0)	0 (0)	0 (0)	12 (12)	0 (0)	0 (0)	12 (12)
Brook trout	0.0024 (0.0050)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	67 (139)	67 (139)
Northern pike	0.0113 (0.0063)	0 (0)	0 (0)	0 (0)	92 (85)	115 (98)	115 (121)	322 (177)
Channel catfish	0.0047 (0.0048)	0 (0)	0 (0)	0 (0)	43 (49)	89 (125)	0 (0)	132 (134)
Rock bass	0.0002 (0.0004)	0 (0)	0 (0)	0 (0)	0 (0)	7 (15)	0 (0)	7 (15)
Smallmouth bass	0.0087 (0.0063)	0 (0)	0 (0)	0 (0)	167 (141)	79 (104)	0 (0)	246 (175)
Largemouth bass	0.0002 (0.0004)	0 (0)	0 (0)	0 (0)	0 (0)	6 (12)	0 (0)	6 (12)
Black crappie	0.0176 (0.0342)	0 (0)	0 (0)	0 (0)	473 (965)	25 (50)	0 (0)	498 (966)
Yellow perch	0.0072 (0.0055)	0 (0)	0 (0)	0 (0)	161 (149)	44 (44)	0 (0)	205 (155)
Walleye	0.0164 (0.0103)	0 (0)	55 (117)	0 (0)	232 (150)	78 (59)	101 (208)	466 (288)
Other	0.0005 (0.0007)	0 (0)	0 (0)	0 (0)	14 (20)	0 (0)	0 (0)	14 (20)

Appendix 22.—Continued:

Species	Total catch per hour	Month					Season	
		Apr	May	Jun	Jul	Aug		Sep
Total	0.1384 (0.0459)	0 (0)	511 (290)	0 (0)	1,896 (1,021)	592 (238)	927 (580)	3,926 (1,233)
Angler hours		0 (0)	3,152 (993)	0 (0)	12,395 (2,054)	4,353 (824)	8,474 (1,771)	28,374 (3,003)
Angler trips		0 (0)	876 (331)	0 (0)	3,284 (770)	1,297 (319)	2,433 (587)	7,890 (1,072)
Angler days		0 (0)	830 (305)	0 (0)	3,284 (770)	1,297 (319)	2,433 (587)	7,844 (1,064)

Appendix 23.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Big Bay de Noc, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Chinook salmon	0.0055 (0.0070)	0 (0)	0 (0)	0 (0)	347 (437)	0 (0)	0 (0)	347 (437)
Splake	0.0024 (0.0048)	150 (302)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	150 (302)
Northern pike	0.0188 (0.0107)	0 (0)	447 (315)	0 (0)	257 (448)	337 (350)	148 (133)	1,189 (663)
Black bullhead	0.0002 (0.0004)	0 (0)	0 (0)	0 (0)	13 (25)	0 (0)	0 (0)	13 (25)
Brown bullhead	0.0032 (0.0041)	38 (75)	0 (0)	0 (0)	0 (0)	162 (245)	0 (0)	200 (256)
Rock bass	0.0036 (0.0055)	0 (0)	0 (0)	15 (31)	50 (101)	164 (332)	0 (0)	229 (348)
Smallmouth bass	0.1264 (0.0484)	0 (0)	4,701 (2,133)	829 (576)	1,842 (1,896)	464 (296)	179 (165)	8,015 (2,931)
Yellow perch	1.3834 (0.3746)	65,605 (16,220)	8,449 (6,458)	964 (1,812)	9,012 (12,313)	2,447 (1,623)	1,242 (1,879)	87,719 (21,584)
Walleye	0.0184 (0.0168)	0 (0)	0 (0)	61 (124)	95 (195)	1,012 (1,034)	0 (0)	1,168 (1,060)
Total	1.5617 (0.3868)	65,793 (16,223)	13,597 (6,808)	1,869 (1,906)	11,616 (12,476)	4,586 (2,021)	1,569 (1,891)	99,030 (21,828)
Angler hours		17,208 (3,077)	13,918 (1,813)	5,844 (3,737)	11,862 (4,039)	10,235 (2,328)	4,343 (1,697)	63,410 (7,165)
Angler trips		3,753 (703)	3,070 (559)	1,987 (1,521)	2,907 (1,112)	2,302 (585)	1,190 (562)	15,209 (2,239)
Angler days		3,248 (627)	2,333 (508)	1,953 (1,521)	2,294 (944)	2,228 (585)	854 (445)	12,910 (2,097)

Appendix 24.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Little Bay de Noc, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Chinook salmon	0.0230 (0.0137)	0 (0)	0 (0)	0 (0)	2,606 (1,549)	1,015 (1,446)	14 (29)	0 (0)	3,635 (2,119)
Brown trout	0.0005 (0.0007)	43 (87)	0 (0)	0 (0)	34 (70)	0 (0)	0 (0)	0 (0)	77 (112)
Northern pike	0.0126 (0.0069)	0 (0)	393 (345)	834 (724)	194 (322)	208 (372)	331 (473)	31 (64)	1,991 (1,055)
Black bullhead	0.0007 (0.0014)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	110 (225)	110 (225)
Brown bullhead	0.0018 (0.0017)	0 (0)	283 (270)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	283 (270)
Channel catfish	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	18 (38)	18 (38)
White perch	0.0007 (0.0015)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	108 (227)	0 (0)	108 (227)
Rock bass	0.0375 (0.0332)	0 (0)	1,028 (1,287)	573 (748)	748 (153)	2,845 (4,857)	722 (1,055)	0 (0)	5,916 (5,191)
Pumpkinseed	0.0058 (0.0055)	0 (0)	441 (610)	73 (147)	236 (489)	161 (329)	0 (0)	0 (0)	911 (861)
Bluegill	0.0001 (0.0002)	0 (0)	21 (42)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	21 (42)
Smallmouth bass	0.0153 (0.0097)	0 (0)	729 (992)	1,166 (1,050)	455 (378)	32 (66)	25 (40)	0 (0)	2,407 (1,495)
White crappie	0.0017 (0.0023)	0 (0)	258 (372)	0 (0)	0 (0)	0 (0)	14 (29)	0 (0)	272 (373)
Black crappie	0.0080 (0.0070)	139 (224)	693 (920)	432 (540)	0 (0)	0 (0)	0 (0)	0 (0)	1,264 (1,090)
Yellow perch	0.3836 (0.2094)	6,100 (3,647)	13,800 (6,898)	2,682 (2,917)	6,706 (4,497)	19,086 (30,031)	8,479 (5,295)	3,651 (3,808)	60,504 (32,156)
Walleye	0.0795 (0.0265)	0 (0)	2,099 (909)	2,277 (1,065)	847 (650)	4,291 (2,522)	1,690 (1,804)	1,330 (1,719)	12,534 (3,867)
Other	0.0003 (0.0006)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	55 (113)	55 (113)



Appendix 24.—Continued:

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Total	0.5713 (0.2208)	6,282 (3,655)	19,745 (7,253)	8,037 (3,485)	11,826 (4,854)	27,638 (30,564)	11,383 (5,717)	5,195 (4,186)	90,106 (32,955)
Angler hours		5,097 (2,113)	33,057 (6,559)	29,234 (6,986)	33,783 (9,872)	27,603 (11,151)	20,342 (7,547)	8,607 (3,751)	157,723 (19,726)
Angler trips		1,934 (830)	9,975 (1,736)	8,746 (2,042)	9,884 (2,468)	9,721 (5,039)	6,264 (2,195)	2,935 (1,229)	49,459 (6,759)
Angler days		1,598 (725)	7,555 (1,468)	6,350 (1,595)	7,531 (1,965)	9,066 (4,961)	5,378 (2,044)	2,282 (1,055)	39,760 (6,244)

Appendix 25.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Cedar River to Stoney Point, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0021 (0.0043)	0 (0)	0 (0)	0 (0)	145 (293)	0 (0)	0 (0)	145 (293)
Chinook salmon	0.0067 (0.0043)	1 (1)	0 (0)	0 (0)	453 (287)	0 (0)	0 (0)	454 (287)
Rainbow trout	0.0001 (0.0002)	0 (0)	9 (19)	0 (0)	0 (0)	0 (0)	0 (0)	9 (19)
Brown trout	0.0034 (0.0029)	196 (191)	36 (42)	0 (0)	0 (0)	0 (0)	0 (0)	232 (196)
Brook trout	0.0001 (0.0002)	7 (12)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7 (12)
Lake trout	0.0001 (0.0002)	9 (19)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9 (19)
Splake	0.0083 (0.0050)	393 (301)	174 (148)	0 (0)	0 (0)	0 (0)	0 (0)	567 (335)
Northern pike	0.0005 (0.0010)	0 (0)	0 (0)	36 (73)	0 (0)	0 (0)	0 (0)	36 (73)
White perch	0.0111 (0.0225)	0 (0)	0 (0)	758 (1,536)	0 (0)	0 (0)	0 (0)	758 (1,536)
Rock bass	0.0056 (0.0059)	0 (0)	0 (0)	141 (190)	0 (0)	238 (348)	0 (0)	379 (396)
Smallmouth bass	0.1360 (0.0684)	0 (0)	54 (114)	1,195 (902)	7,104 (4,263)	645 (1,096)	256 (194)	9,254 (4,499)
Yellow perch	0.2126 (0.1286)	0 (0)	81 (171)	10,100 (7,776)	0 (0)	4,289 (3,560)	0 (0)	14,470 (8,554)
Total	0.3867 (0.1525)	606 (357)	354 (257)	12,230 (7,980)	7,702 (4,283)	5,172 (3,741)	256 (194)	26,320 (9,811)
Angler hours		2,860 (2,196)	7,260 (3,799)	16,585 (3,124)	31,136 (6,207)	8,712 (2,952)	1,515 (971)	68,068 (8,786)
Angler trips		594 (428)	1,850 (776)	5,602 (1,260)	11,942 (3,498)	2,276 (801)	234 (151)	22,498 (3,908)
Angler days		594 (428)	1,818 (759)	5,602 (1,260)	10,867 (3,603)	2,276 (801)	157 (112)	21,314 (3,998)

Appendix 26.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Menominee, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0011 (0.0015)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	103 (142)	103 (142)
Chinook salmon	0.0230 (0.0140)	0 (0)	0 (0)	33 (55)	777 (549)	1,072 (1,152)	343 (310)	2,225 (1,314)
Rainbow trout	0.0077 (0.0038)	10 (23)	0 (0)	0 (0)	543 (245)	145 (244)	49 (80)	747 (356)
Brown trout	0.0187 (0.0083)	105 (154)	0 (0)	201 (363)	1,214 (558)	295 (331)	0 (0)	1,815 (759)
Brook trout	0.0001 (0.0002)	5 (12)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	5 (12)
Splake	0.0001 (0.0001)	14 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	14 (20)
Rainbow trout	0.0009 (0.0019)	0 (0)	89 (187)	0 (0)	0 (0)	0 (0)	0 (0)	89 (187)
Northern pike	0.0044 (0.0065)	2 (4)	0 (0)	0 (0)	0 (0)	0 (0)	425 (629)	427 (629)
Channel catfish	0.0003 (0.0006)	0 (0)	0 (0)	31 (63)	0 (0)	0 (0)	0 (0)	31 (63)
Rock bass	0.0002 (0.0004)	0 (0)	0 (0)	15 (31)	0 (0)	0 (0)	0 (0)	15 (31)
Pumpkinseed	0.0002 (0.0004)	0 (0)	0 (0)	23 (46)	0 (0)	0 (0)	0 (0)	23 (46)
Bluegill	0.0073 (0.0150)	0 (0)	0 (0)	0 (0)	711 (1,457)	0 (0)	0 (0)	711 (1,457)
Smallmouth bass	0.0022 (0.0029)	10 (20)	70 (144)	16 (32)	0 (0)	114 (236)	0 (0)	210 (279)
Black crappie	0.0057 (0.0116)	0 (0)	0 (0)	548 (1,109)	0 (0)	0 (0)	0 (0)	548 (1,109)
Yellow perch	0.3574 (0.1697)	6,896 (7,349)	15,505 (11,332)	3,495 (1,977)	7,131 (7,053)	1,471 (2,734)	136 (291)	34,634 (15,609)

## Appendix 26.—Continued:

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Walleye	0.0004 (0.0006)	0 (0)	0 (0)	35 (52)	0 (0)	0 (0)	0 (0)	35 (52)
Other	0.0005 (0.0010)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	46 (93)	46 (93)
Total	0.4301 (0.1754)	7,042 (7,351)	15,664 (11,334)	4,397 (2,299)	10,376 (7,248)	3,097 (3,004)	1,102 (782)	41,678 (15,810)
Angler hours		5,669 (3,161)	19,513 (9,522)	9,585 (3,318)	29,140 (6,979)	17,884 (5,540)	15,123 (4,337)	96,914 (14,487)
Angler trips		1,848 (1,007)	5,538 (2,901)	3,731 (1,352)	12,303 (3,250)	5,016 (1,590)	3,877 (993)	32,313 (5,033)
Angler days		1,848 (1,007)	5,162 (2,867)	3,657 (1,346)	10,981 (3,032)	4,822 (1,563)	3,749 (982)	30,219 (4,863)

**SECTION II. LAKE HURON CATCH AND EFFORT ESTIMATES BY SITE**

Appendix 27.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Port Huron boat fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0001 (0.0002)	7 (15)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7 (15)
Chinook salmon	0.0290 (0.0138)	2,677 (1,260)	0 (0)	51 (103)	0 (0)	87 (180)	0 (0)	2,815 (1,277)
Rainbow trout	0.0021 (0.0041)	207 (402)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	207 (402)
Brown trout	0.0002 (0.0003)	18 (27)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	18 (27)
Channel catfish	0.0002 (0.0004)	0 (0)	0 (0)	20 (41)	0 (0)	0 (0)	0 (0)	20 (41)
White perch	0.0014 (0.0022)	8 (16)	0 (0)	13 (28)	0 (0)	118 (214)	0 (0)	139 (216)
White bass	0.0021 (0.0036)	0 (0)	0 (0)	20 (41)	168 (341)	13 (26)	0 (0)	201 (344)
Rock bass	0.0013 (0.0017)	0 (0)	0 (0)	0 (0)	0 (0)	126 (163)	0 (0)	126 (163)
Smallmouth bass	0.0053 (0.0102)	0 (0)	0 (0)	0 (0)	0 (0)	514 (982)	0 (0)	514 (982)
Yellow perch	0.0369 (0.0231)	17 (35)	622 (868)	654 (1,228)	1,659 (1,450)	631 (624)	0 (0)	3,583 (2,180)
Walleye	0.2677 (0.0789)	51 (60)	330 (411)	3,208 (1,661)	14,278 (5,498)	7,054 (3,180)	1,093 (1,369)	26,014 (6,719)
Freshwater drum	0.0036 (0.0039)	0 (0)	0 (0)	34 (69)	77 (156)	235 (334)	5 (9)	351 (375)
Total	0.3498 (0.0899)	2,985 (1,325)	952 (960)	4,000 (2,070)	16,182 (5,698)	8,778 (3,418)	1,098 (1,369)	33,995 (7,279)
Angler hours		10,370 (2,420)	5,467 (2,689)	16,128 (5,076)	37,485 (9,805)	22,481 (6,887)	5,253 (2,833)	97,184 (13,800)
Angler trips		2,467 (689)	1,208 (590)	3,073 (1,047)	8,479 (2,299)	5,195 (1,673)	987 (529)	21,409 (3,207)
Angler days		2,432 (687)	1,089 (544)	3,004 (1,045)	8,479 (2,299)	4,998 (1,650)	987 (529)	20,989 (3,186)

