# Appendix D

Boardman River temperature data.

This appendix contains all the most recent water temperature data for the Boardman River main stem contained in records at the Central Lake Michigan Management Traverse City and Cadillac offices. All temperature documentation is in degrees Fahrenheit.

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Table D.1.–Boardman River temperature data for Forks Campground, 27N 9W Sec. 4.

| | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | – | – | – | – | – | – |
| February | – | – | – | – | – | – | – | – | – |
| June | – | – | – | 60.8 | 70.2 | 51.4 | 58.4 | 68.0 | 50.0 |
| July | – | – | – | 60.6 | 68.4 | 51.5 | 60.8 | 69.4 | 53.4 |
| August | – | – | – | 59.2 | 68.6 | 50.8 | 58.6 | 71.8 | 50.8 |
| December | – | – | – | – | – | – | – | – | – |

Table D.2.–Boardman River temperature data for Ranch Rudolf, 26N 9W Section 7.

| | 2002 (upper) [a] | | | 2002 (lower) [a] | | | 2003 (upper) | | | 2004 (lower) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | – | – | – | 34.9 | 40.6 | 32.4 | – | – | – |
| February | – | – | – | – | – | – | 34.6 | 41.9 | 32.2 | – | – | – |
| June | – | – | – | – | – | – | – | – | – | – | – | – |
| July | 62.4 | 71.1 | 55.3 | 62.1 | 70.0 | 56.2 | – | – | – | 57.5 | 64.0 | 51.5 |
| August | 59.6 | 65.9 | 52.6 | 59.6 | 65.0 | 53.3 | – | – | – | 55.8 | 62.5 | 49.0 |
| December | 37.6 | 43.4 | 32.7 | – | – | – | – | – | – | – | – | – |

[a] Refers to the upper and lower ends of the electrofishing station.

Table D.3.–Boardman River temperature data for Scheck's Campground, 26N 9W Section 18.

| | 2003 | | | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | 34.3 | 41.3 | 31.9 | 35.5 | 40.3 | 32.0 | – | – | – |
| February | – | – | – | – | – | – | 37.6 | 42.0 | 32.3 | – | – | – |
| June | 57.1 | 69.9 | 46.1 | – | – | – | 60.9 [a] | 69.4 [a] | 52.0 [a] | – | – | – |
| July | 59.5 | 66.4 | 52.0 | – | – | – | 60.4 | 67.9 | 51.2 | – | – | – |
| August | 59.5 | 67.0 | 51.4 | 56.5 | 64.2 | 49.0 | 59.0 | 68.2 | 51.7 | – | – | – |
| December | 37.6 | 42.2 | 33.7 | 37.0 | 41.7 | 32.0 | 37.4 | 41.4 | 33.8 | – | – | – |

[a] Includes data from June 4 through June 30, 2005.

Table D.4.–Boardman River temperature data for Below Brown Bridge Dam, 26N 10W, Section 15.

| | 2003 | | | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | 34.7 | 38.2 | 33.0 | – | – | – | 37.8 | 39.5 | 36.1 |
| February | – | – | – | 35.0 | 37.6 | 33.0 | – | – | – | 36.3 | 38.6 | 34.4 |
| June | 61.8 | 69.5 | 55.2 | – | – | – | 66.8 [a] | 73.0 [a] | 59.9 [a] | – | – | – |
| July | 66.0 | 69.8 | 61.7 | – | – | – | 68.2 | 72.4 | 63.3 | – | – | – |
| August | 67.3 | 71.3 | 63.1 | 63.0 | 69.8 | 57.2 | 66.0 | 72.4 | 60.5 | – | – | – |
| December | 37.3 | 38.8 | 36.2 | – | – | – | 36.3 | 38.9 | 34.9 | – | – | – |

[a] Includes data from June 4 through June 30, 2005.

Table D.5.–Boardman River temperature data for Garfield Rd. (County Road 611), 26N, 10W, Section 21.

| | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | – | – | – | 37.7 | 39.3 | 35.9 |
| February | – | – | – | – | – | – | 36.2 | 38.5 | 34.2 |
| June | – | – | – | – | – | – | 63.8 | 67.8 | 59.7 |
| July | – | – | – | – | – | – | 67.1 | 72.0 | 61.4 |
| August | 62.9 | 69.5 | 57.5 | – | – | – | 66.2 | 73.2 | 61.2 |
| December | – | – | – | 36.1 | 38.7 | 34.8 | – | – | – |

Table D.6.–Boardman River temperature data for RR Trestle, 26N 10W Section 17.

| | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | 34.6 | 37.5 | 31.8 | – | – | – |
| February | – | – | – | 36.5 | 39.2 | 34.1 | – | – | – |
| June | – | – | – | 65.2 | 72.7 | 58.8 | – | – | – |
| July | – | – | – | 66.2 | 73.4 | 61.0 | – | – | – |
| August | 61.6 | 69.5 | 56.6 | 64.3 | 71.2 | 58.8 | – | – | – |
| December | 35.7 | 39.5 | 31.8 | – | – | – | – | – | – |

Table D.7.–Boardman River temperature data for Shumsky's Canoe Landing, 26N 11W Section 13.

| | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | – | – | – | 37.7 | 40.3 | 33.7 |
| February | – | – | – | – | – | – | 35.8 | 40.3 | 32.0 |
| June | – | – | – | 65.8 [a] | 74.8 [a] | 58.1 [a] | 62.9 | 70.3 | 55.7 |
| July | – | – | – | 66.6 | 75.1 | 59.6 | 66.4 | 75.8 | 60.2 |
| August | – | – | – | 64.7 | 73.9 | 57.8 | 65.1 | 76.7 | 58.2 |
| December | – | – | – | 36.1 | 39.2 | 33.2 | – | – | – |

[a] Includes data from June 4 through June 30, 2005.

Table D.8.–Boardman River temperature data for Beitner Rd., 26N 11W Section 9.

| | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | – | – | – | 38.0 | 41.0 | 33.7 |
| February | – | – | – | – | – | – | 36.0 | 40.8 | 31.9 |
| June | – | – | – | 65.0 | 73.8 | 57.2 | 62.4 | 71.0 | 54.7 |
| July | – | – | – | 65.8 | 73.8 | 57.8 | 65.8 | 75.6 | 58.6 |
| August | 60.9 | 69.4 | 53.4 | 64.0 | 73.2 | 56.4 | 64.2 | 75.9 | 56.7 |
| December | – | – | – | 36.5 | 39.6 | 33.4 | – | – | – |

Table D.9.–Boardman River temperature data for Below Boardman Dam, 27N 11W Section 34

| | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | 34.8 | 37.7 | 32.5 | 37.7 | 39.7 | 36.3 |
| February | – | – | – | 36.9 | 38.8 | 34.8 | 36.3 | 39.1 | 33.7 |
| June | – | – | – | 66.7 [a] | 73.3 [a] | 61.0 [a] | 64.1 | 69.1 | 59.9 |
| July | – | – | – | 67.9 | 73.3 | 64.2 | 67.7 | 73.0 | 64.5 |
| August | 62.8 | 66.8 | 59.0 | 65.9 | 72.7 | 61.6 | 66.6 | 74.2 | 61.9 |
| December | 36.0 | 39.4 | 32.5 | 36.4 | 38.9 | 34.6 | – | – | – |

[a] Includes data from June 4 through June 30, 2005.

Table D.10.–Boardman River temperature data for Below Sabin Dam, 27N 11W Section 27

| | 2004 | | | 2005 | | | 2006 | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | Ave | Max | Min | Ave | Max | Min | Ave | Max | Min |
| January | – | – | – | 34.1 | 37.3 | 32.4 | 37.3 | 39.5 | 35.3 |
| February | – | – | – | 36.5 | 38.4 | 34.1 | 35.8 | 39.5 | 33.0 |
| June | – | – | – | – | – | – | 64.9 | 71.5 | 59.9 |
| July | – | – | – | – | – | – | 68.9 | 75.8 | 64.2 |
| August | 64.0 | 69.3 | 59.0 | – | – | – | 67.6 | 77.6 | 62.2 |
| December | 35.4 | 39.5 | 32.4 | 35.8 | 38.7 | 33.5 | – | – | – |

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# Appendix E

## Angler creel survey report for Boardman River, summer, 2005

This appendix contains summary data from the DNR Fisheries Division creel census of the Boardman River April 26–September 30, 2005. Site 295 extended from the Boardman River mouth upstream to the Brown Bridge road crossing and site 296 extended from Brown Bridge Road to the Forks (confluence of the North and South branches of the Boardman River).