Appendix 28.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Lexington to Port Sanilac, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Pink salmon	0.0004 (0.0005)	44 (68)	43 (90)	0 (0)	0 (0)	0 (0)	0 (0)	87 (113)
Coho salmon	0.0103 (0.0051)	1,403 (840)	49 (81)	764 (586)	78 (78)	0 (0)	34 (56)	2,328 (1,032)
Chinook salmon	0.0575 (0.0248)	8,221 (4,375)	2,947 (1,868)	617 (643)	484 (403)	331 (328)	390 (311)	12,990 (4,838)
Rainbow trout	0.0023 (0.0014)	282 (217)	79 (93)	11 (24)	62 (97)	95 (178)	0 (0)	529 (312)
Atlantic salmon	<0.0001 (<0.0001)	11 (24)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11 (24)
Brown trout	0.0015 (0.0009)	221 (177)	41 (63)	0 (0)	19 (38)	68 (77)	0 (0)	349 (207)
Lake trout	0.0004 (0.0004)	0 (0)	43 (66)	0 (0)	22 (44)	22 (30)	0 (0)	87 (85)
Splake	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	0 (0)	6 (13)	0 (0)	6 (13)
White sucker	0.0002 (0.0006)	0 (0)	39 (108)	0 (0)	0 (0)	0 (0)	0 (0)	39 (108)
Channel catfish	0.0003 (0.0004)	0 (0)	0 (0)	0 (0)	44 (64)	20 (41)	0 (0)	64 (76)
White perch	0.0010 (0.0016)	16 (33)	0 (0)	182 (353)	0 (0)	0 (0)	29 (60)	227 (360)
White bass	0.0003 (0.0004)	0 (0)	10 (27)	0 (0)	19 (39)	44 (91)	0 (0)	73 (103)
Yellow perch	0.0863 (0.0404)	1,650 (3,114)	1,930 (1,541)	5,908 (2,933)	7,396 (6,437)	2,213 (1,665)	400 (502)	19,497 (8,071)
Walleye	0.0039 (0.0036)	115 (100)	310 (665)	17 (35)	256 (304)	170 (278)	7 (15)	875 (790)
Freshwater drum	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	0 (0)	6 (12)	0 (0)	6 (12)

Appendix 28.—Continued:

Species	Total catch per hour	Month					Season	
		Apr	May	Jun	Jul	Aug		Sep
Total	0.1645 (0.0553)	11,963 (5,444)	5,491 (2,520)	7,499 (3,080)	8,380 (6,459)	2,975 (1,734)	860 (596)	37,168 (9,516)
Angler hours		79,755 (38,668)	52,680 (25,819)	24,997 (6,244)	30,889 (10,268)	17,518 (6,145)	20,054 (8,440)	225,893 (49,145)
Angler trips		16,572 (7,581)	10,309 (4,889)	6,548 (1,721)	7,217 (2,538)	5,714 (2,136)	4,808 (2,074)	51,168 (9,982)
Angler days		14,903 (6,989)	9,994 (4,820)	5,666 (1,544)	7,165 (2,531)	4,808 (1,818)	4,033 (1,767)	46,569 (9,343)



Appendix 29.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Eagle Bay to Harbor Beach, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0019 (0.0015)	20 (45)	271 (268)	305 (389)	0 (0)	21 (44)	0 (0)	617 (477)
Chinook salmon	0.0398 (0.0192)	2,469 (2,898)	3,639 (1,782)	873 (764)	1,479 (926)	2,213 (2,288)	2,104 (3,254)	12,777 (5,370)
Rainbow trout	0.0011 (0.0009)	64 (143)	86 (151)	0 (0)	161 (168)	26 (55)	0 (0)	337 (273)
Brown trout	0.0013 (0.0013)	250 (366)	102 (161)	0 (0)	29 (60)	0 (0)	34 (51)	415 (408)
Lake trout	0.0410 (0.0169)	0 (0)	1,429 (1,136)	2,995 (2,097)	7,066 (3,160)	1,647 (1,972)	0 (0)	13,137 (4,423)
Channel catfish	0.0008 (0.0008)	0 (0)	0 (0)	88 (181)	123 (154)	49 (111)	0 (0)	260 (262)
White perch	0.0006 (0.0011)	0 (0)	0 (0)	201 (373)	0 (0)	0 (0)	0 (0)	201 (373)
White bass	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	33 (67)	0 (0)	0 (0)	33 (67)
Rock bass	0.0003 (0.0006)	0 (0)	0 (0)	90 (185)	0 (0)	0 (0)	0 (0)	90 (185)
Smallmouth bass	0.0009 (0.0013)	0 (0)	0 (0)	0 (0)	301 (436)	0 (0)	0 (0)	301 (436)
Yellow perch	0.2176 (0.1350)	282 (516)	4,722 (4,577)	14,235 (12,134)	21,627 (11,325)	25,198 (35,853)	3,721 (4,351)	69,785 (40,013)
Walleye	0.0159 (0.0124)	0 (0)	112 (166)	0 (0)	367 (532)	4,524 (3,752)	89 (100)	5,092 (3,794)
Freshwater drum	0.0003 (0.0005)	0 (0)	0 (0)	0 (0)	44 (90)	67 (154)	0 (0)	111 (178)
Lake whitefish	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	35 (73)	0 (0)	35 (73)

Appendix 29.—Continued:

Species	Total catch per hour	Month					Season	
		Apr	May	Jun	Jul	Aug		Sep
Total	0.3217 (0.1483)	3,085 (2,970)	10,361 (5,056)	18,787 (12,352)	31,230 (11,817)	33,780 (36,176)	5,948 (5,434)	103,191 (40,802)
Angler hours		21,638 (18,993)	73,175 (26,175)	48,708 (20,382)	64,612 (19,871)	71,603 (57,920)	41,012 (23,688)	320,748 (75,974)
Angler trips		3,902 (3,151)	13,509 (4,878)	11,416 (4,649)	14,204 (4,376)	15,020 (12,704)	10,885 (7,572)	68,936 (17,123)
Angler days		3,388 (2,744)	11,772 (4,308)	8,039 (3,325)	10,358 (3,273)	10,856 (9,130)	10,227 (7,521)	54,640 (13,703)

Appendix 30.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Port Austin to Sand Point, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0007 (0.0007)	0 (0)	49 (65)	7 (15)	49 (100)	69 (118)	0 (0)	174 (168)
Chinook salmon	0.0232 (0.0100)	156 (284)	2,351 (1,440)	607 (546)	2,383 (1,814)	533 (396)	99 (166)	6,129 (2,435)
Rainbow trout	0.0009 (0.0008)	0 (0)	22 (45)	0 (0)	172 (186)	37 (51)	0 (0)	231 (198)
Brown trout	0.0012 (0.0021)	27 (62)	0 (0)	0 (0)	283 (529)	0 (0)	0 (0)	310 (533)
Lake trout	0.0180 (0.0082)	0 (0)	1,237 (824)	658 (544)	2,716 (1,754)	123 (112)	0 (0)	4,734 (2,016)
Northern pike	0.0001 (0.0002)	0 (0)	15 (31)	0 (0)	0 (0)	0 (0)	0 (0)	15 (31)
Channel catfish	0.0022 (0.0027)	0 (0)	0 (0)	273 (597)	261 (319)	34 (43)	0 (0)	568 (678)
White bass	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	37 (64)	0 (0)	37 (64)
Rock bass	0.0005 (0.0009)	0 (0)	15 (31)	105 (205)	0 (0)	0 (0)	0 (0)	120 (207)
Pumpkinseed	0.0069 (0.0140)	0 (0)	0 (0)	0 (0)	1,815 (3,683)	0 (0)	0 (0)	1,815 (3,683)
Bluegill	0.0015 (0.0031)	0 (0)	0 (0)	0 (0)	403 (818)	0 (0)	0 (0)	403 (818)
Smallmouth bass	0.0001 (0.0002)	0 (0)	0 (0)	33 (68)	0 (0)	0 (0)	0 (0)	33 (68)
White crappie	0.0001 (0.0002)	0 (0)	30 (63)	0 (0)	0 (0)	0 (0)	0 (0)	30 (63)
Yellow perch	0.4380 (0.1401)	9,147 (6,700)	18,211 (10,957)	10,611 (9,267)	41,401 (19,701)	14,506 (9,410)	21,600 (16,253)	115,476 (31,491)
Walleye	0.0226 (0.0114)	0 (0)	46 (94)	918 (1,635)	2,404 (1,542)	2,488 (1,714)	94 (145)	5,950 (2,832)
Freshwater drum	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	0 (0)	11 (16)	0 (0)	11 (16)

Appendix 30.—Continued:

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Total	0.5160 (0.1490)	9,330 (6,706)	21,976 (11,083)	13,212 (9,463)	51,887 (20,286)	17,838 (9,575)	21,793 (16,254)	136,036 (32,012)
Angler hours		18,111 (9,317)	43,269 (19,104)	40,881 (18,643)	95,672 (26,521)	39,255 (13,605)	26,452 (16,037)	263,640 (44,102)
Angler trips		6,785 (3,577)	7,095 (3,112)	8,335 (3,677)	21,677 (5,776)	8,981 (3,190)	6,085 (3,988)	58,958 (9,769)
Angler days		5,094 (2,615)	6,238 (2,778)	6,627 (3,056)	16,960 (4,532)	6,933 (2,496)	5,486 (3,349)	47,338 (7,866)

Appendix 31.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Sand Point to Sebawaing, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
White sucker	0.0014 (0.0022)	0 (0)	135 (210)	0 (0)	0 (0)	0 (0)	0 (0)	135 (210)
Yellow bullhead	0.0006 (0.0013)	0 (0)	57 (122)	0 (0)	0 (0)	0 (0)	0 (0)	57 (122)
Brown bullhead	0.0067 (0.0077)	8 (15)	252 (306)	40 (92)	360 (674)	0 (0)	0 (0)	660 (746)
Channel catfish	0.1122 (0.0926)	50 (115)	436 (512)	8,854 (8,479)	742 (637)	97 (162)	799 (1,968)	10,978 (8,745)
White perch	0.0067 (0.0144)	0 (0)	0 (0)	0 (0)	0 (0)	660 (1,413)	0 (0)	660 (1,413)
White bass	0.0023 (0.0021)	0 (0)	157 (153)	65 (131)	0 (0)	0 (0)	0 (0)	222 (201)
Rock bass	0.0019 (0.0025)	3 (7)	104 (193)	70 (143)	0 (0)	8 (17)	0 (0)	185 (241)
Pumpkinseed	0.0075 (0.0055)	26 (38)	689 (516)	22 (32)	0 (0)	0 (0)	0 (0)	737 (518)
Bluegill	0.0224 (0.0267)	26 (54)	1,858 (2,518)	267 (499)	42 (89)	0 (0)	0 (0)	2,193 (2,569)
Largemouth bass	0.0060 (0.0062)	0 (0)	590 (593)	0 (0)	0 (0)	0 (0)	0 (0)	590 (593)
White crappie	0.0135 (0.0187)	46 (59)	1,274 (1,809)	0 (0)	0 (0)	0 (0)	0 (0)	1,320 (1,810)
Yellow perch	0.1722 (0.0849)	6,576 (3,313)	3,773 (4,005)	1,465 (1,654)	3,955 (4,890)	1,085 (1,439)	0 (0)	16,854 (7,466)
Walleye	0.0545 (0.0314)	0 (0)	515 (696)	923 (1,050)	2,993 (2,291)	312 (456)	592 (1,046)	5,335 (2,853)
Freshwater drum	0.0064 (0.0056)	0 (0)	199 (323)	275 (350)	143 (234)	9 (20)	0 (0)	626 (531)
Other	0.0041 (0.0039)	73 (120)	220 (321)	35 (71)	70 (110)	0 (0)	0 (0)	398 (367)

Appendix 31.—Continued:

Species	Total catch per hour	Month					Season	
		Apr	May	Jun	Jul	Aug		Sep
Total	0.4184 (0.1557)	6,808 (3,318)	10,259 (5,238)	12,016 (8,727)	8,305 (5,486)	2,171 (2,074)	1,391 (2,229)	40,950 (12,409)
Angler hours		5,598 (1,923)	21,137 (4,251)	21,145 (8,561)	31,437 (13,004)	4,726 (2,968)	13,826 (13,219)	97,869 (21,159)
Angler trips		2,589 (933)	4,271 (1,038)	5,034 (2,040)	6,076 (2,563)	1,035 (612)	2,311 (2,031)	21,316 (4,145)
Angler days		1,840 (655)	3,801 (921)	4,550 (1,916)	5,260 (2,278)	943 (563)	2,063 (1,767)	18,457 (3,685)