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Table E.1.–Estimated harvest, catch per hour, and fishing pressure for 295, boat. Site 295 extended from the Boardman River mouth upstream to the Brown Bridge road crossing. Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Number harvested | | | | | | | |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brown trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brook trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0268 | (<0.1) | 0 | (0) | 0 | (0) | 99 | (198) | 0 | (0) | 0 | (0) | 99 | (198) |
| Yellow perch | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Largemouth bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rock bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Common white sucker | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Total harvest | 0.0268 | (<0.1) | 0 | (0) | 0 | (0) | 99 | (198) | 0 | (0) | 0 | (0) | 99 | (198) |
| | | | | | | | Number released | | | | | | | |
| Coho salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brown trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0911 | (<0.1) | 0 | (0) | 0 | (0) | 298 | (444) | 40 | (53) | 0 | (0) | 338 | (447) |
| Largemouth bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Walleye | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Northern pike | 0.0268 | (<0.1) | 0 | (0) | 0 | (0) | 99 | (198) | 0 | (0) | 0 | (0) | 99 | (198) |
| Common white sucker | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rock bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Pumpkinseed | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Yellow perch | 0.2141 | (<0.1) | 0 | (0) | 0 | (0) | 794 | (1,587) | 0 | (0) | 0 | (0) | 794 | (1,587) |
| Total released | 0.3319 | (<0.1) | 0 | (0) | 0 | (0) | 1,190 | (1,660) | 40 | (53) | 0 | (0) | 1,230 | (1,661) |
| Total catch | 0.3587 | (<0.1) | 0 | (0) | 0 | (0) | 1,290 | (1,672) | 40 | (53) | 0 | (0) | 1,330 | (1,673) |
| Angler hours | | | 2,035 | (<0.1) | 320 | (640) | 992 | (887) | 360 | (416) | 0 | (0) | 3,707 | (<0.1) |
| Angler trips | | | 1,357 | (<0.1) | 65 | (133) | 496 | (444) | 80 | (92) | 0 | (0) | 1,998 | (<0.1) |

Table E.2.–Estimated harvest, catch per hour, and fishing pressure for 295, shore. Site 295 extended from the Boardman River mouth upstream to the Brown Bridge road crossing. Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number harvested | | | | | | | | | | | |
| Chinook salmon | 0.0101 | (0.0104) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 154 | (152) | 154 | (152) |
| Rainbow trout | 0.0096 | (0.0088) | 135 | (127) | 0 | (0) | 10 | (21) | 0 | (0) | 0 | (0) | 145 | (129) |
| Brown trout | 0.0013 | (0.0025) | 19 | (38) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 19 | (38) |
| Brook trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Lake trout | 0.0030 | (0.0044) | 46 | (66) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 46 | (66) |
| Smallmouth bass | 0.0081 | (0.0113) | 0 | (0) | 122 | (168) | 0 | (0) | 0 | (0) | 0 | (0) | 122 | (168) |
| Yellow perch | 0.0044 | (0.0060) | 0 | (0) | 0 | (0) | 58 | (88) | 9 | (17) | 0 | (0) | 67 | (89) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Largemouth bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rock bass | 0.0278 | (0.0414) | 0 | (0) | 0 | (0) | 422 | (618) | 0 | (0) | 0 | (0) | 422 | (618) |
| Carp | 0.0030 | (0.0049) | 0 | (0) | 45 | (74) | 0 | (0) | 0 | (0) | 0 | (0) | 45 | (74) |
| Common white sucker | 0.0081 | (0.0109) | 124 | (162) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 124 | (162) |
| Other | 0.0012 | (0.0025) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 19 | (38) | 19 | (38) |
| Total harvest | 0.0766 | (0.0503) | 323 | (220) | 167 | (183) | 490 | (625) | 9 | (17) | 173 | (157) | 1,162 | (705) |
| | | | Number released | | | | | | | | | | | |
| Coho salmon | 0.0062 | (0.0089) | 94 | (133) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 94 | (133) |
| Chinook salmon | 0.0122 | (0.0140) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 185 | (208) | 185 | (208) |
| Rainbow trout | 0.1423 | (0.0948) | 1,294 | (997) | 92 | (146) | 746 | (868) | 6 | (12) | 19 | (38) | 2,157 | (1,331) |
| Brown trout | 0.0044 | (0.0051) | 43 | (62) | 0 | (0) | 0 | (0) | 3 | (6) | 21 | (43) | 67 | (75) |
| Lake trout | 0.0054 | (0.0064) | 81 | (95) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 81 | (95) |
| Smallmouth bass | 0.2470 | (0.1164) | 109 | (132) | 1,322 | (947) | 1,459 | (960) | 517 | (507) | 339 | (369) | 3,745 | (1,493) |
| Largemouth bass | 0.0020 | (0.0041) | 0 | (0) | 0 | (0) | 30 | (62) | 0 | (0) | 0 | (0) | 30 | (62) |
| Walleye | 0.0045 | (0.0049) | 0 | (0) | 23 | (47) | 25 | (39) | 20 | (39) | 0 | (0) | 68 | (73) |
| Northern pike | 0.0008 | (0.0014) | 0 | (0) | 0 | (0) | 0 | (0) | 12 | (22) | 0 | (0) | 12 | (22) |
| Common white sucker | 0.0246 | (0.0172) | 299 | (219) | 54 | (100) | 20 | (40) | 0 | (0) | 0 | (0) | 373 | (244) |
| Rock bass | 0.0958 | (0.0685) | 0 | (0) | 1,012 | (933) | 333 | (237) | 97 | (136) | 11 | (21) | 1,452 | (972) |
| Carp | 0.0159 | (0.0239) | 11 | (21) | 199 | (354) | 10 | (20) | 0 | (0) | 21 | (43) | 242 | (358) |
| Bluegill | 0.0032 | (0.0052) | 0 | (0) | 49 | (77) | 0 | (0) | 0 | (0) | 0 | (0) | 49 | (77) |
| Pumpkinseed | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Yellow perch | 0.0186 | (0.0144) | 0 | (0) | 68 | (96) | 152 | (166) | 20 | (39) | 43 | (67) | 282 | (207) |
| Total released | 0.5829 | (0.2105) | 1,931 | (1,044) | 2,819 | (1,393) | 2,776 | (1,329) | 673 | (528) | 639 | (435) | 8,838 | (2,295) |
| Total catch | 0.6596 | (0.2291) | 2,254 | (1,067) | 2,986 | (1,405) | 3,266 | (1,469) | 682 | (528) | 811 | (463) | 10,000 | (2,401) |
| Angler hours | | | 5,014 | (1,698) | 3,108 | (2,258) | 2,967 | (1,438) | 761 | (672) | 3,312 | (1,997) | 15,161 | (3,806) |
| Angler trips | | | 2,937 | (1,123) | 1,715 | (1,404) | 1,447 | (771) | 331 | (284) | 1,894 | (1,287) | 8,323 | (2,359) |

Table E.3.–Estimated harvest, catch per hour, and fishing pressure for 296, boat. Site 296 extended from Brown Bridge Road to the Forks (confluence of the North and South branches of the Boardman River). Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Number harvested | | | | | | | |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brown trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brook trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0032 | (<0.1) | 13 | (26) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 13 | (26) |
| Yellow perch | 0.0248 | (<0.1) | 0 | (0) | 0 | (0) | 99 | (199) | 0 | (0) | 0 | (0) | 99 | (199) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.0578 | (<0.1) | 231 | (454) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 231 | (454) |
| Largemouth bass | 0.0096 | (<0.1) | 38 | (57) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 38 | (57) |
| Rock bass | 0.0064 | (<0.1) | 26 | (52) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 26 | (52) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Common white sucker | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Total harvest | 0.1018 | (<0.1) | 308 | (461) | 0 | (0) | 99 | (199) | 0 | (0) | 0 | (0) | 407 | (502) |
| | | | | | | | Number released | | | | | | | |
| Coho salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brown trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0643 | (<0.1) | 0 | (0) | 77 | (105) | 40 | (88) | 0 | (0) | 140 | (262) | 257 | (296) |
| Largemouth bass | 0.0513 | (<0.1) | 180 | (304) | 26 | (49) | 0 | (0) | 0 | (0) | 0 | (0) | 205 | (307) |
| Walleye | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Northern pike | 0.0192 | (<0.1) | 0 | (0) | 77 | (127) | 0 | (0) | 0 | (0) | 0 | (0) | 77 | (127) |
| Common white sucker | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rock bass | 0.0770 | (<0.1) | 282 | (299) | 26 | (52) | 0 | (0) | 0 | (0) | 0 | (0) | 308 | (304) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.1048 | (<0.1) | 154 | (303) | 0 | (0) | 120 | (184) | 0 | (0) | 145 | (263) | 419 | (441) |
| Pumpkinseed | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Yellow perch | 0.0684 | (<0.1) | 0 | (0) | 26 | (52) | 238 | (259) | 0 | (0) | 10 | (20) | 273 | (265) |
| Total released | 0.3850 | (<0.1) | 616 | (523) | 230 | (187) | 398 | (330) | 0 | (0) | 295 | (372) | 1,540 | (745) |
| Total catch | 0.4868 | (<0.1) | 924 | (697) | 230 | (187) | 497 | (385) | 0 | (0) | 295 | (372) | 1,947 | (899) |
| Angler hours | | | 225 | (134) | 1,037 | (1,116) | 1,728 | (919) | 620 | (<0.1) | 390 | (413) | 3,999 | (<0.1) |
| Angler trips | | | 90 | (61) | 282 | (308) | 853 | (494) | 124 | (<0.1) | 220 | (248) | 1,569 | (<0.1) |

Table E.4.–Estimated harvest, catch per hour, and fishing pressure for 296, shore. Site 296 extended from Brown Bridge Road to the Forks (confluence of the North and South branches of the Boardman River). Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number harvested | | | | | | | | | | | |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brown trout | 0.0104 | (0.0119) | 49 | (66) | 13 | (20) | 0 | (0) | 0 | (0) | 0 | (0) | 62 | (69) |
| Brook trout | 0.0083 | (0.0109) | 4 | (9) | 45 | (63) | 0 | (0) | 0 | (0) | 0 | (0) | 49 | (64) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Yellow perch | 0.0127 | (0.0182) | 2 | (5) | 73 | (107) | 0 | (0) | 0 | (0) | 0 | (0) | 76 | (107) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.0192 | (0.0211) | 14 | (26) | 73 | (107) | 27 | (54) | 0 | (0) | 0 | (0) | 114 | (123) |
| Largemouth bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rock bass | 0.0078 | (0.0100) | 47 | (59) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 47 | (59) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Common white sucker | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Total harvest | 0.0584 | (0.0357) | 116 | (93) | 205 | (166) | 27 | (54) | 0 | (0) | 0 | (0) | 348 | (197) |
| | | | Number released | | | | | | | | | | | |
| Coho salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0.0060 | (0.0074) | 7 | (14) | 12 | (24) | 16 | (33) | 0 | (0) | 0 | (0) | 36 | (43) |
| Brown trout | 0.1625 | (0.1260) | 462 | (598) | 178 | (223) | 317 | (327) | 0 | (0) | 11 | (21) | 968 | (717) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0226 | (0.0195) | 0 | (0) | 0 | (0) | 101 | (100) | 34 | (51) | 0 | (0) | 135 | (112) |
| Largemouth bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Walleye | 0.0023 | (0.0046) | 0 | (0) | 0 | (0) | 14 | (27) | 0 | (0) | 0 | (0) | 14 | (27) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Common white sucker | 0.0046 | (0.0066) | 27 | (39) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 27 | (39) |
| Rock bass | 0.1795 | (0.1208) | 215 | (272) | 16 | (33) | 604 | (578) | 191 | (212) | 43 | (63) | 1,069 | (677) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.1965 | (0.1406) | 133 | (179) | 230 | (276) | 521 | (677) | 251 | (245) | 35 | (57) | 1,171 | (794) |
| Pumpkinseed | 0.0023 | (0.0047) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 14 | (28) | 14 | (28) |
| Other | 0.0235 | (0.0473) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 140 | (280) | 140 | (280) |
| Yellow perch | 0.0216 | (0.0167) | 4 | (9) | 0 | (0) | 0 | (0) | 95 | (76) | 29 | (56) | 129 | (95) |
| Total released | 0.6214 | (0.2613) | 849 | (682) | 437 | (357) | 1,574 | (955) | 572 | (337) | 272 | (300) | 3,703 | (1,307) |
| Total catch | 0.6798 | (0.2708) | 965 | (688) | 641 | (394) | 1,601 | (956) | 572 | (337) | 272 | (300) | 4,051 | (1,322) |
| Angler hours | | | 1,834 | (769) | 952 | (643) | 1,881 | (584) | 902 | (448) | 390 | (557) | 5,958 | (1,362) |
| Angler trips | | | 696 | (321) | 404 | (293) | 1,030 | (344) | 391 | (245) | 270 | (374) | 2,791 | (712) |

Table E.5.–Estimated harvest, catch per hour, and fishing pressure for 295. Site 295 extended from the Boardman River mouth upstream to the Brown Bridge road crossing. Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number harvested | | | | | | | | | | | |
| Chinook salmon | 0.0081 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 154 | (152) | 154 | (152) |
| Rainbow trout | 0.0077 | (<0.1) | 135 | (127) | 0 | (0) | 10 | (21) | 0 | (0) | 0 | (0) | 145 | (129) |
| Brown trout | 0.0010 | (<0.1) | 19 | (38) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 19 | (38) |
| Brook trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Lake trout | 0.0024 | (<0.1) | 46 | (66) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 46 | (66) |
| Smallmouth bass | 0.0117 | (<0.1) | 0 | (0) | 122 | (168) | 99 | (198) | 0 | (0) | 0 | (0) | 221 | (260) |
| Yellow perch | 0.0035 | (<0.1) | 0 | (0) | 0 | (0) | 58 | (88) | 9 | (17) | 0 | (0) | 67 | (89) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Largemouth bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rock bass | 0.0224 | (<0.1) | 0 | (0) | 0 | (0) | 422 | (618) | 0 | (0) | 0 | (0) | 422 | (618) |
| Carp | 0.0024 | (<0.1) | 0 | (0) | 45 | (74) | 0 | (0) | 0 | (0) | 0 | (0) | 45 | (74) |
| Common white sucker | 0.0065 | (<0.1) | 124 | (162) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 124 | (162) |
| Other | 0.0010 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 19 | (38) | 19 | (38) |
| Total harvest | 0.0668 | (<0.1) | 323 | (220) | 167 | (183) | 589 | (655) | 9 | (17) | 173 | (157) | 1,261 | (732) |
| | | | Number released | | | | | | | | | | | |
| Coho salmon | 0.0050 | (<0.1) | 94 | (133) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 94 | (133) |
| Chinook salmon | 0.0098 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 185 | (208) | 185 | (208) |
| Rainbow trout | 0.1143 | (<0.1) | 1,294 | (997) | 92 | (146) | 746 | (868) | 6 | (12) | 19 | (38) | 2,157 | (1,331) |
| Brown trout | 0.0036 | (<0.1) | 43 | (62) | 0 | (0) | 0 | (0) | 3 | (6) | 21 | (43) | 67 | (75) |
| Lake trout | 0.0043 | (<0.1) | 81 | (95) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 81 | (95) |
| Smallmouth bass | 0.2164 | (<0.1) | 109 | (132) | 1,322 | (947) | 1,756 | (1,058) | 557 | (509) | 339 | (369) | 4,083 | (1,558) |
| Largemouth bass | 0.0016 | (<0.1) | 0 | (0) | 0 | (0) | 30 | (62) | 0 | (0) | 0 | (0) | 30 | (62) |
| Walleye | 0.0036 | (<0.1) | 0 | (0) | 23 | (47) | 25 | (39) | 20 | (39) | 0 | (0) | 68 | (73) |
| Northern pike | 0.0059 | (<0.1) | 0 | (0) | 0 | (0) | 99 | (198) | 12 | (22) | 0 | (0) | 111 | (200) |
| Common white sucker | 0.0197 | (<0.1) | 299 | (219) | 54 | (100) | 20 | (40) | 0 | (0) | 0 | (0) | 373 | (244) |
| Rock bass | 0.0770 | (<0.1) | 0 | (0) | 1,012 | (933) | 333 | (237) | 97 | (136) | 11 | (21) | 1,452 | (972) |
| Carp | 0.0128 | (<0.1) | 11 | (21) | 199 | (354) | 10 | (20) | 0 | (0) | 21 | (43) | 242 | (358) |
| Bluegill | 0.0026 | (<0.1) | 0 | (0) | 49 | (77) | 0 | (0) | 0 | (0) | 0 | (0) | 49 | (77) |
| Pumpkinseed | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Yellow perch | 0.0570 | (<0.1) | 0 | (0) | 68 | (96) | 946 | (1,596) | 20 | (39) | 43 | (67) | 1,076 | (1,601) |
| Total released | 0.5336 | (<0.1) | 1,931 | (1,044) | 2,819 | (1,393) | 3,966 | (2,127) | 713 | (531) | 639 | (435) | 10,068 | (2,833) |
| Total catch | 0.6005 | (<0.1) | 2,254 | (1,067) | 2,986 | (1,405) | 4,556 | (2,225) | 722 | (531) | 811 | (463) | 11,329 | (2,926) |
| Angler hours | | | 7,049 | (<0.1) | 3,428 | (2,347) | 3,959 | (1,689) | 1,121 | (790) | 3,312 | (1,997) | 18,868 | (<0.1) |
| Angler trips | | | 4,293 | (<0.1) | 1,780 | (1,410) | 1,943 | (889) | 411 | (299) | 1,894 | (1,287) | 10,321 | (<0.1) |