Appendix 32.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Sebawaing to Essexville, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
White sucker	0.0006 (0.0009)	68 (97)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	68 (97)
Black bullhead	0.0007 (0.0012)	82 (141)	0 (0)	0 (0)	4 (10)	0 (0)	0 (0)	86 (141)
Yellow bullhead	0.0003 (0.0006)	0 (0)	31 (60)	0 (0)	0 (0)	0 (0)	0 (0)	31 (60)
Brown bullhead	0.0080 (0.0058)	0 (0)	535 (492)	371 (419)	8 (18)	7 (16)	0 (0)	921 (647)
Channel catfish	0.0826 (0.0909)	0 (0)	849 (1,218)	4,998 (9,819)	1,852 (1,857)	1,128 (1,415)	665 (1,488)	9,492 (10,274)
White bass	0.0794 (0.0802)	1,922 (2,060)	1,595 (1,815)	8 (19)	140 (204)	2,966 (6,552)	2,493 (5,581)	9,124 (9,036)
Rock bass	0.0002 (0.0002)	0 (0)	12 (18)	6 (10)	4 (9)	0 (0)	3 (8)	25 (24)
Pumpkinseed	0.0049 (0.0034)	71 (154)	309 (299)	151 (167)	11 (29)	15 (36)	6 (16)	563 (379)
Bluegill	0.0025 (0.0034)	0 (0)	93 (232)	150 (307)	5 (12)	33 (80)	11 (32)	292 (395)
Largemouth bass	0.0002 (0.0004)	0 (0)	22 (47)	0 (0)	0 (0)	0 (0)	0 (0)	22 (47)
White crappie	0.0004 (0.0008)	0 (0)	9 (17)	36 (84)	0 (0)	0 (0)	0 (0)	45 (86)
Yellow perch	0.0610 (0.0490)	2,760 (2,518)	171 (183)	112 (180)	3,961 (4,828)	6 (16)	0 (0)	7,010 (5,451)
Walleye	0.1007 (0.0499)	6 (14)	3,837 (3,730)	1,076 (2,072)	4,914 (2,616)	1,742 (1,575)	0 (0)	11,575 (5,247)
Freshwater drum	0.0092 (0.0174)	0 (0)	72 (145)	941 (1,976)	32 (49)	8 (18)	0 (0)	1,053 (1,982)
Other	0.0011 (0.0015)	0 (0)	39 (75)	3 (7)	84 (151)	0 (0)	0 (0)	126 (169)

Appendix 32.—Continued:

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Total	0.3518 (0.1542)	4,909 (3,261)	7,574 (4,375)	7,852 (10,244)	11,015 (5,803)	5,905 (6,886)	3,178 (5,776)	40,433 (15,785)
Angler hours		8,279 (5,338)	16,562 (8,317)	17,808 (8,751)	37,091 (12,195)	17,876 (10,213)	17,329 (9,803)	114,945 (22,877)
Angler trips		3,009 (2,027)	4,102 (1,776)	4,173 (2,034)	7,232 (2,516)	3,572 (2,046)	4,721 (2,651)	26,809 (5,380)
Angler days		2,015 (1,314)	3,361 (1,528)	2,883 (1,503)	6,699 (2,399)	3,290 (1,957)	3,588 (2,276)	21,836 (4,592)



Appendix 33.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Essexville to the mouth of the Saginaw River, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Brown bullhead	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	6 (11)	0 (0)	0 (0)	6 (11)
Channel catfish	0.1320 (0.3318)	0 (0)	0 (0)	0 (0)	19,818 (49,848)	731 (1,522)	0 (0)	20,549 (49,871)
White bass	0.0001 (0.0003)	0 (0)	18 (44)	0 (0)	0 (0)	0 (0)	0 (0)	18 (44)
Pumpkinseed	0.0001 (0.0003)	0 (0)	18 (44)	0 (0)	0 (0)	0 (0)	0 (0)	18 (44)
Largemouth bass	0.0076 (0.0060)	0 (0)	0 (0)	1,181 (523)	0 (0)	0 (0)	0 (0)	1,181 (523)
White crappie	0.0006 (0.0014)	0 (0)	0 (0)	0 (0)	0 (0)	89 (202)	0 (0)	89 (202)
Yellow perch	0.2645 (0.3044)	9,301 (6,160)	24,017 (36,201)	0 (0)	6,475 (12,805)	1,383 (2,202)	0 (0)	41,176 (38,952)
Walleye	0.1095 (0.1473)	0 (0)	2,799 (5,798)	0 (0)	13,753 (19,161)	496 (693)	0 (0)	17,048 (20,031)
Freshwater drum	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	6 (15)	0 (0)	0 (0)	6 (15)
Total	0.5145 (0.5436)	9,301 (6,160)	26,852 (36,662)	1,181 (523)	40,058 (54,918)	2,699 (2,772)	0 (0)	80,091 (66,378)
Angler hours		8,420 (4,298)	43,943 (23,321)	16,296 (5,759)	81,021 (98,971)	5,988 (3,703)	0 (0)	155,668 (102,002)
Angler trips		6,154 (3,288)	11,889 (5,029)	3,858 (1,319)	18,190 (22,129)	1,071 (720)	0 (0)	41,162 (22,979)
Angler days		6,085 (3,286)	11,889 (5,029)	3,858 (1,319)	16,879 (20,293)	1,071 (720)	0 (0)	39,782 (21,217)

Appendix 34.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the mouth of the Saginaw River to Saganing Creek, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Rainbow trout	0.0001 (0.0002)	0 (0)	17 (37)	0 (0)	0 (0)	0 (0)	0 (0)	17 (37)
Northern pike	0.0010 (0.0018)	0 (0)	0 (0)	30 (65)	0 (0)	217 (434)	0 (0)	247 (439)
Yellow bullhead	0.0004 (0.0009)	0 (0)	0 (0)	89 (192)	0 (0)	0 (0)	0 (0)	89 (192)
Channel catfish	0.0093 (0.0080)	0 (0)	63 (73)	208 (301)	1,280 (1,675)	121 (188)	572 (755)	2,244 (1,873)
White perch	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	18 (37)	0 (0)	0 (0)	18 (37)
White bass	0.0040 (0.0026)	54 (116)	293 (399)	109 (176)	230 (287)	61 (111)	220 (269)	967 (609)
Pumpkinseed	0.0011 (0.0016)	0 (0)	0 (0)	0 (0)	162 (325)	112 (209)	0 (0)	274 (386)
Largemouth bass	0.0011 (0.0023)	0 (0)	0 (0)	266 (558)	0 (0)	0 (0)	0 (0)	266 (558)
Black crappie	0.0007 (0.0007)	0 (0)	0 (0)	67 (139)	20 (41)	22 (47)	67 (101)	176 (183)
Yellow perch	0.5479 (0.2589)	6,462 (6,541)	5,257 (5,839)	7,618 (5,975)	40,451 (25,012)	15,357 (13,859)	56,783 (47,539)	131,928 (56,482)
Walleye	0.1846 (0.0610)	22 (30)	3,846 (3,094)	1,455 (1,551)	29,063 (8,582)	9,369 (7,123)	704 (696)	44,459 (11,698)
Freshwater drum	0.0016 (0.0017)	0 (0)	0 (0)	63 (97)	83 (167)	146 (323)	92 (137)	384 (400)
Other	0.0020 (0.0021)	0 (0)	24 (52)	449 (484)	0 (0)	0 (0)	0 (0)	473 (487)
Total	0.7539 (0.2832)	6,538 (6,542)	9,500 (6,621)	10,354 (6,232)	71,307 (26,500)	25,405 (15,595)	58,438 (47,551)	181,542 (57,724)
Angler hours		5,050 (2,661)	21,807 (14,279)	32,884 (19,290)	114,050 (25,206)	46,903 (29,113)	20,104 (15,948)	240,798 (48,170)
Angler trips		2,457 (1,557)	4,221 (2,812)	7,333 (4,013)	25,299 (5,700)	10,853 (6,967)	4,360 (3,883)	54,523 (11,070)
Angler days		2,266 (1,406)	4,199 (2,782)	6,808 (3,714)	24,875 (5,627)	10,832 (6,961)	4,314 (3,809)	53,294 (10,869)

Appendix 35.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Au Gres to Saganing Creek, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Chinook salmon	0.0002 (0.0003)	0 (0)	50 (79)	0 (0)	0 (0)	0 (0)	0 (0)	50 (79)
Rainbow trout	0.0001 (0.0002)	28 (45)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	28 (45)
White sucker	0.0053 (0.0059)	1,703 (1,830)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,703 (1,830)
Redhorse spp.	0.0002 (0.0004)	76 (168)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	76 (168)
Black bullhead	<0.0001 (<0.0001)	0 (0)	0 (0)	7 (17)	0 (0)	0 (0)	0 (0)	7 (17)
Yellow bullhead	0.0001 (0.0002)	0 (0)	0 (0)	36 (71)	0 (0)	0 (0)	0 (0)	36 (71)
Channel catfish	0.0086 (0.0051)	0 (0)	551 (733)	745 (644)	925 (893)	416 (582)	142 (373)	2,779 (1,492)
White perch	0.0002 (0.0004)	0 (0)	0 (0)	0 (0)	50 (103)	0 (0)	0 (0)	50 (103)
White bass	0.0003 (0.0008)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	103 (271)	103 (271)
Rock bass	0.0009 (0.0013)	0 (0)	0 (0)	0 (0)	276 (433)	20 (45)	0 (0)	296 (435)
Longear sunfish	0.0009 (0.0019)	0 (0)	293 (625)	0 (0)	0 (0)	0 (0)	0 (0)	293 (625)
Smallmouth bass	0.0034 (0.0040)	0 (0)	0 (0)	0 (0)	1,097 (1,271)	0 (0)	0 (0)	1,097 (1,271)
Largemouth bass	0.0032 (0.0033)	0 (0)	967 (1,007)	49 (91)	0 (0)	0 (0)	0 (0)	1,016 (1,011)
White crappie	0.0001 (0.0002)	0 (0)	0 (0)	43 (83)	0 (0)	0 (0)	0 (0)	43 (83)
Yellow perch	1.9397 (0.8388)	39,712 (16,726)	18,072 (12,654)	60,144 (28,542)	146,158 (98,282)	141,960 (84,057)	218,257 (172,637)	624,303 (218,593)
Walleye	0.0350 (0.0225)	0 (0)	203 (278)	473 (482)	6,793 (6,006)	3,744 (2,749)	38 (100)	11,251 (6,629)

Appendix 35.—Continued:

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Freshwater drum	0.0021 (0.0031)	0 (0)	0 (0)	0 (0)	669 (981)	0 (0)	0 (0)	669 (981)
Other	0.0001 (0.0002)	19 (42)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	19 (42)
Total	2.0003 (0.8482)	41,538 (16,827)	20,136 (12,734)	61,497 (28,554)	155,968 (98,483)	146,140 (84,104)	218,540 (172,638)	643,819 (218,716)
Angler hours		29,259 (11,511)	40,565 (21,729)	41,330 (16,512)	105,058 (58,651)	63,218 (31,967)	42,428 (36,492)	321,858 (81,675)
Angler trips		8,241 (3,372)	9,393 (4,460)	8,886 (3,439)	22,777 (12,637)	14,137 (7,075)	9,862 (8,490)	73,296 (18,025)
Angler days		8,241 (3,372)	9,393 (4,460)	8,886 (3,439)	22,777 (12,637)	14,137 (7,075)	9,862 (8,490)	73,296 (18,025)

Appendix 36.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Au Gres, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Pink salmon	0.0003 (0.0004)	0 (0)	15 (32)	0 (0)	45 (66)	0 (0)	0 (0)	60 (73)
Coho salmon	0.0011 (0.0008)	0 (0)	6 (13)	57 (59)	70 (123)	93 (106)	25 (37)	251 (177)
Chinook salmon	0.0216 (0.0090)	50 (61)	2,293 (1,222)	213 (148)	478 (307)	763 (552)	1,235 (1,242)	5,032 (1,860)
Rainbow trout	0.0030 (0.0025)	425 (534)	155 (204)	29 (37)	52 (66)	35 (43)	7 (14)	703 (578)
Brown trout	0.0025 (0.0018)	209 (154)	39 (51)	0 (0)	245 (347)	85 (102)	0 (0)	578 (396)
Lake trout	0.0106 (0.0048)	0 (0)	319 (228)	1,366 (870)	699 (489)	87 (109)	0 (0)	2,471 (1,030)
Rainbow smelt	0.1136 (0.2096)	26,521 (48,680)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	26,521 (48,680)
Northern pike	0.0004 (0.0004)	29 (51)	13 (21)	4 (8)	3 (6)	40 (55)	0 (0)	89 (79)
Channel catfish	0.0048 (0.0028)	0 (0)	0 (0)	20 (27)	783 (562)	155 (127)	168 (256)	1,126 (631)
Rock bass	0.0005 (0.0007)	0 (0)	23 (38)	8 (13)	4 (6)	75 (156)	0 (0)	110 (161)
Pumpkinseed	0.0001 (0.0002)	0 (0)	0 (0)	28 (58)	0 (0)	0 (0)	0 (0)	28 (58)
Smallmouth bass	0.0003 (0.0005)	0 (0)	10 (23)	56 (103)	0 (0)	3 (8)	0 (0)	69 (106)
Yellow perch	1.0534 (0.3357)	9,114 (3,668)	4,739 (3,676)	39,311 (15,980)	113,270 (48,502)	53,883 (32,138)	25,561 (18,005)	245,878 (63,181)
Walleye	0.0193 (0.0083)	4 (7)	1,060 (930)	461 (503)	831 (580)	2,004 (1,268)	151 (135)	4,511 (1,755)
Freshwater drum	0.0004 (0.0004)	0 (0)	0 (0)	15 (28)	76 (85)	0 (0)	0 (0)	91 (89)
Round whitefish	<0.0001 (<0.0001)	3 (5)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (5)

Appendix 36.—Continued:

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Burbot	<0.0001 (<0.0001)	4 (8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4 (8)
Total	1.2318 (0.4133)	36,359 (48,821)	8,672 (3,996)	41,568 (16,013)	116,556 (48,514)	57,223 (32,169)	27,147 (18,050)	287,525 (79,813)
Angler hours		18,968 (4,917)	30,613 (14,331)	36,631 (14,102)	64,251 (20,562)	42,843 (23,789)	40,105 (22,787)	233,411 (44,004)
Angler trips		6,630 (2,014)	6,768 (2,881)	8,004 (2,759)	13,800 (4,269)	9,777 (5,195)	9,575 (5,831)	54,554 (9,959)
Angler days		4,639 (1,423)	5,438 (2,367)	6,863 (2,494)	12,453 (3,919)	8,741 (4,617)	8,406 (5,199)	46,540 (8,806)

Appendix 37.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Oscoda, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		May	Jun	Jul	Aug	Sep	Oct	
Pink salmon	0.0001 (0.0002)	0 (0)	21 (48)	17 (36)	0 (0)	0 (0)	0 (0)	38 (60)
Coho salmon	0.0002 (0.0003)	0 (0)	0 (0)	0 (0)	10 (22)	61 (110)	0 (0)	71 (112)
Chinook salmon	0.0336 (0.0170)	235 (338)	728 (1,230)	643 (450)	6,519 (3,484)	2,186 (1,128)	16 (24)	10,327 (3,904)
Rainbow trout	0.0006 (0.0005)	0 (0)	0 (0)	41 (52)	20 (28)	14 (30)	114 (115)	189 (133)
Brown trout	0.0004 (0.0005)	75 (120)	0 (0)	11 (24)	37 (78)	8 (17)	3 (6)	134 (146)
Lake trout	0.1061 (0.1204)	184 (176)	25,333 (35,174)	6,301 (3,369)	782 (726)	0 (0)	0 (0)	32,600 (35,343)
Channel catfish	0.0003 (0.0004)	0 (0)	77 (136)	0 (0)	23 (48)	0 (0)	0 (0)	100 (144)
Smallmouth bass	0.0005 (0.0008)	0 (0)	0 (0)	76 (159)	74 (156)	0 (0)	0 (0)	150 (223)
Yellow perch	0.0013 (0.0022)	75 (160)	0 (0)	324 (683)	15 (32)	0 (0)	0 (0)	414 (702)
Walleye	0.0026 (0.0020)	275 (379)	155 (331)	11 (24)	246 (232)	99 (115)	18 (31)	804 (567)
Freshwater drum	0.0003 (0.0007)	102 (221)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	102 (221)
Round whitefish	0.0009 (0.0008)	34 (74)	0 (0)	0 (0)	0 (0)	0 (0)	246 (230)	280 (242)
Total	0.1471 (0.1258)	980 (619)	26,314 (35,197)	7,424 (3,471)	7,726 (3,571)	2,368 (1,140)	397 (260)	45,209 (35,572)
Angler hours		18,569 (5,312)	77,332 (89,057)	38,693 (19,365)	97,818 (39,673)	69,703 (26,339)	5,271 (1,778)	307,386 (102,982)
Angler trips		4,992 (1,460)	18,292 (18,716)	7,821 (3,856)	21,438 (8,385)	16,377 (5,434)	1,564 (514)	70,484 (21,619)
Angler days		4,143 (1,318)	17,283 (17,971)	7,657 (3,769)	18,295 (7,123)	13,953 (4,707)	1,352 (481)	62,683 (20,298)

Appendix 38.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Harrisville, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.0010 (0.0010)	0 (0)	0 (0)	0 (0)	163 (153)	0 (0)	0 (0)	163 (153)
Chinook salmon	0.0772 (0.0238)	25 (52)	375 (441)	1,218 (997)	2,116 (1,446)	7,511 (2,126)	1,103 (661)	12,348 (2,870)
Rainbow trout	0.0011 (0.0011)	0 (0)	16 (35)	0 (0)	36 (65)	105 (147)	17 (34)	174 (168)
Brown trout	0.0008 (0.0008)	0 (0)	0 (0)	0 (0)	6 (13)	13 (21)	106 (123)	125 (125)
Brook trout	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	16 (34)	16 (34)
Lake trout	0.0410 (0.0213)	0 (0)	2,392 (1,812)	3,838 (2,537)	323 (239)	0 (0)	0 (0)	6,553 (3,127)
Channel catfish	0.0003 (0.0004)	0 (0)	0 (0)	0 (0)	40 (67)	13 (28)	0 (0)	53 (73)
Walleye	0.0011 (0.0008)	0 (0)	0 (0)	13 (28)	102 (99)	61 (70)	0 (0)	176 (124)
Lake whitefish	0.0008 (0.0013)	0 (0)	0 (0)	133 (216)	0 (0)	0 (0)	0 (0)	133 (216)
Round whitefish	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	13 (29)	13 (29)
Total	0.1234 (0.0365)	25 (52)	2,783 (1,865)	5,202 (2,735)	2,786 (1,480)	7,703 (2,133)	1,255 (675)	19,754 (4,261)
Angler hours		464 (174)	11,688 (8,208)	28,798 (16,822)	29,506 (17,670)	75,926 (19,148)	13,636 (5,015)	160,018 (32,472)
Angler trips		162 (119)	2,329 (1,598)	6,349 (3,711)	6,435 (3,873)	13,491 (3,904)	2,553 (1,021)	31,319 (6,901)
Angler days		123 (98)	2,300 (1,579)	5,877 (3,449)	6,090 (3,695)	10,360 (3,066)	2,058 (852)	26,808 (6,179)



Appendix 39.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Alpena, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Pink salmon	0.0001 (0.0001)	0 (0)	0 (0)	0 (0)	5 (7)	0 (0)	0 (0)	5 (7)
Coho salmon	0.0020 (0.0015)	0 (0)	0 (0)	0 (0)	50 (23)	29 (29)	62 (100)	141 (107)
Chinook salmon	0.0688 (0.0119)	27 (39)	190 (93)	828 (284)	2,331 (402)	809 (277)	603 (453)	4,788 (731)
Rainbow trout	0.0038 (0.0022)	14 (15)	0 (0)	72 (121)	169 (90)	10 (17)	0 (0)	265 (152)
Atlantic salmon	0.0001 (0.0002)	6 (12)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	6 (12)
Brown trout	0.0094 (0.0023)	180 (67)	9 (14)	37 (51)	270 (86)	160 (94)	0 (0)	656 (153)
Lake trout	0.0088 (0.0043)	0 (0)	152 (73)	83 (58)	355 (279)	20 (26)	0 (0)	610 (295)
Northern pike	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	7 (15)	0 (0)	7 (15)
Channel catfish	0.0006 (0.0006)	0 (0)	0 (0)	7 (14)	33 (34)	0 (0)	0 (0)	40 (37)
Rock bass	0.0003 (0.0004)	0 (0)	12 (23)	0 (0)	7 (14)	0 (0)	0 (0)	19 (27)
Smallmouth bass	0.0017 (0.0020)	0 (0)	12 (23)	0 (0)	19 (38)	25 (36)	62 (128)	118 (140)
Black crappie	0.0006 (0.0012)	0 (0)	0 (0)	0 (0)	41 (82)	0 (0)	0 (0)	41 (82)
Yellow perch	0.0062 (0.0067)	85 (160)	0 (0)	98 (196)	49 (72)	17 (34)	185 (384)	434 (467)
Walleye	0.0007 (0.0006)	0 (0)	26 (39)	0 (0)	24 (19)	0 (0)	0 (0)	50 (43)
Freshwater drum	0.0006 (0.0008)	0 (0)	0 (0)	0 (0)	45 (59)	0 (0)	0 (0)	45 (59)
Lake whitefish	0.0001 (0.0001)	0 (0)	0 (0)	0 (0)	7 (9)	0 (0)	0 (0)	7 (9)

Appendix 39.—Continued:

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Burbot	0.0003 (0.0004)	21 (26)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	21 (26)
Total	0.1042 (0.0162)	333 (181)	401 (129)	1,125 (374)	3,405 (524)	1,077 (300)	912 (616)	7,253 (966)
Angler hours		5,548 (808)	6,254 (962)	9,795 (1,750)	34,461 (4,133)	7,617 (1,754)	5,902 (2,452)	69,577 (5,551)
Angler trips		1,627 (239)	1,531 (250)	2,039 (379)	5,150 (637)	1,770 (410)	1,394 (594)	13,511 (1,091)
Angler days		1,627 (239)	1,531 (250)	2,039 (379)	5,150 (637)	1,770 (410)	1,394 (594)	13,511 (1,091)

Appendix 40.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Rockport, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month				Season
		Jun	Jul	Aug	Sep	
Pink salmon	0.0001 (0.0002)	6 (13)	0 (0)	0 (0)	0 (0)	6 (13)
Coho salmon	0.0019 (0.0011)	0 (0)	66 (57)	62 (50)	15 (23)	143 (79)
Chinook salmon	0.1337 (0.0246)	103 (97)	3,402 (861)	6,188 (1,247)	230 (121)	9,923 (1,523)
Rainbow trout	0.0015 (0.0009)	5 (11)	68 (58)	37 (33)	0 (0)	110 (68)
Brown trout	0.0007 (0.0008)	0 (0)	12 (19)	42 (58)	0 (0)	54 (61)
Lake trout	0.0078 (0.0029)	23 (25)	310 (165)	245 (116)	0 (0)	578 (203)
Channel catfish	0.0001 (0.0002)	0 (0)	0 (0)	8 (17)	0 (0)	8 (17)
Yellow perch	0.0005 (0.0013)	34 (87)	0 (0)	0 (0)	0 (0)	34 (87)
Walleye	0.0006 (0.0005)	0 (0)	0 (0)	36 (33)	5 (10)	41 (34)
Total	0.1468 (0.0256)	171 (134)	3,858 (881)	6,618 (1,256)	250 (124)	10,897 (1,545)
Angler hours		2,824 (807)	29,300 (4,444)	37,182 (5,845)	4,931 (1,603)	74,237 (7,559)
Angler trips		820 (268)	5,772 (894)	6,826 (1,089)	970 (438)	14,388 (1,500)
Angler days		716 (218)	5,672 (883)	6,637 (1,065)	955 (436)	13,980 (1,467)

Appendix 41.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Rogers City, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Pink salmon	<0.0001 (0.0001)	0 (0)	0 (0)	5 (11)	0 (0)	0 (0)	0 (0)	5 (11)
Coho salmon	0.0015 (0.0016)	0 (0)	0 (0)	0 (0)	15 (21)	56 (52)	167 (246)	238 (252)
Chinook salmon	0.1028 (0.0217)	0 (0)	8 (11)	26 (22)	2,386 (608)	5,642 (1,289)	7,758 (2,605)	15,820 (2,969)
Rainbow trout	0.0008 (0.0004)	39 (37)	5 (10)	7 (14)	69 (43)	0 (0)	0 (0)	120 (59)
Brown trout	0.0007 (0.0005)	0 (0)	8 (11)	0 (0)	71 (50)	30 (50)	0 (0)	109 (72)
Lake trout	0.0106 (0.0052)	0 (0)	223 (172)	572 (551)	819 (523)	17 (24)	0 (0)	1,631 (779)
Channel catfish	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	8 (17)	0 (0)	0 (0)	8 (17)
Yellow perch	0.0001 (0.0002)	0 (0)	0 (0)	14 (28)	0 (0)	0 (0)	0 (0)	14 (28)
Total	0.1166 (0.0230)	39 (37)	244 (173)	624 (552)	3,368 (805)	5,745 (1,291)	7,925 (2,617)	17,945 (3,082)
Angler hours		414 (136)	2,017 (329)	2,849 (802)	27,560 (4,241)	62,315 (9,690)	58,799 (10,565)	153,954 (14,976)
Angler trips		164 (59)	531 (95)	756 (223)	6,646 (1,045)	14,462 (2,331)	10,958 (2,061)	33,517 (3,292)
Angler days		134 (51)	420 (84)	629 (183)	5,492 (903)	11,202 (1,854)	8,261 (1,638)	26,138 (2,642)

Appendix 42.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Drummond Island boat fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Northern pike	0.0554 (0.0227)	1,456 (917)	1,755 (923)	5,810 (3,530)	3,734 (3,152)	865 (984)	13,620 (5,006)
Black bullhead	0.0001 (0.0002)	0 (0)	29 (58)	0 (0)	0 (0)	0 (0)	29 (58)
Brown bullhead	0.0092 (0.0090)	1,168 (1,643)	881 (1,382)	0 (0)	220 (450)	0 (0)	2,269 (2,194)
Channel catfish	0.0027 (0.0042)	0 (0)	115 (182)	542 (989)	0 (0)	0 (0)	657 (1,006)
Rock bass	0.0490 (0.0342)	76 (159)	1,786 (1,428)	4,071 (3,381)	3,896 (5,687)	2,217 (4,485)	12,046 (8,121)
Pumpkinseed	0.0482 (0.0331)	4,337 (5,176)	1,131 (1,271)	2,946 (2,719)	3,194 (5,080)	259 (528)	11,867 (7,867)
Smallmouth bass	0.0426 (0.0274)	98 (205)	974 (612)	3,687 (3,002)	5,709 (5,684)	0 (0)	10,468 (6,460)
Largemouth bass	0.0081 (0.0154)	0 (0)	148 (222)	0 (0)	1,847 (3,778)	0 (0)	1,995 (3,785)
Black crappie	0.0004 (0.0006)	0 (0)	33 (66)	68 (140)	0 (0)	0 (0)	101 (155)
Yellow perch	0.3218 (0.1268)	53,417 (24,402)	7,384 (7,914)	8,129 (5,957)	9,349 (8,559)	865 (1,304)	79,144 (27,722)
Walleye	0.0180 (0.0103)	993 (1,032)	2,382 (1,698)	296 (442)	616 (1,259)	148 (302)	4,435 (2,412)
Round whitefish	0.0011 (0.0023)	0 (0)	0 (0)	263 (544)	0 (0)	0 (0)	263 (544)
Other	0.0985 (0.0858)	34 (72)	113 (179)	24,073 (20,632)	0 (0)	0 (0)	24,220 (20,633)
<b>Total</b>	<b>0.6550</b> <b>(0.1932)</b>	<b>61,579</b> <b>(25,038)</b>	<b>16,731</b> <b>(8,510)</b>	<b>49,885</b> <b>(22,427)</b>	<b>28,565</b> <b>(13,773)</b>	<b>4,354</b> <b>(4,812)</b>	<b>161,114</b> <b>(37,618)</b>
<b>Angler hours</b>		<b>38,344</b> <b>(14,099)</b>	<b>42,911</b> <b>(10,079)</b>	<b>90,115</b> <b>(35,383)</b>	<b>50,231</b> <b>(15,937)</b>	<b>24,364</b> <b>(12,628)</b>	<b>245,965</b> <b>(44,337)</b>
<b>Angler trips</b>		<b>9,813</b> <b>(3,642)</b>	<b>11,568</b> <b>(2,719)</b>	<b>25,591</b> <b>(10,001)</b>	<b>16,117</b> <b>(5,407)</b>	<b>6,803</b> <b>(3,680)</b>	<b>69,892</b> <b>(12,785)</b>
<b>Angler days</b>		<b>5,625</b> <b>(2,125)</b>	<b>5,921</b> <b>(1,400)</b>	<b>14,681</b> <b>(5,837)</b>	<b>10,144</b> <b>(3,864)</b>	<b>4,905</b> <b>(3,321)</b>	<b>41,276</b> <b>(8,155)</b>