Table E.6.–Estimated harvest, catch per hour, and fishing pressure for 296. Site 296 extended from Brown Bridge Road to the Forks (confluence of the North and South branches of the Boardman River). Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Number harvested | | | | | | | |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brown trout | 0.0063 | (<0.1) | 49 | (66) | 13 | (20) | 0 | (0) | 0 | (0) | 0 | (0) | 62 | (69) |
| Brook trout | 0.0049 | (<0.1) | 4 | (9) | 45 | (63) | 0 | (0) | 0 | (0) | 0 | (0) | 49 | (64) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0013 | (<0.1) | 13 | (26) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 13 | (26) |
| Yellow perch | 0.0176 | (<0.1) | 2 | (5) | 73 | (107) | 99 | (199) | 0 | (0) | 0 | (0) | 175 | (226) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.0347 | (<0.1) | 245 | (455) | 73 | (107) | 27 | (54) | 0 | (0) | 0 | (0) | 345 | (470) |
| Largemouth bass | 0.0039 | (<0.1) | 38 | (57) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 38 | (57) |
| Rock bass | 0.0073 | (<0.1) | 72 | (78) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 72 | (78) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Common white sucker | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Total harvest | 0.0758 | (<0.1) | 424 | (470) | 205 | (166) | 126 | (206) | 0 | (0) | 0 | (0) | 755 | (540) |
| | | | | | | | Number released | | | | | | | |
| Coho salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0.0036 | (<0.1) | 7 | (14) | 12 | (24) | 16 | (33) | 0 | (0) | 0 | (0) | 36 | (43) |
| Brown trout | 0.0972 | (<0.1) | 462 | (598) | 178 | (223) | 317 | (327) | 0 | (0) | 11 | (21) | 968 | (717) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0394 | (<0.1) | 0 | (0) | 77 | (105) | 141 | (133) | 34 | (51) | 140 | (262) | 392 | (316) |
| Largemouth bass | 0.0206 | (<0.1) | 180 | (304) | 26 | (49) | 0 | (0) | 0 | (0) | 0 | (0) | 205 | (307) |
| Walleye | 0.0014 | (<0.1) | 0 | (0) | 0 | (0) | 14 | (27) | 0 | (0) | 0 | (0) | 14 | (27) |
| Northern pike | 0.0077 | (<0.1) | 0 | (0) | 77 | (127) | 0 | (0) | 0 | (0) | 0 | (0) | 77 | (127) |
| Common white sucker | 0.0027 | (<0.1) | 27 | (39) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 27 | (39) |
| Rock bass | 0.1383 | (<0.1) | 497 | (405) | 42 | (61) | 604 | (578) | 191 | (212) | 43 | (63) | 1,377 | (742) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.1596 | (<0.1) | 287 | (352) | 230 | (276) | 641 | (702) | 251 | (245) | 181 | (269) | 1,590 | (908) |
| Pumpkinseed | 0.0014 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 14 | (28) | 14 | (28) |
| Other | 0.0141 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 140 | (280) | 140 | (280) |
| Yellow perch | 0.0404 | (<0.1) | 4 | (9) | 26 | (52) | 238 | (259) | 95 | (76) | 39 | (59) | 402 | (282) |
| Total released | 0.5264 | (<0.1) | 1,465 | (859) | 667 | (403) | 1,971 | (1,010) | 572 | (337) | 567 | (478) | 5,242 | (1,504) |
| Total catch | 0.6023 | (<0.1) | 1,889 | (980) | 872 | (436) | 2,098 | (1,031) | 572 | (337) | 567 | (478) | 5,997 | (1,598) |
| Angler hours | | | 2,058 | (781) | 1,989 | (1,288) | 3,608 | (1,089) | 1,522 | (<0.1) | 780 | (693) | 9,958 | (<0.1) |
| Angler trips | | | 786 | (327) | 686 | (425) | 1,883 | (602) | 515 | (<0.1) | 490 | (449) | 4,359 | (<0.1) |

Table E.7.–Estimated harvest, catch per hour, and fishing pressure for boat. Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number harvested | | | | | | | | | | | |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brown trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brook trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0145 | (<0.1) | 13 | (26) | 0 | (0) | 99 | (198) | 0 | (0) | 0 | (0) | 112 | (200) |
| Yellow perch | 0.0129 | (<0.1) | 0 | (0) | 0 | (0) | 99 | (199) | 0 | (0) | 0 | (0) | 99 | (199) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.0300 | (<0.1) | 231 | (454) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 231 | (454) |
| Largemouth bass | 0.0050 | (<0.1) | 38 | (57) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 38 | (57) |
| Rock bass | 0.0033 | (<0.1) | 26 | (52) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 26 | (52) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Common white sucker | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Total harvest | 0.0657 | (<0.1) | 308 | (461) | 0 | (0) | 198 | (281) | 0 | (0) | 0 | (0) | 506 | (540) |
| | | | Number released | | | | | | | | | | | |
| Coho salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Chinook salmon | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rainbow trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Brown trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Lake trout | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Smallmouth bass | 0.0772 | (<0.1) | 0 | (0) | 77 | (105) | 338 | (452) | 40 | (53) | 140 | (262) | 595 | (536) |
| Largemouth bass | 0.0266 | (<0.1) | 180 | (304) | 26 | (49) | 0 | (0) | 0 | (0) | 0 | (0) | 205 | (307) |
| Walleye | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Northern pike | 0.0228 | (<0.1) | 0 | (0) | 77 | (127) | 99 | (198) | 0 | (0) | 0 | (0) | 176 | (236) |
| Common white sucker | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rock bass | 0.0400 | (<0.1) | 282 | (299) | 26 | (52) | 0 | (0) | 0 | (0) | 0 | (0) | 308 | (304) |
| Carp | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.0544 | (<0.1) | 154 | (303) | 0 | (0) | 120 | (184) | 0 | (0) | 145 | (263) | 419 | (441) |
| Pumpkinseed | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Other | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Yellow perch | 0.1385 | (<0.1) | 0 | (0) | 26 | (52) | 1,032 | (1,608) | 0 | (0) | 10 | (20) | 1,067 | (1,609) |
| Total released | 0.3594 | | 616 | (523) | 230 | (187) | 1,588 | (1,692) | 40 | (53) | 295 | (372) | 2,770 | (1,820) |
| Total catch | 0.4251 | (<0.1) | 924 | (697) | 230 | (187) | 1,786 | (1,716) | 40 | (53) | 295 | (372) | 3,276 | (1,899) |
| Angler hours | | | 2,260 | (<0.1) | 1,357 | (1,287) | 2,720 | (1,277) | 980 | (<0.1) | 390 | (413) | 7,706 | (<0.1) |
| Angler trips | | | 1,447 | (<0.1) | 347 | (335) | 1,349 | (664) | 204 | (<0.1) | 220 | (248) | 3,567 | (<0.1) |

Table E.8.–Estimated harvest, catch per hour, and fishing pressure for shore. Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number harvested | | | | | | | | | | | |
| Chinook salmon | 0.0073 | (0.0073) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 154 | (152) | 154 | (152) |
| Rainbow trout | 0.0069 | (0.0062) | 135 | (127) | 0 | (0) | 10 | (21) | 0 | (0) | 0 | (0) | 145 | (129) |
| Brown trout | 0.0039 | (0.0038) | 68 | (76) | 13 | (20) | 0 | (0) | 0 | (0) | 0 | (0) | 81 | (79) |
| Brook trout | 0.0023 | (0.0031) | 4 | (9) | 45 | (63) | 0 | (0) | 0 | (0) | 0 | (0) | 49 | (64) |
| Lake trout | 0.0022 | (0.0032) | 46 | (66) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 46 | (66) |
| Smallmouth bass | 0.0058 | (0.0080) | 0 | (0) | 122 | (168) | 0 | (0) | 0 | (0) | 0 | (0) | 122 | (168) |
| Yellow perch | 0.0067 | (0.0067) | 2 | (5) | 73 | (107) | 58 | (88) | 9 | (17) | 0 | (0) | 142 | (140) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.0054 | (0.0059) | 14 | (26) | 73 | (107) | 27 | (54) | 0 | (0) | 0 | (0) | 114 | (123) |
| Largemouth bass | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Rock bass | 0.0222 | (0.0297) | 47 | (59) | 0 | (0) | 422 | (618) | 0 | (0) | 0 | (0) | 468 | (621) |
| Carp | 0.0021 | (0.0035) | 0 | (0) | 45 | (74) | 0 | (0) | 0 | (0) | 0 | (0) | 45 | (74) |
| Common white sucker | 0.0058 | (0.0078) | 124 | (162) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 124 | (162) |
| Other | 0.0009 | (0.0018) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 19 | (38) | 19 | (38) |
| Total harvest | 0.0715 | (0.0373) | 440 | (239) | 372 | (247) | 517 | (627) | 9 | (17) | 173 | (157) | 1,510 | (732) |
| | | | Number released | | | | | | | | | | | |
| Coho salmon | 0.0045 | (0.0064) | 94 | (133) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 94 | (133) |
| Chinook salmon | 0.0088 | (0.0100) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 185 | (208) | 185 | (208) |
| Rainbow trout | 0.1038 | (0.0661) | 1,302 | (997) | 104 | (148) | 763 | (869) | 6 | (12) | 19 | (38) | 2,193 | (1,331) |
| Brown trout | 0.0490 | (0.0354) | 505 | (601) | 178 | (223) | 317 | (327) | 3 | (6) | 32 | (48) | 1,036 | (721) |
| Lake trout | 0.0039 | (0.0045) | 81 | (95) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 81 | (95) |
| Smallmouth bass | 0.1837 | (0.0791) | 109 | (132) | 1,322 | (947) | 1,559 | (966) | 551 | (509) | 339 | (369) | 3,880 | (1,497) |
| Largemouth bass | 0.0014 | (0.0029) | 0 | (0) | 0 | (0) | 30 | (62) | 0 | (0) | 0 | (0) | 30 | (62) |
| Walleye | 0.0039 | (0.0037) | 0 | (0) | 23 | (47) | 39 | (48) | 20 | (39) | 0 | (0) | 82 | (78) |
| Northern pike | 0.0006 | (0.0010) | 0 | (0) | 0 | (0) | 0 | (0) | 12 | (22) | 0 | (0) | 12 | (22) |
| Common white sucker | 0.0189 | (0.0122) | 326 | (222) | 54 | (100) | 20 | (40) | 0 | (0) | 0 | (0) | 400 | (247) |
| Rock bass | 0.1194 | (0.0606) | 215 | (272) | 1,028 | (933) | 938 | (625) | 288 | (252) | 53 | (66) | 2,522 | (1,185) |
| Carp | 0.0114 | (0.0171) | 11 | (21) | 199 | (354) | 10 | (20) | 0 | (0) | 21 | (43) | 242 | (358) |
| Bluegill | 0.0577 | (0.0393) | 133 | (179) | 279 | (286) | 521 | (677) | 251 | (245) | 35 | (57) | 1,219 | (798) |
| Pumpkinseed | 0.0007 | (0.0013) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 14 | (28) | 14 | (28) |
| Other | 0.0066 | (0.0133) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 140 | (280) | 140 | (280) |
| Yellow perch | 0.0195 | (0.0114) | 4 | (9) | 68 | (96) | 152 | (166) | 115 | (86) | 72 | (87) | 411 | (228) |
| Total released | 0.5938 | (0.1690) | 2,780 | (1,247) | 3,256 | (1,438) | 4,349 | (1,637) | 1,245 | (626) | 910 | (528) | 12,541 | (2,641) |
| Total catch | 0.6653 | (0.1818) | 3,220 | (1,270) | 3,628 | (1,459) | 4,867 | (1,753) | 1,254 | (626) | 1,083 | (551) | 14,050 | (2,740) |
| Angler hours | | | 6,848 | (1,864) | 4,060 | (2,348) | 4,847 | (1,552) | 1,663 | (808) | 3,702 | (2,074) | 21,119 | (4,043) |
| Angler trips | | | 3,632 | (1,168) | 2,120 | (1,434) | 2,477 | (844) | 722 | (375) | 2,164 | (1,340) | 11,114 | (2,464) |

Table E.9.–Estimated harvest, catch per hour, and fishing pressure for Boardman River. Two standard errors are given in parentheses.

| Species | C/H | | Apr–May | | Jun | | Jul | | Aug | | Sep | | Season | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number harvested | | | | | | | | | | | |
| Chinook salmon | 0.0053 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 154 | (152) | 154 | (152) |
| Rainbow trout | 0.0050 | (<0.1) | 135 | (127) | 0 | (0) | 10 | (21) | 0 | (0) | 0 | (0) | 145 | (129) |
| Brown trout | 0.0028 | (<0.1) | 68 | (76) | 13 | (20) | 0 | (0) | 0 | (0) | 0 | (0) | 81 | (79) |
| Brook trout | 0.0017 | (<0.1) | 4 | (9) | 45 | (63) | 0 | (0) | 0 | (0) | 0 | (0) | 49 | (64) |
| Lake trout | 0.0016 | (<0.1) | 46 | (66) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 46 | (66) |
| Smallmouth bass | 0.0081 | (<0.1) | 13 | (26) | 122 | (168) | 99 | (198) | 0 | (0) | 0 | (0) | 234 | (261) |
| Yellow perch | 0.0084 | (<0.1) | 2 | (5) | 73 | (107) | 157 | (217) | 9 | (17) | 0 | (0) | 241 | (243) |
| Northern pike | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) |
| Bluegill | 0.0120 | (<0.1) | 245 | (455) | 73 | (107) | 27 | (54) | 0 | (0) | 0 | (0) | 345 | (470) |
| Largemouth bass | 0.0013 | (<0.1) | 38 | (57) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 38 | (57) |
| Rock bass | 0.0171 | (<0.1) | 72 | (78) | 0 | (0) | 422 | (618) | 0 | (0) | 0 | (0) | 494 | (623) |
| Carp | 0.0016 | (<0.1) | 0 | (0) | 45 | (74) | 0 | (0) | 0 | (0) | 0 | (0) | 45 | (74) |
| Common white sucker | 0.0043 | (<0.1) | 124 | (162) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 124 | (162) |
| Other | 0.0007 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 19 | (38) | 19 | (38) |
| Total harvest | 0.0699 | (<0.1) | 748 | (519) | 372 | (247) | 716 | (687) | 9 | (17) | 173 | (157) | 2,016 | (910) |
| | | | Number released | | | | | | | | | | | |
| Coho salmon | 0.0033 | (<0.1) | 94 | (133) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 94 | (133) |
| Chinook salmon | 0.0064 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 185 | (208) | 185 | (208) |
| Rainbow trout | 0.0761 | (<0.1) | 1,302 | (997) | 104 | (148) | 763 | (869) | 6 | (12) | 19 | (38) | 2,193 | (1,331) |
| Brown trout | 0.0359 | (<0.1) | 505 | (601) | 178 | (223) | 317 | (327) | 3 | (6) | 32 | (48) | 1,036 | (721) |
| Lake trout | 0.0028 | (<0.1) | 81 | (95) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 81 | (95) |
| Smallmouth bass | 0.1552 | (<0.1) | 109 | (132) | 1,399 | (953) | 1,897 | (1,066) | 591 | (512) | 479 | (453) | 4,475 | (1,590) |
| Largemouth bass | 0.0082 | (<0.1) | 180 | (304) | 26 | (49) | 30 | (62) | 0 | (0) | 0 | (0) | 235 | (314) |
| Walleye | 0.0028 | (<0.1) | 0 | (0) | 23 | (47) | 39 | (48) | 20 | (39) | 0 | (0) | 82 | (78) |
| Northern pike | 0.0065 | (<0.1) | 0 | (0) | 77 | (127) | 99 | (198) | 12 | (22) | 0 | (0) | 188 | (237) |
| Common white sucker | 0.0139 | (<0.1) | 326 | (222) | 54 | (100) | 20 | (40) | 0 | (0) | 0 | (0) | 400 | (247) |
| Rock bass | 0.0982 | (<0.1) | 497 | (405) | 1,054 | (935) | 938 | (625) | 288 | (252) | 53 | (66) | 2,829 | (1,223) |
| Carp | 0.0084 | (<0.1) | 11 | (21) | 199 | (354) | 10 | (20) | 0 | (0) | 21 | (43) | 242 | (358) |
| Bluegill | 0.0568 | (<0.1) | 287 | (352) | 279 | (286) | 641 | (702) | 251 | (245) | 181 | (269) | 1,639 | (911) |
| Pumpkinseed | 0.0005 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 14 | (28) | 14 | (28) |
| Other | 0.0049 | (<0.1) | 0 | (0) | 0 | (0) | 0 | (0) | 0 | (0) | 140 | (280) | 140 | (280) |
| Yellow perch | 0.0513 | (<0.1) | 4 | (9) | 93 | (109) | 1,184 | (1,617) | 115 | (86) | 82 | (89) | 1,478 | (1,625) |
| Total released | 0.5311 | (<0.1) | 3,396 | (1,353) | 3,486 | (1,450) | 5,937 | (2,354) | 1,285 | (628) | 1,206 | (646) | 15,311 | (3,207) |
| Total catch | 0.6011 | (<0.1) | 4,144 | (1,449) | 3,858 | (1,471) | 6,653 | (2,452) | 1,294 | (629) | 1,378 | (665) | 17,327 | (3,334) |
| Angler hours | | | 9,107 | (<0.1) | 5,417 | (2,677) | 7,567 | (2,010) | 2,643 | (<0.1) | 4,092 | (2,114) | 28,826 | (<0.1) |
| Angler trips | | | 5,079 | (<0.1) | 2,467 | (1,473) | 3,826 | (1,074) | 926 | (<0.1) | 2,384 | (1,363) | 14,681 | (<0.1) |

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# Appendix F

An analysis of potential effects of upstream passage of steelhead on the Boardman River

This appendix contains an assessment of the biological effects that steelhead would have on resident trout in the Boardman River if they were allowed to migrate upstream of the four dams in the Boardman River mainstem. These data were compiled from records located at MDNR, Hunt Creek Fisheries Research Station.