Appendix 43.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the De Tour boat fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Pink salmon	0.0012 (0.0020)	0 (0)	0 (0)	0 (0)	34 (57)	0 (0)	34 (57)
Coho salmon	0.0031 (0.0029)	0 (0)	0 (0)	0 (0)	85 (77)	0 (0)	85 (77)
Chinook salmon	0.0982 (0.0502)	0 (0)	0 (0)	438 (431)	1,264 (802)	972 (708)	2,674 (1,153)
Northern pike	0.0068 (0.0107)	26 (46)	1 (3)	135 (280)	24 (50)	0 (0)	186 (288)
Brown bullhead	0.0017 (0.0038)	0 (0)	47 (103)	0 (0)	0 (0)	0 (0)	47 (103)
Rock bass	0.0069 (0.0094)	13 (24)	94 (206)	82 (143)	0 (0)	0 (0)	189 (252)
Pumpkinseed	0.0004 (0.0009)	11 (25)	0 (0)	0 (0)	0 (0)	0 (0)	11 (25)
Smallmouth bass	0.0002 (0.0004)	0 (0)	0 (0)	0 (0)	6 (12)	0 (0)	6 (12)
Black crappie	0.0017 (0.0038)	0 (0)	47 (103)	0 (0)	0 (0)	0 (0)	47 (103)
Yellow perch	0.0465 (0.0422)	268 (321)	97 (131)	764 (1,022)	139 (196)	0 (0)	1,268 (1,097)
Walleye	0.0008 (0.0018)	0 (0)	21 (47)	0 (0)	0 (0)	0 (0)	21 (47)
Round whitefish	0.0008 (0.0017)	0 (0)	0 (0)	21 (43)	0 (0)	0 (0)	21 (43)
Other	0.1498 (0.1553)	0 (0)	0 (0)	4,080 (4,080)	0 (0)	0 (0)	4,080 (4,080)
Total	0.3182 (0.1835)	318 (326)	307 (288)	5,520 (4,240)	1,552 (833)	972 (708)	8,669 (4,400)
Angler hours		274 (236)	383 (326)	4,312 (1,738)	11,613 (4,307)	10,662 (5,820)	27,244 (7,457)
Angler trips		94 (83)	100 (92)	680 (296)	1,890 (717)	2,089 (1,135)	4,853 (1,380)
Angler days		59 (54)	100 (92)	544 (258)	1,747 (670)	1,873 (1,079)	4,323 (1,300)

Appendix 44.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Les Cheneaux Islands, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Pink salmon	0.0020 (0.0028)	0 (0)	0 (0)	0 (0)	412 (573)	0 (0)	412 (573)
Coho salmon	0.0141 (0.0253)	0 (0)	0 (0)	0 (0)	349 (427)	2,517 (5,109)	2,866 (5,127)
Chinook salmon	0.0380 (0.0426)	0 (0)	0 (0)	0 (0)	2,417 (1,615)	5,278 (8,418)	7,695 (8,572)
Brown trout	0.0032 (0.0040)	31 (64)	0 (0)	622 (814)	0 (0)	0 (0)	653 (817)
Northern pike	0.0398 (0.0234)	998 (974)	2,318 (2,192)	2,956 (2,766)	1,787 (2,834)	0 (0)	8,059 (4,630)
Black bullhead	0.0120 (0.0196)	1,872 (3,895)	171 (348)	385 (626)	0 (0)	0 (0)	2,428 (3,960)
Yellow bullhead	0.0053 (0.0107)	0 (0)	0 (0)	1,066 (2,157)	0 (0)	0 (0)	1,066 (2,157)
Brown bullhead	0.0074 (0.0084)	365 (707)	428 (869)	709 (1,266)	0 (0)	0 (0)	1,502 (1,690)
Channel catfish	0.0021 (0.0038)	374 (779)	0 (0)	59 (120)	0 (0)	0 (0)	433 (788)
Rock bass	0.5132 (0.5695)	449 (921)	51,953 (90,783)	14,681 (10,483)	36,951 (69,408)	0 (0)	104,034 (114,760)
Pumpkinseed	0.0011 (0.0013)	51 (82)	0 (0)	178 (254)	0 (0)	0 (0)	229 (267)
Bluegill	0.0002 (0.0004)	0 (0)	0 (0)	36 (72)	0 (0)	0 (0)	36 (72)
Smallmouth bass	0.0149 (0.0214)	483 (1,021)	198 (407)	2,348 (4,194)	0 (0)	0 (0)	3,029 (4,336)
Yellow perch	0.7537 (0.2702)	40,964 (19,844)	62,062 (41,034)	32,901 (15,746)	3,911 (3,649)	12,944 (17,833)	152,782 (51,545)
Other	0.0376 (0.0628)	0 (0)	0 (0)	7,627 (12,709)	0 (0)	0 (0)	7,627 (12,709)

Appendix 44.—Continued:

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Total	1.4447 (0.6510)	45,587 (20,320)	117,130 (99,655)	63,568 (23,494)	45,827 (69,584)	20,739 (20,371)	292,851 (127,094)
Angler hours		16,528 (6,202)	36,776 (9,883)	72,566 (15,705)	37,828 (9,902)	39,005 (11,103)	202,703 (24,579)
Angler trips		4,606 (1,746)	10,362 (3,079)	18,256 (4,129)	9,325 (2,528)	10,129 (3,863)	52,678 (7,134)
Angler days		4,147 (1,608)	8,844 (2,852)	17,405 (4,028)	9,325 (2,528)	10,129 (3,863)	49,850 (6,947)



Appendix 45.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the St. Ignace boat fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Pink salmon	0.0003 (0.0006)	0 (0)	0 (0)	10 (20)	0 (0)	0 (0)	10 (20)
Coho salmon	0.0024 (0.0049)	0 (0)	0 (0)	74 (149)	0 (0)	0 (0)	74 (149)
Chinook salmon	0.0666 (0.0314)	0 (0)	75 (108)	417 (341)	1,138 (694)	408 (377)	2,038 (867)
Brown trout	0.0032 (0.0054)	0 (0)	0 (0)	98 (165)	0 (0)	0 (0)	98 (165)
Northern pike	0.0185 (0.0115)	21 (34)	115 (113)	135 (155)	131 (204)	163 (173)	565 (331)
White sucker	0.0002 (0.0004)	0 (0)	0 (0)	6 (12)	0 (0)	0 (0)	6 (12)
Brown bullhead	0.0018 (0.0033)	0 (0)	45 (97)	9 (19)	0 (0)	0 (0)	54 (99)
Channel catfish	0.0004 (0.0008)	0 (0)	0 (0)	11 (22)	0 (0)	0 (0)	11 (22)
Rock bass	0.0088 (0.0109)	162 (308)	41 (63)	53 (81)	0 (0)	12 (26)	268 (326)
Black crappie	0.0004 (0.0009)	13 (30)	0 (0)	0 (0)	0 (0)	0 (0)	13 (30)
Yellow perch	0.0308 (0.0278)	54 (103)	0 (0)	461 (470)	91 (186)	336 (647)	942 (827)
Walleye	0.0128 (0.0084)	0 (0)	238 (214)	101 (92)	0 (0)	54 (78)	393 (246)
Lake whitefish	0.0056 (0.0068)	0 (0)	0 (0)	172 (206)	0 (0)	0 (0)	172 (206)
Round whitefish	0.0385 (0.0297)	0 (0)	0 (0)	1,133 (873)	45 (93)	0 (0)	1,178 (878)
Other	0.0204 (0.0160)	0 (0)	0 (0)	624 (472)	0 (0)	0 (0)	624 (472)

Appendix 45.—Continued:

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Total	0.2105 (0.0694)	250 (328)	514 (289)	3,304 (1,206)	1,405 (753)	973 (773)	6,446 (1,676)
Angler hours		558 (421)	1,778 (1,072)	9,022 (2,207)	10,260 (4,437)	9,005 (3,558)	30,623 (6,208)
Angler trips		120 (93)	359 (223)	1,721 (451)	2,292 (1,031)	2,140 (875)	6,632 (1,446)
Angler days		110 (87)	282 (173)	1,175 (328)	2,031 (938)	1,237 (536)	4,835 (1,146)

**SECTION III. LAKE ERIE CATCH AND EFFORT ESTIMATES BY SITE**

Appendix 46.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Lake Erie boat fishery in the area from the mouth of the Raisin River to the Michigan-Ohio state line, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Yellow bullhead	<0.0001 (<0.0001)	58 (121)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	58 (121)
Channel catfish	0.0769 (0.0396)	1,571 (1,925)	31,570 (21,602)	54,732 (42,415)	27,961 (34,301)	2,510 (2,538)	55,674 (55,104)	174,018 (80,553)
White perch	0.0201 (0.0114)	0 (0)	61 (125)	19,488 (15,677)	23,354 (16,900)	0 (0)	2,669 (5,471)	45,572 (23,692)
White bass	0.0743 (0.0316)	731 (1,062)	64,519 (36,289)	52,864 (39,610)	33,588 (23,087)	2,760 (4,159)	13,733 (15,354)	168,195 (60,605)
Bluegill	0.0014 (0.0030)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3,252 (6,821)	3,252 (6,821)
Smallmouth bass	0.0001 (0.0002)	0 (0)	0 (0)	160 (338)	0 (0)	0 (0)	0 (0)	160 (338)
Yellow perch	0.1190 (0.0935)	0 (0)	2,387 (1,939)	4,827 (3,651)	5,778 (8,192)	2,592 (4,156)	253,669 (202,499)	269,253 (202,749)
Walleye	0.5813 (0.2115)	1,294 (1,597)	174,077 (76,361)	688,520 (326,705)	431,554 (166,696)	4,366 (4,181)	15,890 (30,785)	1,315,701 (375,929)
Freshwater drum	0.0133 (0.0102)	638 (889)	6,838 (8,647)	12,892 (17,727)	2,699 (3,923)	906 (1,859)	6,138 (9,103)	30,111 (22,170)
Other	0.0003 (0.0006)	0 (0)	0 (0)	58 (122)	0 (0)	0 (0)	587 (1,204)	645 (1,210)
Total	0.8867 (0.2787)	4,292 (2,862)	279,452 (87,710)	833,541 (332,682)	524,934 (172,816)	13,134 (7,871)	351,612 (213,041)	2,006,965 (440,105)
Angler hours		3,415 (1,853)	250,721 (96,307)	866,842 (379,294)	913,883 (314,389)	131,323 (80,514)	97,107 (35,625)	2,263,291 (509,642)
Angler trips		628 (358)	43,085 (16,584)	149,343 (66,907)	166,778 (58,139)	27,530 (17,272)	19,945 (7,503)	407,309 (92,122)
Angler days		628 (358)	43,001 (16,546)	148,936 (66,686)	165,631 (57,668)	27,530 (17,272)	19,945 (7,503)	405,671 (91,658)

Appendix 47.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Lake Erie boat fishery in the area from Point Mouillee to the mouth of the Raisin River, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Rainbow trout	0.0007 (0.0015)	0 (0)	21 (43)	1,495 (3,141)	0 (0)	0 (0)	0 (0)	1,516 (3,141)
Black bullhead	0.0003 (0.0006)	0 (0)	0 (0)	598 (1,256)	0 (0)	0 (0)	0 (0)	598 (1,256)
Channel catfish	0.0090 (0.0077)	0 (0)	49 (101)	1,797 (2,069)	6,122 (6,997)	5,668 (8,651)	5,304 (10,778)	18,940 (15,629)
White perch	0.0129 (0.0100)	0 (0)	0 (0)	10,321 (11,537)	13,649 (15,759)	1,461 (2,182)	1,591 (3,234)	27,022 (19,917)
White bass	0.0338 (0.0222)	0 (0)	27,265 (36,828)	29,195 (21,061)	7,364 (7,435)	2,042 (2,441)	5,183 (6,303)	71,049 (43,599)
Rock bass	0.0009 (0.0011)	0 (0)	576 (1,181)	1,304 (2,055)	0 (0)	91 (194)	0 (0)	1,971 (2,378)
White crappie	0.0001 (0.0002)	160 (325)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	160 (325)
Black crappie	0.0024 (0.0051)	0 (0)	0 (0)	5,060 (10,630)	0 (0)	0 (0)	0 (0)	5,060 (10,630)
Yellow perch	0.0236 (0.0175)	0 (0)	1,580 (1,332)	5,670 (7,963)	3,180 (4,535)	17,491 (24,497)	21,612 (23,231)	49,533 (35,008)
Walleye	0.3245 (0.1156)	0 (0)	127,284 (46,863)	337,759 (151,877)	202,742 (94,107)	11,815 (12,746)	1,523 (1,657)	681,123 (185,160)
Freshwater drum	0.0025 (0.0029)	0 (0)	154 (315)	247 (512)	2,299 (4,685)	1,166 (2,418)	1,326 (2,695)	5,192 (5,951)
Other	0.0022 (0.0038)	0 (0)	0 (0)	997 (2,094)	3,671 (7,630)	0 (0)	0 (0)	4,668 (7,912)
Total	0.4129 (0.1332)	160 (325)	156,929 (59,630)	394,443 (154,416)	239,027 (96,485)	39,734 (29,223)	36,539 (26,759)	866,832 (195,652)
Angler hours		2,537 (1,771)	203,513 (73,791)	735,526 (318,054)	984,743 (352,314)	86,145 (43,467)	86,697 (34,373)	2,099,161 (483,531)
Angler trips		651 (446)	34,451 (12,305)	126,732 (55,072)	180,456 (69,331)	18,453 (9,348)	18,508 (7,053)	379,251 (90,158)
Angler days		651 (446)	34,110 (12,206)	125,113 (54,310)	180,456 (69,331)	18,453 (9,348)	18,508 (7,053)	377,291 (89,681)

**SECTION IV. LAKE SUPERIOR CATCH AND EFFORT ESTIMATES BY SITE**

Appendix 48.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Black River Harbor, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Coho salmon	0.0594 (0.0242)	252 (222)	718 (305)	149 (100)	20 (30)	647 (556)	1,786 (680)
Chinook salmon	0.0065 (0.0051)	32 (50)	5 (10)	21 (25)	77 (107)	59 (86)	194 (149)
Rainbow trout	0.0099 (0.0129)	221 (381)	62 (56)	7 (15)	0 (0)	8 (16)	298 (386)
Atlantic salmon	0.0002 (0.0004)	7 (15)	0 (0)	0 (0)	0 (0)	0 (0)	7 (15)
Brown trout	0.0011 (0.0012)	32 (34)	0 (0)	0 (0)	0 (0)	0 (0)	32 (34)
Lake trout	0.1486 (0.0460)	116 (90)	2,088 (913)	1,537 (702)	592 (361)	132 (148)	4,465 (1,219)
Northern pike	0.0018 (0.0042)	0 (0)	0 (0)	54 (125)	0 (0)	0 (0)	54 (125)
Other	0.0003 (0.0006)	0 (0)	0 (0)	10 (21)	0 (0)	0 (0)	10 (21)
Total	0.2278 (0.0590)	660 (454)	2,873 (964)	1,778 (721)	689 (378)	846 (582)	6,846 (1,462)
Angler hours		3,379 (1,093)	9,041 (2,515)	7,346 (2,433)	3,007 (1,011)	7,280 (2,201)	30,053 (4,394)
Angler trips		823 (263)	1,270 (357)	921 (299)	526 (193)	1,926 (567)	5,466 (803)
Angler days		801 (259)	1,270 (357)	921 (299)	526 (193)	1,926 (567)	5,444 (802)