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# An Analysis of Potential Effects of Upstream Passage of Steelhead on the Boardman River

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**March 28, 2007**

Some anglers are concerned that upstream migration of potamodromous species such as steelhead and coho salmon might reduce the abundance of resident brown trout and brook trout in the Boardman River. In this analysis I present findings from a long-term evaluation of the effects of steelhead on brown trout in Hunt Creek and data from a large number of other Michigan streams where salmonid populations have been estimated during multiple years. Overall, my analysis suggests that significant adverse effects of steelhead on resident trout populations in the Boardman River are unlikely to occur, and if there are unwanted effects they could be mitigated by limiting the numbers of adult steelhead passed upstream.

The Hunt Creek Fisheries Research Station has been investigating effects of competition between brown trout and juvenile steelhead in Hunt Creek since 1995. A short summary of the results of that study, to date, are pasted below in italics.

*Potential effects of competitive interactions between steelhead and resident brown trout Salmo trutta in Hunt Creek were evaluated by comparing population dynamics of resident trout in a 3.4 km treatment zone (TZ) before (1995-97) and after (1998-06) adult steelhead Oncorhynchus mykiss were stocked into the TZ. Adult steelhead trout were stocked each spring from 1998 through 2003. Resident brown and brook trout Salvelinus fontinalis populations were also estimated in reference zones (RZ's) without steelhead. Brown trout and brook trout abundance, growth, and survival in the TZ were compared between cohorts that interacted with juvenile steelhead and those that did not.*

*Density of cohorts of yearling-and-older brown trout in Hunt Creek that interacted with steelhead as young-of-the-year (YOY) was about half that of allopatric cohorts. This occurred primarily because mean annual survival of (YOY) brown trout declined from 38% to 23% when YOY steelhead were present. Similar temporal changes in survival and density of brown trout were not observed in the Gilchrist Creek RZ.* ***Reduced survival of brown trout YOY probably occurred because mean fall density of YOY trout (brown trout and steelhead combined) was over three times higher than the pre-steelhead abundance of brown trout YOY****. Mean fall abundance of YOY brown trout in the TZ has not changed significantly, relative to the Gilchrist Creek RZ, indicating that steelhead did not impair brown trout reproductive success. Density of yearling brook trout cohorts that interacted with steelhead was lower than for allopatric cohorts. Few significant changes in growth rates of Hunt Creek brown trout or brook trout were detected following steelhead introductions.*

Streams vary in their capacity to support good survival of young-of-year (YOY) trout. In some streams there is no obvious relationship between fall density of YOY and their survival over the ensuing year. In these streams the apparent lack of density-dependent survival may occur because YOY are seldom abundant enough so that their habitat becomes limiting. In other streams with very high quality reproductive habitat YOY densities become high enough so that inverse density-dependent survival is evident. I will illustrate this using graphics derived from several long-term data sets including the Hunt Creek dataset collected when steelhead juveniles were present. Total density of salmonid YOY (steelhead + brown trout) were very high in Hunt Creek during years that adult steelhead spawned there (Figure 1) and average survival of brown trout to age 1 was clearly lower

during those years (1998–2003). Even when no other "competing" salmonid species are present, as is the case in Gilchrist Creek, smaller year classes of brown trout tend to survive better to age 1 although there is considerable variation (Figure 2).

I also searched for inverse density dependent survival relationships for brown trout by pooling population estimates from 17 Michigan Rivers and plotting annual survival of age-0 brown trout against total density of YOY trout in these streams, i.e. brook and brown trout combined (Figure 3). The distribution of data points suggests that high densities may limit survival or trigger emigration from the reach. Conversely, estimates of survival for some year classes, particularly those with densities less than 500 YOY per acre, were over 100% in some years, indicating immigration into the reach. I view the heavy diagonal line as an indicator of the "potential for survival" of brown trout YOY as a function of total brown and brook trout density. This line suggests to me that the "potential for survival" given appropriate habitat conditions is quite good for total brook trout and brown trout YOY densities up to about 1,000/acre. Note that the data plotted in Figure 3 were collected from Michigan rivers where long-term data sets were available, and only a few of these rivers contained significant populations of juvenile rainbow trout. There is considerable variation in brown trout survival rate estimates between years in these rivers that is not accounted for based solely on total YOY density.

Median density of YOY trout (brown trout + rainbow trout + brook trout) was 653 YOY/acre at 41 Michigan Stream Status and Trends Program (SSTP) fixed sites (Figure 4). However, the average total density of YOY was considerably higher (1,008/acre) due to the high numbers of juvenile steelhead present in some streams (Figure 4). Note that coho salmon were not considered in this analysis because they are abundant in only a few Michigan streams.

I examined the relation between total density of trout YOY and survival of brown trout YOY to age 1 at these SSTP sites to evaluate whether inverse density dependent survival was evident (i.e. Is survival of YOY brown trout usually lower when total density of all YOY salmonids is higher?). First I truncated survival rates higher than 100% down to 1. Estimates of survival exceeding 100% are found at sites where significant immigration of yearling trout into the sampling station occurs. This is most common at sampling stations where there are few YOY. In addition, I looked only at river sites where there were at least 50 YOY brown trout per acre since the focus of this analysis is on brown trout. With a few exceptions such as Bear Creek (Manistee County) rainbow trout were rarely abundant in the same streams where brook trout were found in significant numbers.

Survival of YOY brown trout to age 1 was often substantially higher than the median for brown trout streams even at SSTP fixed sites where total abundance of all trout YOY species exceeded 1,000 per acre (Figure 5). The Little Manistee River, Platte River, Sturgeon River and West Branch Sturgeon (Cheboygan River watershed), and Townsend Creek each had total densities of YOY trout over 1,000 per acre, higher-than-median survival rates for YOY brown trout, and also supported significant populations of juvenile steelhead.

Total density of YOY at 29 SSTP fixed sites accounted for virtually none of the variation in survival of brown trout YOY (Figure 6). I hypothesize that this occurred for several reasons. First, the streams with total YOY densities higher than the median were usually those where a majority of the YOY was rainbow trout. In these streams, density of YOY brown trout was usually substantially lower than the 460 YOY brown trout per acre found in Hunt Creek when YOY steelhead were not present. Thus my second hypothesis is that adverse effects of YOY steelhead on survival of YOY brown trout are less likely to occur when densities of brown trout YOY are lower than in Hunt Creek, as they are in most streams, including the Boardman River (Table 1). The apparent reduced potential for survival of YOY brown trout when densities of resident trout species exceeded 1,000 per acre (see Figures 2 and

3) presumably occurred because conspecifics are more likely to compete for the same habitat and are more likely to be about the same size. The average brown trout YOY can out-compete the average steelhead YOY for space on a one-to-one basis because they hatch earlier in the year and hence their average size is larger. However, by late summer there is substantial overlap in the length frequencies of YOY brown trout and steelhead as shown in Figure 7. I hypothesize that in Hunt Creek there were enough YOY steelhead as large as YOY brown trout so that competition intensity was high enough to reduce annual survival of YOY brown trout from 38% to 23%. Because Hunt Creek is relatively cold and unproductive it could not support a high survival rate for all these additional YOY. The SSTP data indicates that similar reductions in YOY brown trout survival did not occur in all Michigan streams (see Figures 5 and 6).

Some of the highest standing crops of resident trout in the state are found in streams receiving runs of potamodromous salmonids (Figure 8). Steelhead runs occur in 7 of the 12 streams with total trout standing stocks higher than the 75$^{th}$ percentile for the 46 streams depicted in Figure 8. Moreover, the average standing stocks of brown trout alone in these seven streams with steelhead runs was 104 pounds per acre. Clearly, steelhead runs are not incompatible with high standing stocks of resident trout species in many Michigan streams.

Upstream passage of steelhead in the Boardman River offers a tremendous opportunity to increase recruitment of steelhead smolts for Lake Michigan. Densities of YOY steelhead in Hunt Creek during years that adult steelhead were stocked averaged nearly 1,200 per acre. Yearling steelhead densities averaged 160 per acre. Most of these yearlings smolted at age 2 the following spring. Note also that the watershed-wide numbers of steelhead exported from Hunt Creek were far higher than the numbers shown above from the 2.1 mile stream reach that we sampled each year. Yearling steelhead were well distributed downstream from the primary area where adults spawned to the mouth of Hunt Creek, a distance of about 5 miles. It was easy to collect 60 yearling steelhead near the mouth of Hunt Creek during years when we collected them for disease testing. In addition, juvenile steelhead were caught in the Thunder Bay River and in Gilchrist Creek as far upstream as M-33. My main point is that although we could not estimate watershed-wide populations of pre-smolt steelhead the numbers had to be huge given their broad distribution and their high density throughout Hunt Creek.