Appendix 49.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Ontonagon, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Coho salmon	0.0189 (0.0110)	294 (177)	92 (146)	14 (21)	7 (10)	0 (0)	407 (231)
Chinook salmon	0.0070 (0.0044)	146 (93)	5 (11)	0 (0)	0 (0)	0 (0)	151 (94)
Rainbow trout	0.0037 (0.0038)	80 (81)	0 (0)	0 (0)	0 (0)	0 (0)	80 (81)
Atlantic salmon	0.0018 (0.0026)	39 (57)	0 (0)	0 (0)	0 (0)	0 (0)	39 (57)
Brown trout	0.0037 (0.0038)	75 (80)	5 (10)	0 (0)	0 (0)	0 (0)	80 (81)
Lake trout	0.1620 (0.0399)	702 (279)	815 (339)	969 (446)	1,000 (400)	0 (0)	3,486 (743)
Walleye	0.0114 (0.0101)	91 (155)	28 (33)	126 (145)	0 (0)	0 (0)	245 (215)
Lake whitefish	0.0025 (0.0036)	0 (0)	53 (77)	0 (0)	0 (0)	0 (0)	53 (77)
Other	0.0007 (0.0014)	0 (0)	15 (31)	0 (0)	0 (0)	0 (0)	15 (31)
Total	0.2117 (0.0464)	1,427 (398)	1,013 (380)	1,109 (469)	1,007 (400)	0 (0)	4,556 (826)
Angler hours		7,640 (1,778)	4,996 (1,228)	5,281 (1,313)	3,608 (809)	0 (0)	21,525 (2,655)
Angler trips		2,048 (506)	1,072 (274)	1,214 (313)	775 (195)	0 (0)	5,109 (683)
Angler days		2,040 (505)	1,054 (270)	1,199 (311)	775 (195)	0 (0)	5,068 (680)



Appendix 50.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Traverse Bay, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Coho salmon	0.0045 (0.0077)	50 (105)	0 (0)	13 (26)	0 (0)	0 (0)	63 (108)
Lake trout	0.2271 (0.0724)	1,124 (543)	913 (467)	857 (456)	256 (299)	0 (0)	3,150 (900)
Black bullhead	0.0149 (0.0207)	148 (261)	59 (117)	0 (0)	0 (0)	0 (0)	207 (286)
Yellow perch	0.0501 (0.0658)	60 (126)	635 (898)	0 (0)	0 (0)	0 (0)	695 (907)
Total	0.2967 (0.1037)	1,382 (624)	1,607 (1,019)	870 (457)	256 (299)	0 (0)	4,115 (1,314)
Angler hours		3,848 (1,137)	4,832 (1,053)	4,122 (967)	1,068 (733)	0 (0)	13,870 (1,968)
Angler trips		1,672 (709)	1,579 (309)	836 (207)	242 (165)	0 (0)	4,329 (817)
Angler days		1,656 (709)	1,579 (309)	836 (207)	242 (165)	0 (0)	4,313 (817)

Appendix 51.—Estimated effort (angler hours, trips, and days) for the Keweenaw Bay boat fishery, boat fishery, 1988. Two standard errors in parentheses.

Species	Month	Season
	May	
Angler hours	1,438 (1,202)	1,438 (1,202)
Angler trips	698 (657)	698 (657)
Angler days	698 (657)	698 (657)

Appendix 52.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Huron Bay boat fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month					Season
		May	Jun	Jul	Aug	Sep	
Coho salmon	0.0144 (0.0105)	143 (100)	46 (95)	0 (0)	0 (0)	6 (12)	195 (138)
Chinook salmon	0.0021 (0.0031)	24 (42)	0 (0)	0 (0)	0 (0)	5 (11)	29 (43)
Rainbow trout	0.0087 (0.0061)	118 (80)	0 (0)	0 (0)	0 (0)	0 (0)	118 (80)
Atlantic salmon	0.0005 (0.0010)	7 (14)	0 (0)	0 (0)	0 (0)	0 (0)	7 (14)
Brook trout	0.0002 (0.0004)	3 (6)	0 (0)	0 (0)	0 (0)	0 (0)	3 (6)
Lake trout	0.2640 (0.1007)	311 (147)	1,181 (805)	1,500 (702)	335 (341)	243 (345)	3,570 (1,182)
Lake whitefish	0.0191 (0.0239)	258 (319)	0 (0)	0 (0)	0 (0)	0 (0)	258 (319)
Total	0.3091 (0.1086)	864 (377)	1,227 (811)	1,500 (702)	335 (341)	254 (345)	4,180 (1,236)
Angler hours		2,565 (547)	4,199 (1,849)	4,087 (1,275)	1,248 (783)	1,424 (781)	13,523 (2,563)
Angler trips		583 (133)	1,038 (503)	691 (217)	264 (152)	376 (239)	2,952 (631)
Angler days		531 (129)	980 (481)	661 (218)	264 (152)	376 (239)	2,812 (613)

Appendix 53.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Presque Isle Harbor, Marquette, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0595 (0.0224)	1,925 (901)	401 (295)	81 (83)	86 (109)	0 (0)	38 (41)	178 (178)	2,709 (975)
Chinook salmon	0.0071 (0.0053)	0 (0)	0 (0)	42 (53)	12 (24)	0 (0)	39 (41)	232 (230)	325 (241)
Rainbow trout	0.0033 (0.0035)	0 (0)	8 (17)	40 (58)	23 (48)	4 (7)	9 (18)	65 (138)	149 (159)
Brown trout	0.0005 (0.0008)	16 (33)	6 (12)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	22 (35)
Lake trout	0.1062 (0.0251)	16 (16)	111 (127)	577 (255)	692 (457)	1,340 (405)	1,199 (468)	904 (602)	4,839 (1,018)
Lake whitefish	0.0256 (0.0240)	0 (0)	0 (0)	388 (471)	778 (976)	0 (0)	0 (0)	0 (0)	1,166 (1,084)
Total	0.2022 (0.0451)	1,957 (902)	526 (322)	1,128 (548)	1,591 (1,085)	1,344 (405)	1,285 (472)	1,379 (683)	9,210 (1,802)
Angler hours		2,868 (927)	3,521 (921)	5,157 (1,025)	7,133 (1,882)	10,571 (1,795)	6,497 (1,473)	9,809 (3,509)	45,556 (4,899)
Angler trips		1,148 (364)	1,032 (276)	1,085 (230)	1,659 (453)	2,077 (370)	1,417 (344)	2,554 (1,086)	10,972 (1,379)
Angler days		1,000 (336)	1,022 (275)	1,078 (230)	1,659 (453)	2,054 (368)	1,359 (338)	2,314 (984)	10,486 (1,290)

Appendix 54.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Marquette's lower harbor, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.1346 (0.0525)	1,132 (497)	992 (560)	724 (785)	27 (56)	0 (0)	0 (0)	0 (0)	2,875 (1,086)
Chinook salmon	0.0050 (0.0044)	0 (0)	68 (82)	34 (42)	4 (7)	0 (0)	0 (0)	0 (0)	106 (92)
Rainbow trout	0.0026 (0.0043)	0 (0)	50 (89)	5 (10)	0 (0)	0 (0)	0 (0)	0 (0)	55 (90)
Brown trout	0.0008 (0.0011)	0 (0)	18 (25)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	18 (25)
Lake trout	0.0179 (0.0104)	0 (0)	0 (0)	48 (67)	143 (149)	135 (122)	56 (76)	0 (0)	382 (218)
Splake	0.0063 (0.0060)	50 (72)	26 (54)	58 (89)	0 (0)	0 (0)	0 (0)	0 (0)	134 (127)
Northern pike	0.0004 (0.0008)	0 (0)	0 (0)	0 (0)	9 (19)	0 (0)	0 (0)	0 (0)	9 (19)
Total	0.1675 (0.0550)	1,182 (502)	1,154 (576)	869 (794)	183 (160)	135 (122)	56 (76)	0 (0)	3,579 (1,123)
Angler hours		3,387 (807)	6,557 (1,121)	4,560 (852)	2,645 (638)	1,512 (541)	677 (267)	2,026 (972)	21,364 (2,086)
Angler trips		1,890 (475)	2,998 (536)	1,862 (423)	884 (216)	317 (114)	298 (177)	588 (286)	8,837 (930)
Angler days		1,430 (389)	2,349 (453)	1,454 (363)	783 (198)	317 (114)	280 (174)	534 (276)	7,147 (804)

Appendix 55.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Munising Bay, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Coho salmon	0.0785 (0.0216)	1,184 (427)	890 (433)	243 (207)	5 (9)	62 (77)	138 (167)	2,522 (668)
Chinook salmon	0.0040 (0.0027)	4 (9)	85 (70)	10 (19)	11 (22)	19 (41)	0 (0)	129 (87)
Rainbow trout	0.0128 (0.0100)	223 (283)	176 (147)	2 (3)	9 (18)	2 (4)	0 (0)	412 (319)
Brown trout	0.0010 (0.0015)	10 (20)	0 (0)	22 (45)	0 (0)	0 (0)	0 (0)	32 (49)
Brook trout	0.0004 (0.0008)	0 (0)	13 (26)	0 (0)	0 (0)	0 (0)	0 (0)	13 (26)
Lake trout	0.0800 (0.0295)	31 (63)	381 (227)	318 (247)	1,010 (453)	344 (235)	485 (699)	2,569 (930)
Splake	0.0219 (0.0195)	82 (81)	60 (60)	47 (55)	320 (541)	96 (194)	99 (218)	704 (625)
Rainbow smelt	0.0300 (0.0459)	965 (1,474)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	965 (1,474)
Northern pike	0.0002 (0.0004)	0 (0)	0 (0)	0 (0)	7 (13)	0 (0)	0 (0)	7 (13)
Bluegill	0.0002 (0.0004)	0 (0)	0 (0)	5 (10)	0 (0)	0 (0)	0 (0)	5 (10)
Smallmouth bass	0.0031 (0.0028)	0 (0)	0 (0)	47 (51)	41 (67)	0 (0)	10 (20)	98 (87)
Yellow perch	0.1972 (0.0864)	26 (53)	683 (966)	864 (529)	4,245 (2,426)	519 (635)	0 (0)	6,337 (2,739)
Lake whitefish	0.0296 (0.0179)	626 (476)	163 (206)	147 (239)	15 (29)	0 (0)	0 (0)	951 (572)
Round whitefish	0.0145 (0.0098)	170 (140)	167 (240)	42 (78)	88 (125)	0 (0)	0 (0)	467 (314)
Burbot	0.0002 (0.0004)	8 (16)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	8 (16)

Appendix 55.—Continued:

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Total	0.4737 (0.1128)	3,329 (1,642)	2,618 (1,141)	1,747 (675)	5,751 (2,531)	1,042 (710)	732 (751)	15,219 (3,454)
Angler hours		4,553 (929)	6,203 (963)	5,636 (975)	9,361 (1,284)	4,279 (771)	2,096 (647)	32,128 (2,324)
Angler trips		1,220 (256)	1,335 (228)	1,236 (230)	2,093 (309)	1,100 (224)	766 (368)	7,750 (672)
Angler days		1,102 (244)	1,252 (218)	1,181 (226)	2,093 (309)	1,047 (221)	766 (368)	7,441 (662)

**SECTION V. RIVER CATCH AND EFFORT ESTIMATES BY SITE**

Appendix 57.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the St. Joseph River (Berrien Springs Dam to I-94 Park), by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month										Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Coho salmon	0.0011 (0.0013)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	61 (123)	142 (212)	0 (0)	0 (0)	0 (0)	203 (245)
Chinook salmon	0.0148 (0.0043)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	38 (71)	1,833 (656)	977 (473)	17 (28)	0 (0)	2,865 (812)
Rainbow trout	0.0536 (0.0099)	1,480 (698)	620 (804)	0 (0)	0 (0)	135 (276)	758 (522)	2,350 (682)	2,369 (818)	1,791 (691)	859 (322)	10,362 (1,788)
Brown trout	0.0031 (0.0039)	163 (139)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	27 (35)	395 (747)	7 (10)	11 (23)	603 (761)
Lake trout	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	27 (55)	0 (0)	27 (55)
White sucker	0.0007 (0.0009)	87 (175)	30 (45)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	18 (27)	135 (183)
Redhorse spp.	0.0003 (0.0005)	0 (0)	56 (101)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	56 (101)
Black bullhead	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	0 (0)	3 (7)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (7)
Channel catfish	0.0312 (0.0269)	0 (0)	0 (0)	0 (0)	2,280 (4,461)	2,041 (2,155)	285 (212)	1,293 (1,490)	121 (190)	0 (0)	3 (7)	6,023 (5,181)
Rock bass	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	8 (16)	0 (0)	0 (0)	0 (0)	0 (0)	8 (16)
Bluegill	0.0083 (0.0105)	0 (0)	0 (0)	0 (0)	0 (0)	101 (207)	823 (1,537)	685 (1,324)	0 (0)	0 (0)	0 (0)	1,609 (2,039)
Smallmouth bass	0.0164 (0.0277)	0 (0)	0 (0)	0 (0)	2,743 (5,354)	286 (200)	82 (102)	0 (0)	63 (130)	0 (0)	2 (5)	3,176 (5,360)
White crappie	0.0001 (0.0002)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	24 (47)	0 (0)	0 (0)	0 (0)	24 (47)
Yellow perch	<0.0001 (<0.0001)	0 (0)	0 (0)	0 (0)	0 (0)	9 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9 (20)
Walleye	0.0077 (0.0032)	104 (121)	23 (38)	0 (0)	0 (0)	237 (161)	43 (54)	96 (89)	127 (130)	130 (137)	732 (537)	1,492 (614)
Freshwater drum	0.0013 (0.0013)	0 (0)	0 (0)	0 (0)	0 (0)	122 (167)	125 (172)	0 (0)	0 (0)	0 (0)	0 (0)	247 (240)
Burbot	<0.0001 (0.0000)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9 (18)	9 (18)
Other	0.0003 (0.0005)	0 (0)	0 (0)	0 (0)	0 (0)	17 (34)	36 (73)	0 (0)	0 (0)	0 (0)	0 (0)	53 (81)



Appendix 57.—Continued:

Species	Total catch per hour	Month										Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>Total</b>	0.1392 (0.0426)	1,834 (743)	729 (812)	0 (0)	5,023 (6,969)	2,951 (2,204)	2,259 (1,658)	6,450 (2,219)	4,052 (1,233)	1,972 (707)	1,634 (627)	26,904 (8,045)
<b>Angler hours</b>		20,198 (2,428)	12,828 (4,844)	0 (0)	12,078 (1,320)	10,246 (2,573)	10,964 (1,753)	61,068 (5,268)	38,828 (7,523)	14,907 (4,092)	12,135 (3,005)	193,252 (12,285)
<b>Angler trips</b>		3,966 (514)	2,747 (941)	0 (0)	5,055 (2,303)	2,666 (883)	2,173 (466)	10,347 (919)	6,810 (1,279)	2,518 (646)	2,153 (475)	38,435 (3,252)
<b>Angler days</b>		3,426 (493)	2,610 (899)	0 (0)	4,852 (2,303)	2,339 (808)	2,173 (466)	10,206 (915)	6,782 (1,275)	2,518 (646)	2,153 (475)	37,059 (3,214)

Appendix 58.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the St. Joseph River downstream of the I-94 Park, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Chinook salmon	0.0084 (0.0075)	0 (0)	3 (6)	0 (0)	525 (471)	0 (0)	0 (0)	0 (0)	528 (471)
Rainbow trout	0.0426 (0.0129)	0 (0)	5 (10)	0 (0)	202 (158)	1,013 (533)	922 (403)	526 (301)	2,668 (750)
Brown trout	0.0004 (0.0004)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	15 (23)	13 (17)	28 (29)
White sucker	0.0041 (0.0051)	0 (0)	0 (0)	0 (0)	0 (0)	9 (19)	90 (182)	158 (259)	257 (317)
Redhorse spp.	0.0008 (0.0013)	0 (0)	11 (22)	0 (0)	38 (79)	0 (0)	0 (0)	0 (0)	49 (82)
Channel catfish	0.0370 (0.0434)	351 (617)	218 (159)	351 (320)	1,343 (2,607)	44 (44)	0 (0)	10 (26)	2,317 (2,703)
Rock bass	0.0031 (0.0035)	7 (15)	90 (162)	8 (16)	88 (142)	0 (0)	0 (0)	0 (0)	193 (217)
Bluegill	0.0001 (0.0002)	0 (0)	0 (0)	6 (12)	0 (0)	0 (0)	0 (0)	0 (0)	6 (12)
Smallmouth bass	0.0058 (0.0032)	52 (55)	125 (94)	27 (33)	124 (145)	34 (70)	0 (0)	0 (0)	362 (197)
Largemouth bass	0.0007 (0.0007)	0 (0)	25 (30)	17 (36)	4 (8)	0 (0)	0 (0)	0 (0)	46 (48)
Yellow perch	0.1588 (0.1313)	0 (0)	9,948 (8,150)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9,948 (8,150)
Walleye	0.0231 (0.0111)	254 (208)	610 (369)	531 (529)	28 (42)	0 (0)	17 (25)	7 (14)	1,447 (680)
Freshwater drum	0.0137 (0.0080)	125 (147)	66 (66)	515 (439)	153 (156)	0 (0)	0 (0)	0 (0)	859 (493)
Other	0.0006 (0.0009)	0 (0)	0 (0)	16 (33)	23 (47)	0 (0)	0 (0)	0 (0)	39 (57)

Appendix 58.—Continued:

Species	Total catch per hour	Month							Season
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total	0.2992 (0.1424)	789 (670)	11,101 (8,162)	1,471 (761)	2,528 (2,668)	1,100 (540)	1,044 (443)	714 (399)	18,747 (8,684)
Angler hours		4,217 (1,061)	14,408 (2,445)	9,650 (2,435)	11,668 (3,447)	10,036 (3,540)	7,105 (1,822)	5,566 (2,509)	62,650 (6,860)
Angler trips		929 (272)	2,941 (559)	2,181 (659)	2,151 (600)	1,688 (558)	1,174 (292)	1,383 (530)	12,447 (1,363)
Angler days		896 (266)	2,884 (562)	2,181 (659)	2,151 (600)	1,678 (557)	1,174 (292)	1,383 (530)	12,347 (1,363)

Appendix 59.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Muskegon River (Croton Dam to Newaygo) shore fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month									Season	
		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
Coho salmon	0.0016 (0.0034)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	77 (164)	0 (0)	77 (164)
Chinook salmon	0.0185 (0.0185)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	126 (252)	706 (833)	48 (66)	880 (873)
Rainbow trout	0.0175 (0.0122)	104 (85)	715 (563)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	12 (23)	831 (570)
Smallmouth bass	0.0011 (0.0016)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	52 (73)	0 (0)	0 (0)	52 (73)
Yellow perch	0.1661 (0.3329)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7,883 (15,771)	0 (0)	0 (0)	0 (0)	7,883 (15,771)
Walleye	0.0005 (0.0007)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	26 (38)	0 (0)	0 (0)	26 (38)
Total	0.2055 (0.3341)	104 (85)	715 (563)	0 (0)	0 (0)	0 (0)	0 (0)	8,087 (15,773)	783 (849)	60 (70)	9,749 (15,806)	
Angler hours		5,514 (826)	12,176 (1,742)	0 (0)	0 (0)	0 (0)	0 (0)	5,960 (486)	21,428 (5,476)	2,370 (424)	47,448 (5,841)	
Angler trips		1,619 (332)	2,421 (544)	0 (0)	0 (0)	0 (0)	0 (0)	1,607 (436)	4,318 (1,901)	454 (108)	10,419 (2,055)	
Angler days		1,390 (294)	1,971 (503)	0 (0)	0 (0)	0 (0)	0 (0)	1,607 (436)	3,194 (1,483)	454 (108)	8,616 (1,655)	

Appendix 60.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Grand River (Sixth Street Dam to Butterworth Access), by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month									Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Coho salmon	0.0044 (0.0090)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	258 (525)	0 (0)	0 (0)	258 (525)
Chinook salmon	0.0246 (0.0176)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,220 (1,005)	95 (114)	140 (194)	1,455 (1,030)
Rainbow trout	0.1124 (0.0339)	3,386 (1,246)	338 (690)	0 (0)	0 (0)	0 (0)	0 (0)	141 (264)	2,265 (1,144)	510 (404)	6,640 (1,890)
Brown trout	0.0010 (0.0020)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	58 (117)	0 (0)	58 (117)
White sucker	0.0002 (0.0004)	0 (0)	11 (22)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11 (22)
Redhorse spp.	0.0002 (0.0004)	0 (0)	11 (22)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11 (22)
Walleye	0.0036 (0.0044)	17 (34)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	18 (37)	177 (255)	212 (260)
Other	0.0012 (0.0022)	0 (0)	70 (126)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	70 (126)
Total	0.1475 (0.0405)	3,403 (1,246)	430 (702)	0 (0)	0 (0)	0 (0)	0 (0)	1,619 (1,164)	2,436 (1,156)	827 (516)	8,715 (2,237)
Angler hours		18,380 (2,163)	4,185 (1,885)	0 (0)	0 (0)	0 (0)	0 (0)	12,272 (3,896)	18,495 (3,108)	5,742 (858)	59,074 (5,814)
Angler trips		5,099 (619)	1,712 (857)	0 (0)	0 (0)	0 (0)	0 (0)	4,098 (1,526)	5,262 (1,113)	1,762 (419)	17,933 (2,205)
Angler days		4,250 (573)	1,370 (714)	0 (0)	0 (0)	0 (0)	0 (0)	3,725 (1,444)	4,575 (977)	1,762 (419)	15,682 (2,013)

Appendix 61.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Betsie River (Homestead Dam to Elberta) shore fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Chinook salmon	0.0304 (0.0245)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	957 (947)	310 (370)	1,267 (1,017)
Rainbow trout	0.0270 (0.0268)	563 (550)	0 (0)	0 (0)	0 (0)	0 (0)	87 (175)	479 (959)	1,129 (1,119)
Total	0.0574 (0.0364)	563 (550)	0 (0)	0 (0)	0 (0)	0 (0)	1,044 (963)	789 (1,028)	2,396 (1,512)
Angler hours		9,855 (1,087)	962 (342)	0 (0)	0 (0)	0 (0)	14,891 (1,525)	16,996 (1,606)	41,742 (2,467)
Angler trips		1,675 (414)	0 (0)	0 (0)	0 (0)	0 (0)	2,857 (616)	3,176 (532)	7,708 (913)
Angler days		1,675 (414)	0 (0)	0 (0)	0 (0)	0 (0)	2,658 (630)	3,176 (532)	7,509 (923)

Appendix 62.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Platte River shore fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Rainbow trout	0.1762 (0.1442)	983 (777)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	983 (777)
Total	0.1762 (0.1442)	983 (777)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	983 (777)
Angler hours		5,580 (1,182)	1,368 (259)	0 (0)	0 (0)	0 (0)	1,200 (0)	5,580 (1,182)
Angler trips		1,302 (318)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,302 (318)
Angler days		1,112 (331)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,112 (331)

Appendix 63.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Bear River shore fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Apr	May	Jun	Jul	Aug	Sep	
Chinook salmon	0.0576 (0.0628)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,086 (1,173)	1,086 (1,173)
Rainbow trout	0.0903 (0.0442)	862 (569)	374 (368)	352 (329)	0 (0)	0 (0)	115 (250)	1,703 (794)
Rainbow smelt	0.0041 (0.0083)	77 (155)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	77 (155)
Total	0.1519 (0.0788)	939 (590)	374 (368)	352 (329)	0 (0)	0 (0)	1,201 (1,199)	2,866 (1,425)
Angler hours		7,806 (1,414)	3,864 (600)	888 (600)	288 (229)	680 (590)	5,627 (2,158)	18,865 (2,779)
Angler trips		2,518 (576)	1,254 (370)	712 (474)	0 (0)	239 (235)	1,860 (831)	6,583 (1,200)
Angler days		2,188 (551)	1,176 (363)	712 (474)	0 (0)	198 (234)	1,860 (831)	6,134 (1,185)

Appendix 64.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Tittabawassee River (Sanford to Gordon Road), by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Northern pike	0.0004 (0.0009)	0 (0)	55 (116)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	55 (116)
Black bullhead	0.0777 (0.0847)	0 (0)	9,875 (10,029)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9,875 (10,029)
Yellow bullhead	0.0101 (0.0217)	0 (0)	1,285 (2,712)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,285 (2,712)
Brown bullhead	0.0088 (0.0094)	0 (0)	0 (0)	1,113 (1,100)	0 (0)	0 (0)	0 (0)	0 (0)	1,113 (1,100)
Channel catfish	0.0046 (0.0057)	0 (0)	302 (635)	289 (275)	0 (0)	0 (0)	0 (0)	0 (0)	591 (692)
White bass	0.0564 (0.0481)	0 (0)	7,001 (5,414)	172 (238)	0 (0)	0 (0)	0 (0)	0 (0)	7,173 (5,419)
Pumpkinseed	0.0408 (0.0579)	0 (0)	4,913 (7,059)	275 (394)	0 (0)	0 (0)	0 (0)	0 (0)	5,188 (7,070)
White crappie	0.0011 (0.0023)	0 (0)	138 (289)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	138 (289)
Yellow perch	0.0139 (0.0208)	0 (0)	1,768 (2,558)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1,768 (2,558)
Walleye	0.2467 (0.1659)	0 (0)	31,363 (17,084)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	31,363 (17,084)
Freshwater drum	0.0081 (0.0085)	0 (0)	341 (444)	692 (902)	0 (0)	0 (0)	0 (0)	0 (0)	1,033 (1,005)
Other	0.0007 (0.0010)	0 (0)	0 (0)	83 (120)	0 (0)	0 (0)	0 (0)	0 (0)	83 (120)
Total	0.4693 (0.2539)	0 (0)	57,041 (22,049)	2,624 (1,525)	0 (0)	0 (0)	0 (0)	0 (0)	59,665 (22,102)
Angler hours		0 (0)	118,472 (50,138)	8,676 (0)	0 (0)	0 (0)	0 (0)	0 (0)	127,148 (50,138)
Angler trips		0 (0)	32,840 (12,155)	4,823 (815)	0 (0)	0 (0)	0 (0)	0 (0)	37,663 (12,182)
Angler days		0 (0)	31,453 (11,801)	4,823 (815)	0 (0)	0 (0)	0 (0)	0 (0)	36,276 (11,829)



Appendix 65.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Au Sable River (Foote Dam to Oscoda), by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	
Chinook salmon	0.0311 (0.0222)	0 (0)	4 (9)	9 (18)	30 (60)	36 (73)	86 (90)	3,238 (2,426)	3,403 (2,430)
Rainbow trout	0.0255 (0.0058)	226 (115)	2,027 (539)	255 (163)	38 (53)	139 (186)	56 (113)	49 (98)	2,790 (625)
Brown trout	0.0001 (0.0001)	5 (11)	0 (0)	8 (15)	0 (0)	0 (0)	0 (0)	0 (0)	13 (19)
Northern pike	0.0064 (0.0127)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	5 (10)	693 (1,389)	698 (1,389)
White sucker	0.0004 (0.0008)	0 (0)	0 (0)	42 (85)	0 (0)	0 (0)	0 (0)	0 (0)	42 (85)
Redhorse spp.	0.0003 (0.0006)	0 (0)	0 (0)	38 (75)	0 (0)	0 (0)	0 (0)	0 (0)	38 (75)
Channel catfish	0.0803 (0.0309)	0 (0)	0 (0)	0 (0)	3,048 (1,275)	1,997 (1,160)	1,046 (636)	2,688 (2,808)	8,779 (3,356)
White perch	0.0006 (0.0012)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	64 (128)	0 (0)	64 (128)
Rock bass	0.0012 (0.0024)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	132 (264)	0 (0)	132 (264)
Smallmouth bass	0.0022 (0.0028)	0 (0)	0 (0)	10 (21)	27 (54)	181 (302)	26 (39)	0 (0)	244 (310)
Yellow perch	0.0009 (0.0011)	0 (0)	0 (0)	32 (53)	0 (0)	0 (0)	69 (109)	0 (0)	101 (121)
Walleye	0.0076 (0.0025)	0 (0)	0 (0)	275 (138)	195 (126)	297 (184)	12 (24)	54 (84)	833 (276)
Freshwater drum	0.0021 (0.0017)	0 (0)	0 (0)	0 (0)	0 (0)	149 (160)	37 (51)	39 (78)	225 (185)
Other	0.0005 (0.0010)	0 (0)	0 (0)	0 (0)	52 (104)	0 (0)	0 (0)	0 (0)	52 (104)

Appendix 65.—Continued:

Species	Total catch per hour	Month							Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	
Total	0.1593 (0.0413)	231 (116)	2,031 (539)	669 (250)	3,390 (1,289)	2,799 (1,239)	1,533 (727)	6,761 (3,965)	17,414 (4,451)
Angler hours		4,053 (645)	26,329 (2,679)	13,896 (964)	11,235 (1,430)	16,037 (1,397)	11,962 (1,079)	25,791 (3,050)	109,303 (4,794)
Angler trips		964 (168)	5,625 (615)	3,629 (329)	2,751 (459)	4,791 (605)	3,336 (488)	5,788 (975)	26,884 (1,510)
Angler days		779 (150)	3,891 (479)	2,746 (305)	2,682 (457)	4,257 (588)	3,011 (472)	4,746 (970)	22,112 (1,436)

Appendix 66.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Chocolay River shore fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month						Season
		Mar	Apr	May	Jun	Jul	Aug	
Coho salmon	0.0078 (0.0157)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	15 (30)	15 (30)
Rainbow trout	0.0545 (0.0620)	94 (116)	0 (0)	0 (0)	0 (0)	0 (0)	11 (22)	105 (118)
Total	0.0623 (0.0643)	94 (116)	0 (0)	0 (0)	0 (0)	0 (0)	26 (37)	120 (122)
Angler hours		1,034 (267)	0 (0)	0 (0)	0 (0)	0 (0)	893 (212)	1,927 (341)
Angler trips		555 (198)	0 (0)	0 (0)	0 (0)	0 (0)	466 (121)	1,021 (232)
Angler days		441 (165)	0 (0)	0 (0)	0 (0)	0 (0)	375 (106)	816 (196)

Appendix 67.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Carp River shore fishery, 1988. Two standard errors in parentheses.

Species	Total catch per hour	<u>Month</u> May	Season
Rainbow trout	0.0020 (0.0040)	2 (4)	2 (4)
Splake	0.0408 (0.0831)	41 (83)	41 (83)
Total	0.0428 (0.0832)	43 (83)	43 (83)
Angler hours		1,005 (231)	1,005 (231)
Angler trips		727 (215)	727 (215)
Angler days		500 (169)	500 (169)

Appendix 68.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Dead River, by all modes of sportfishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	<u>Month</u> Sep	Season
Chinook salmon	0.0151 (0.0308)	63 (127)	63 (127)
Total	0.0151 (0.0308)	63 (127)	63 (127)
Angler hours		4,185 (1,240)	4,185 (1,240)
Angler trips		2,106 (707)	2,106 (707)
Angler days		1,558 (587)	1,558 (587)

Appendix 69.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the lower Saginaw River, by all modes of fishing, 1988. Two standard errors in parentheses.

Species	Total catch per hour	Month							Season
		Mar	Apr	May	Jun	Jul	Aug	Sep	
Yellow bullhead	0.0027 (0.0050)	0 (0)	0 (0)	435 (778)	0 (0)	0 (0)	0 (0)	0 (0)	435 (778)
Brown bullhead	0.0013 (0.0021)	0 (0)	0 (0)	175 (320)	35 (73)	0 (0)	0 (0)	0 (0)	210 (328)
Channel catfish	0.0041 (0.0049)	0 (0)	0 (0)	550 (707)	63 (105)	31 (56)	9 (26)	0 (0)	653 (717)
White bass	0.0009 (0.0020)	0 (0)	0 (0)	145 (310)	0 (0)	0 (0)	0 (0)	0 (0)	145 (310)
Pumpkinseed	0.0016 (0.0031)	0 (0)	0 (0)	218 (465)	31 (73)	0 (0)	0 (0)	0 (0)	249 (471)
White crappie	0.0043 (0.0085)	0 (0)	43 (103)	626 (1,307)	12 (29)	0 (0)	0 (0)	0 (0)	681 (1,311)
Yellow perch	0.0028 (0.0051)	0 (0)	303 (719)	145 (310)	0 (0)	0 (0)	0 (0)	0 (0)	448 (783)
Walleye	0.0397 (0.0372)	0 (0)	1,089 (2,590)	5,265 (4,372)	0 (0)	0 (0)	0 (0)	0 (0)	6,354 (5,082)
Freshwater drum	0.0009 (0.0012)	0 (0)	0 (0)	73 (155)	39 (65)	29 (72)	5 (13)	0 (0)	146 (183)
Other	0.0007 (0.0012)	0 (0)	0 (0)	117 (201)	0 (0)	0 (0)	0 (0)	0 (0)	117 (201)
Total	0.0590 (0.0446)	0 (0)	1,435 (2,690)	7,749 (4,744)	180 (164)	60 (91)	14 (29)	0 (0)	9,438 (5,457)
Angler hours		0 (0)	11,334 (10,027)	51,761 (17,531)	1,715 (1,535)	90,855 (75,039)	1,941 (1,109)	2,445 (2,350)	160,051 (77,768)
Angler trips		0 (0)	7,243 (8,248)	14,968 (5,124)	1,051 (944)	25,552 (22,195)	1,087 (665)	3,096 (3,822)	52,997 (24,553)
Angler days		0 (0)	6,443 (7,232)	13,550 (4,733)	908 (836)	13,063 (11,118)	942 (599)	2,648 (3,073)	37,554 (14,450)

**SECTION VI. WINTER CATCH AND EFFORT ESTIMATES BY SITE**

Appendix 70.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Keweenaw Bay ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	Month		Season
		Feb	Mar	
Coho salmon	0.0039 (0.0081)	320 (660)	0 (0)	320 (660)
Chinook salmon	0.0067 (0.0125)	509 (1,017)	43 (88)	552 (1,021)
Lake trout	0.3197 (0.1818)	16,190 (13,028)	10,256 (4,253)	26,446 (13,705)
Rainbow smelt	0.7652 (1.4449)	15,080 (30,160)	48,211 (114,686)	63,291 (118,585)
Yellow perch	0.0659 (0.1300)	5,341 (10,681)	113 (231)	5,454 (10,683)
Lake whitefish	0.0385 (0.0441)	3,188 (3,572)	0 (0)	3,188 (3,572)
Other	0.0201 (0.0402)	1,600 (3,298)	60 (123)	1,660 (3,300)
<b>Total</b>	<b>1.2200</b> <b>(1.4782)</b>	<b>42,228</b> <b>(34,908)</b>	<b>58,683</b> <b>(114,765)</b>	<b>100,911</b> <b>(119,957)</b>
Angler hours		37,440 (3,840)	45,273 (18,996)	82,713 (19,380)
Angler trips		11,615 (2,081)	21,207 (13,501)	32,822 (13,660)
Angler days		11,615 (2,081)	21,207 (13,501)	32,822 (13,660)

Appendix 71.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Huron Bay ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	Month		Season
		Feb	Mar	
Lake trout	0.0282 (0.0264)	0 (0)	197 (178)	197 (178)
Yellow perch	0.0168 (0.0340)	117 (235)	0 (0)	117 (235)
Lake whitefish	0.1116 (0.0755)	227 (257)	551 (417)	778 (490)
Other	0.0057 (0.0122)	0 (0)	40 (85)	40 (85)
Total	0.1623 (0.0920)	344 (348)	788 (461)	1,132 (578)
Angler hours		1,776 (0)	5,198 (1,720)	6,974 (1,720)
Angler trips		900 (189)	2,761 (1,006)	3,661 (1,024)
Angler days		900 (189)	2,761 (1,006)	3,661 (1,024)



Appendix 72.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Little Bay de Noc ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	Month			Season
		Jan	Feb	Mar	
Brown trout	0.0029 (0.0038)	451 (671)	18 (41)	54 (112)	523 (682)
Splake	0.0072 (0.0074)	1,307 (1,351)	11 (25)	0 (0)	1,318 (1,351)
Rainbow smelt	0.0056 (0.0053)	0 (0)	1,017 (949)	0 (0)	1,017 (949)
Northern pike	0.0056 (0.0074)	904 (1,321)	120 (240)	0 (0)	1,024 (1,343)
White sucker	0.0058 (0.0073)	984 (1,317)	70 (140)	0 (0)	1,054 (1,324)
Yellow perch	0.4760 (0.1489)	57,429 (22,379)	20,146 (8,376)	9,508 (7,963)	87,083 (25,187)
Walleye	0.0331 (0.0171)	3,594 (2,568)	2,468 (1,641)	0 (0)	6,062 (3,048)
Burbot	0.0008 (0.0016)	144 (289)	0 (0)	0 (0)	144 (289)
Total	0.5369 (0.1534)	64,813 (22,655)	23,850 (8,592)	9,562 (7,964)	98,225 (25,505)
Angler hours		126,313 (20,952)	42,791 (3,766)	13,859 (4,803)	182,963 (21,823)
Angler trips		35,827 (6,388)	12,852 (1,336)	4,864 (1,731)	53,543 (6,752)
Angler days		30,883 (5,926)	10,964 (1,297)	4,815 (1,721)	46,662 (6,306)

Appendix 73.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for Big Bay de Noc ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	Month			Season
		Jan	Feb	Mar	
Rainbow smelt	0.0010 (0.0021)	14 (29)	0 (0)	0 (0)	14 (29)
Northern pike	0.0005 (0.0010)	7 (14)	0 (0)	0 (0)	7 (14)
Yellow perch	0.8640 (0.3739)	4,504 (1,592)	4,613 (3,833)	2,424 (1,883)	11,541 (4,558)
Burbot	0.0010 (0.0021)	14 (29)	0 (0)	0 (0)	14 (29)
Total	0.8667 (0.3741)	4,539 (1,593)	4,613 (3,833)	2,424 (1,883)	11,576 (4,558)
Angler hours		5,083 (1,257)	6,137 (1,721)	2,137 (1,019)	13,357 (2,362)
Angler trips		1,197 (331)	1,592 (472)	698 (372)	3,487 (686)
Angler days		1,070 (284)	1,592 (472)	608 (298)	3,270 (626)

Appendix 74.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the West Arm of Grand Traverse Bay ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	Month May	Season
Rainbow trout	0.0110 (0.0254)	264 (590)	264 (590)
Brown trout	0.0088 (0.0203)	211 (472)	211 (472)
Yellow perch	0.0587 (0.1354)	1,410 (3,149)	1,410 (3,149)
Lake whitefish	0.1045 (0.1243)	2,509 (2,607)	2,509 (2,607)
Burbot	0.0264 (0.0609)	634 (1,417)	634 (1,417)
Total	0.2093 (0.2193)	5,028 (4,392)	5,028 (4,392)
Angler hours		24,018 (13,893)	24,018 (13,893)
Angler trips		6,684 (4,088)	6,684 (4,088)
Angler days		5,395 (3,392)	5,395 (3,392)

Appendix 75.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the East Arm of Grand Traverse Bay ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	<u>Month</u> May	Season
Yellow perch	0.0052 (0.0064)	93 (107)	93 (107)
Lake whitefish	0.1993 (0.1594)	3,562 (2,356)	3,562 (2,356)
Burbot	0.0481 (0.0683)	860 (1,159)	860 (1,159)
Other	0.0004 (0.0008)	8 (16)	8 (16)
Total	0.2531 (0.1860)	4,523 (2,628)	4,523 (2,628)
Angler hours		17,870 (8,036)	17,870 (8,036)
Angler trips		4,671 (2,159)	4,671 (2,159)
Angler days		3,830 (1,799)	3,830 (1,799)

Appendix 76.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Bay City to Saganing Creek ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	Month			Season
		Jan	Feb	Mar	
White perch	0.0136 (0.0168)	1,707 (2,030)	0 (0)	0 (0)	1,707 (2,030)
Pumpkinseed	0.0017 (0.0028)	210 (338)	0 (0)	0 (0)	210 (338)
Black crappie	0.0001 (0.0002)	11 (23)	0 (0)	0 (0)	11 (23)
Yellow perch	1.0830 (0.6716)	67,320 (30,158)	40,152 (28,261)	28,913 (58,534)	136,385 (71,655)
Walleye	0.1365 (0.1023)	0 (0)	11,440 (4,417)	5,744 (10,699)	17,184 (11,575)
Total	1.2348 (0.7056)	69,248 (30,228)	51,592 (28,604)	34,657 (59,504)	155,497 (72,613)
Angler hours		17,392 (5,340)	77,719 (21,364)	30,821 (35,148)	125,932 (41,477)
Angler trips		4,561 (1,445)	16,862 (5,512)	6,978 (8,326)	28,401 (10,089)
Angler days		4,463 (1,393)	14,432 (4,652)	6,832 (8,304)	25,727 (9,620)

Appendix 77.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Au Gres ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	Month			Season
		Jan	Feb	Mar	
Northern pike	0.0018 (0.0038)	63 (131)	0 (0)	0 (0)	63 (131)
Pumpkinseed	0.0010 (0.0021)	36 (76)	0 (0)	0 (0)	36 (76)
Yellow perch	1.9563 (0.7687)	41,188 (21,142)	19,926 (8,606)	8,078 (6,037)	69,192 (23,611)
Walleye	0.0520 (0.0516)	0 (0)	211 (438)	1,627 (1,733)	1,838 (1,787)
Total	2.0111 (0.7758)	41,287 (21,143)	20,137 (8,617)	9,705 (6,281)	71,129 (23,680)
Angler hours		14,945 (4,713)	10,369 (3,038)	10,054 (4,008)	35,368 (6,892)
Angler trips		4,296 (1,450)	3,006 (933)	2,861 (1,188)	10,163 (2,094)
Angler days		3,908 (1,327)	2,793 (858)	2,523 (1,057)	9,224 (1,901)

Appendix 78.—Estimated catch per hour, number caught, and effort (angler hours, trips, and days) for the Sand Point to Sebewaing ice fishery, 1989. Two standard errors in parentheses.

Species	Total catch per hour	Month			Season
		Jan	Feb	Mar	
Rainbow smelt	0.0008 (0.0017)	53 (112)	0 (0)	0 (0)	53 (112)
White perch	0.0084 (0.0137)	534 (921)	32 (68)	8 (19)	574 (924)
White bass	0.0008 (0.0017)	53 (109)	0 (0)	0 (0)	53 (109)
Yellow perch	2.2156 (0.9092)	109,976 (45,075)	28,947 (19,926)	12,019 (9,769)	150,942 (50,242)
Walleye	<0.0001 (<0.0001)	0 (0)	0 (0)	2 (5)	2 (5)
Total	2.2256 (0.9107)	110,616 (45,085)	28,979 (19,926)	12,029 (9,769)	151,624 (50,251)
Angler hours		47,204 (13,416)	10,335 (6,258)	10,589 (6,940)	68,128 (16,350)
Angler trips		16,435 (5,098)	2,619 (1,569)	2,344 (1,555)	21,398 (5,556)
Angler days		16,007 (5,008)	2,315 (1,382)	1,897 (1,272)	20,219 (5,349)