Based on the forgoing analysis I recommend that steelhead be passed upstream into the Boardman River for the following reasons. Abundance of YOY brown trout in the Boardman River is lower than their abundance in Hunt Creek where interactions with juvenile steelhead resulted in lower survival of brown trout YOY. Survival of brown trout YOY at SSTP sites where large numbers of juvenile steelhead were found was often higher than the median for all sites and total YOY density (brown trout + brook trout + rainbow trout) did not explain variation in brown trout survival at SSTP sites (see Figures 4 through 6). Some of the highest standing crops of resident trout in the state were found in streams receiving runs of potamodromous salmonids (Figure 8). Finally, steelhead passage into the Boardman River offers a tremendous opportunity to increase recruitment of steelhead smolts for Lake Michigan.

Table F.1.–Abundance of brown trout and brook trout, total pounds per acre and numbers per acre by age at five population survey sites.

| Year | Species | Site | Total pounds | Age 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| 2005 | BNT | Beitner Road | 31.1 | 274 | 71 | 32 | 3 | 0 |
| 2005 | BKT | Beitner Road | 6.7 | 317 | 13 | 0 | 0 | 0 |
| | | Totals: | 38 | 591 | 84 | 32 | 3 | 0 |
| 2005 | BNT | Brown Bridge Rd. | 30.3 | 188 | 13 | 31 | 13 | 0 |
| 2005 | BKT | Brown Bridge Rd. | 0.2 | 11 | 1 | 0 | 0 | 0 |
| | | Totals: | 30 | 199 | 14 | 31 | 13 | 0 |
| 2004 | BNT | Ranch Rudolf | 43.2 | 20 | 80 | 73 | 23 | 6 |
| 2004 | BKT | Ranch Rudolf | 12.4 | 250 | 87 | 9 | 0 | 0 |
| | | Totals: | 56 | 270 | 166 | 82 | 23 | 6 |
| 2005 | BNT | Scheck's | 63.4 | 331 | 74 | 82 | 18 | 5 |
| 2005 | BKT | Scheck's | 7.1 | 212 | 58 | 1 | 0 | 0 |
| | | Totals: | 71 | 543 | 132 | 83 | 18 | 5 |
| 2005 | BNT | Shumsky's | 20.6 | 56 | 33 | 34 | 6 | 0 |
| 2005 | BKT | Shumsky's | 0.2 | 0 | 2 | 0 | 0 | 0 |
| | | Totals: | 21 | 56 | 34 | 34 | 6 | 0 |

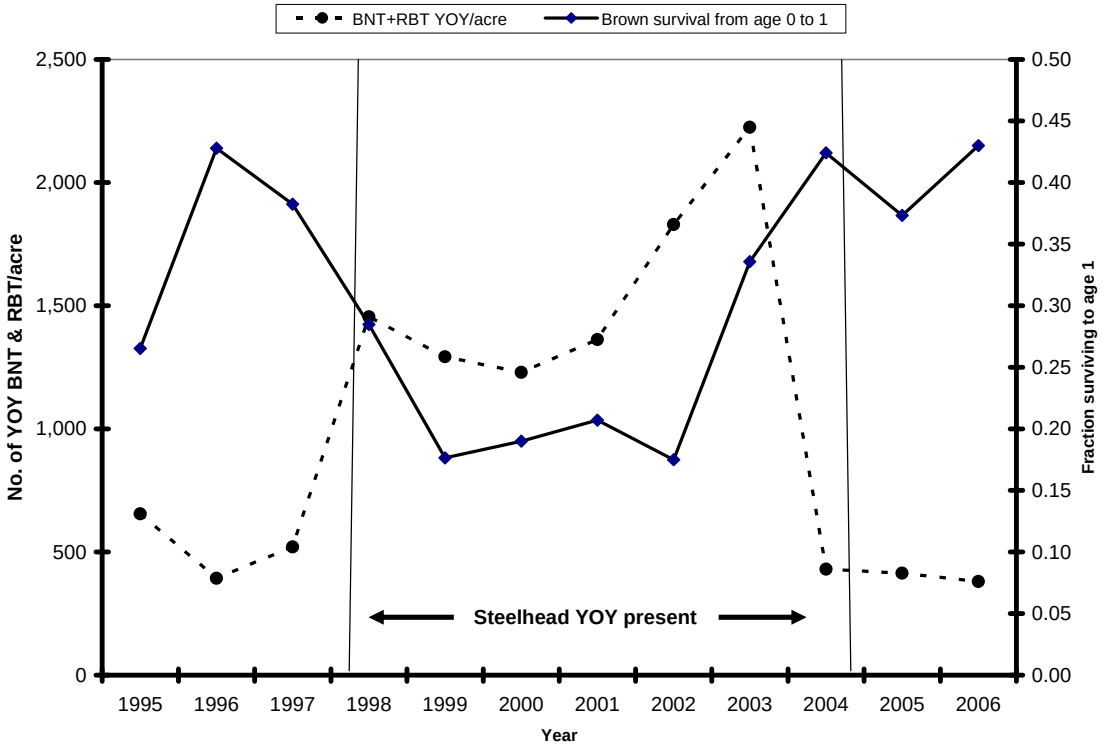


Figure 1.–Density of YOY brown trout and steelhead combined and survival of age-0 brown trout to age 1 in a 3.4 km reach of Hunt Creek. Average annual survival of age-0 brown trout was 37% when no steelhead were present but only 23% for year classes that interacted with YOY steelhead. Mean total YOY density (brown trout + steelhead) was 1,566/acre in years that adult steelhead spawned while mean density of brown trout YOY in years when adult steelhead were not present was only 463/acre.

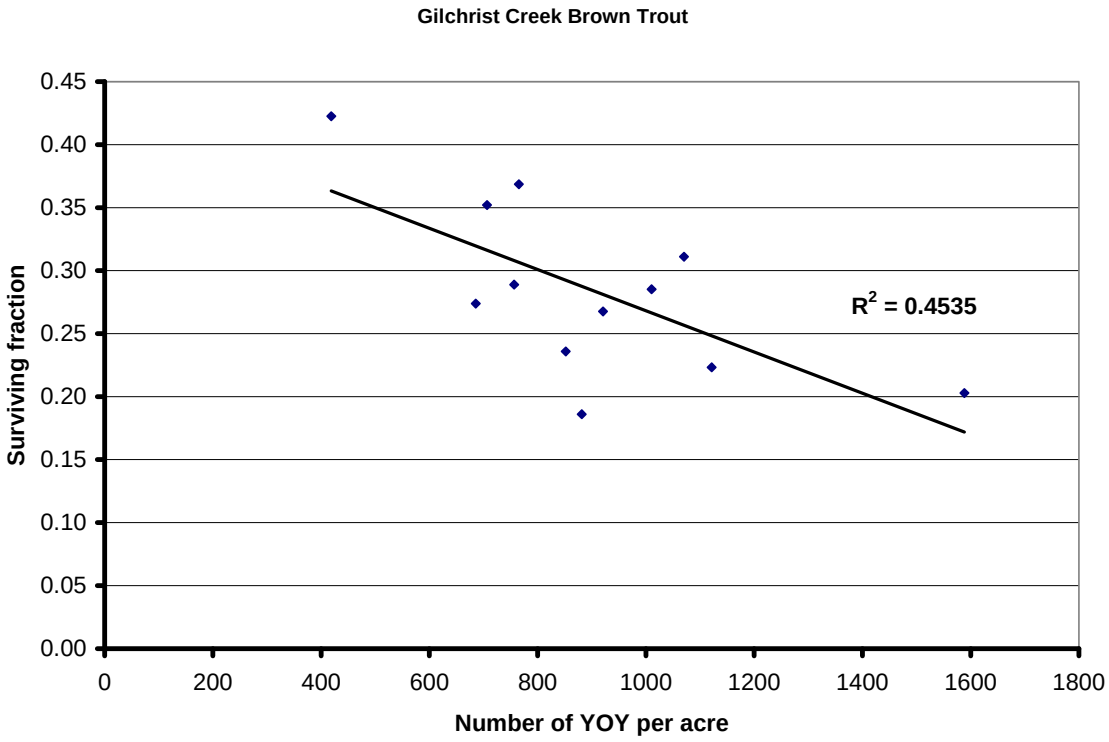


Figure F.2.–Survival of YOY brown trout to age 1 in a 2.3 km reach of Gilchrist Creek as a function of year class density. About 45% of the variation in survival was accounted for by density.

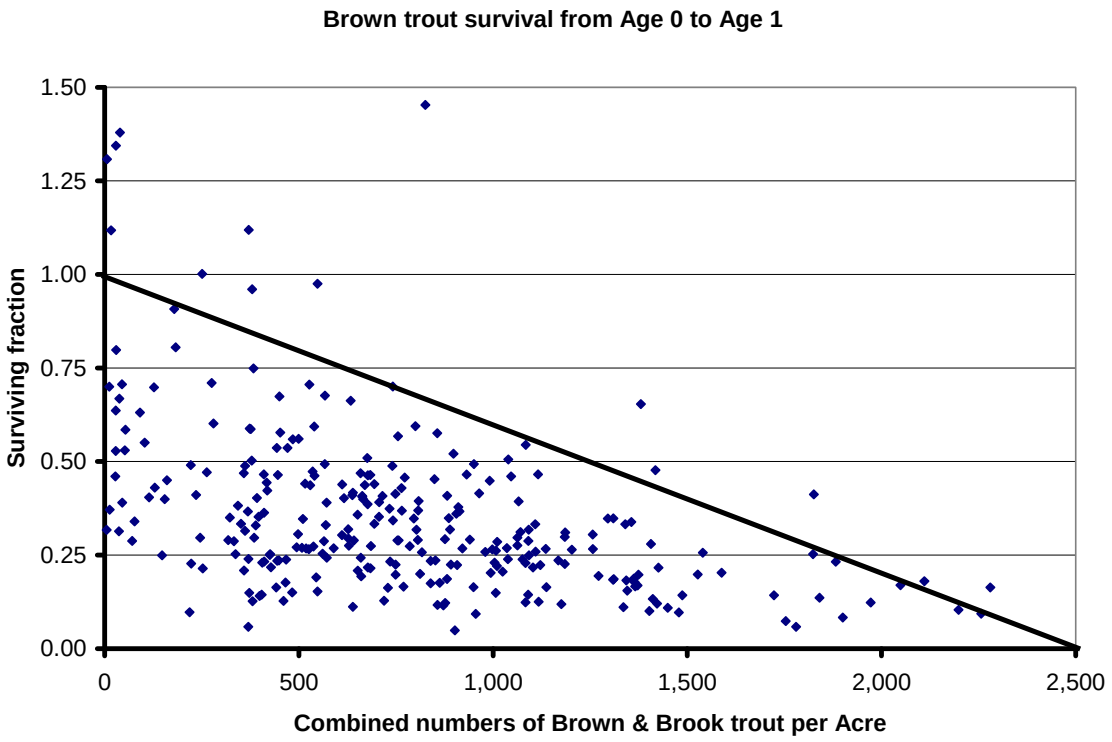


Figure F.3.–Relationship between fall age-0 density of brown trout and brook trout combined and the proportion of brown surviving to age-1 the following fall. A few proportion surviving values were above 1 indicating immigration into study reaches between years. Data are from 17 Michigan rivers: South Branch Paint River; mainstem, North Branch, and South Branch Au Sable River; Hunt Creek; Gilchrist Creek; Manistee River; North Branch and South Branch Boardman River; Baldwin River; Houghton Creek; Hersey River; Platte River; Spring Brook and Silver Creek (Kalamazoo River tributaries); and mainstem and Little South Branch Pere Marquette River.

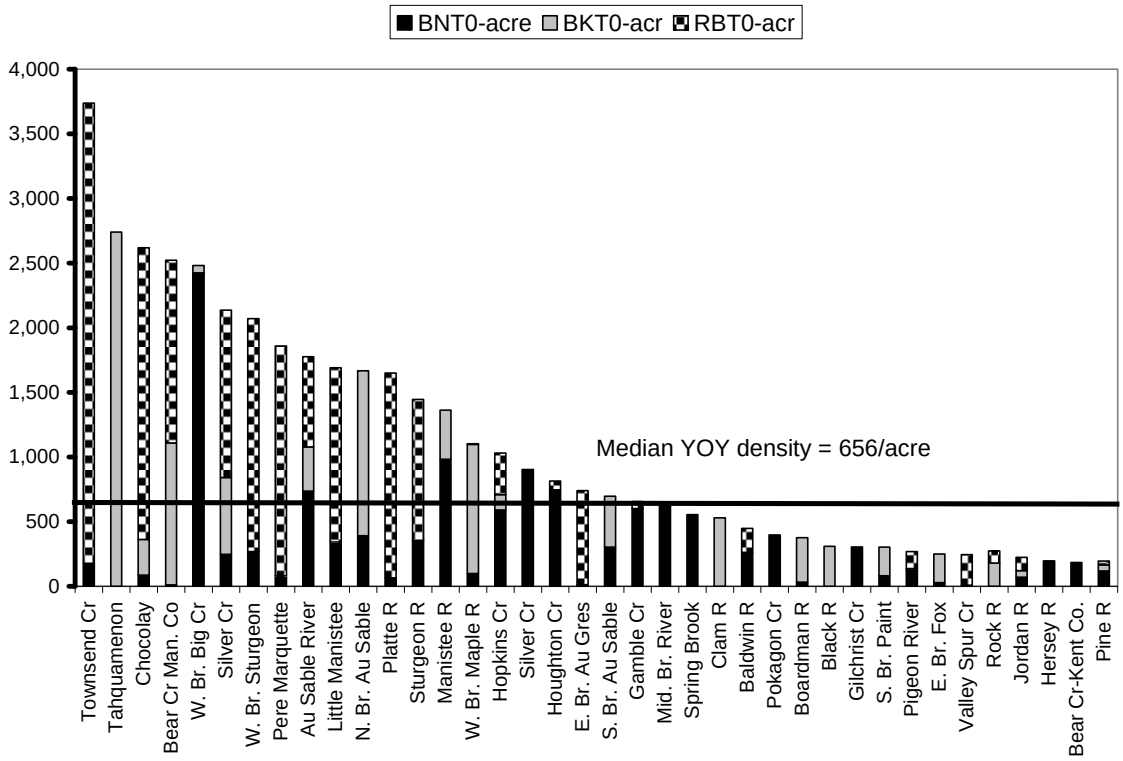


Figure F.4.–Combined density of YOY brown trout, brook trout, and rainbow trout per acre at 41 Michigan SSTP fixed sampling sites. The heavy horizontal line is drawn at the median density level of 656 total YOY per acre. Three streams with very low YOY densities are not shown to improve clarity.

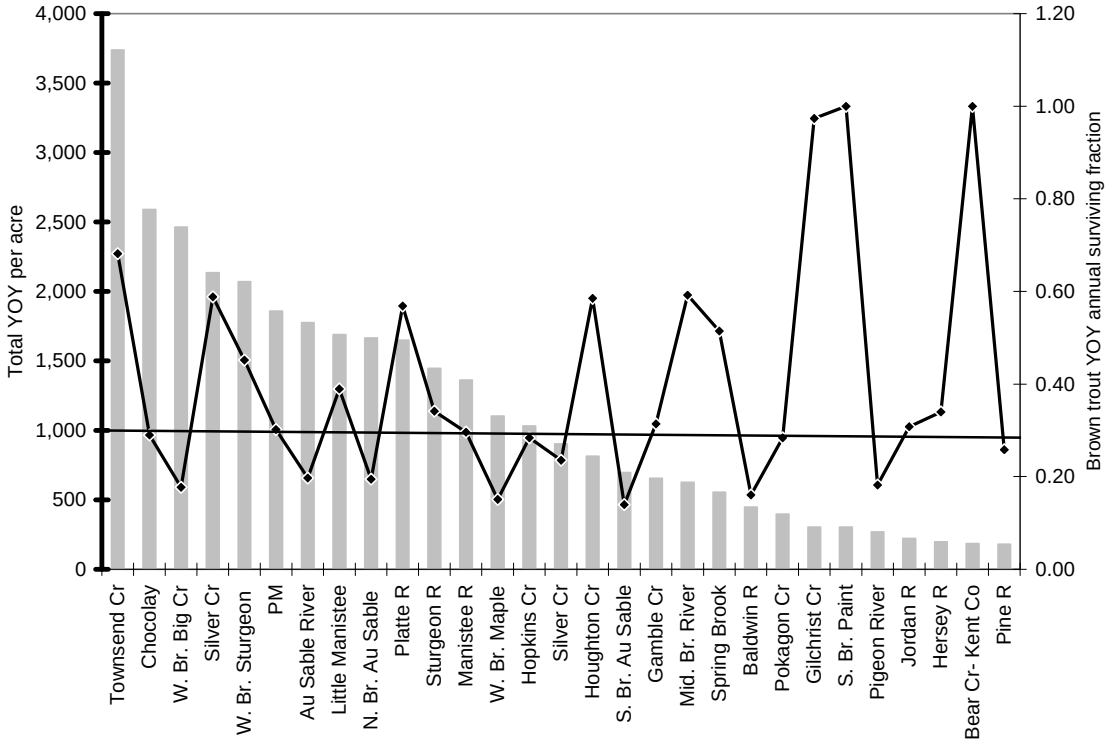


Figure F.5.–Total YOY density in 29 rivers at SSTP fixed sites (left-hand Y axis) and annual survival rate of brown trout YOY (right-hand Y axis). SSTP sites with less than 50 YOY brown trout per acre were not included in the graphic.

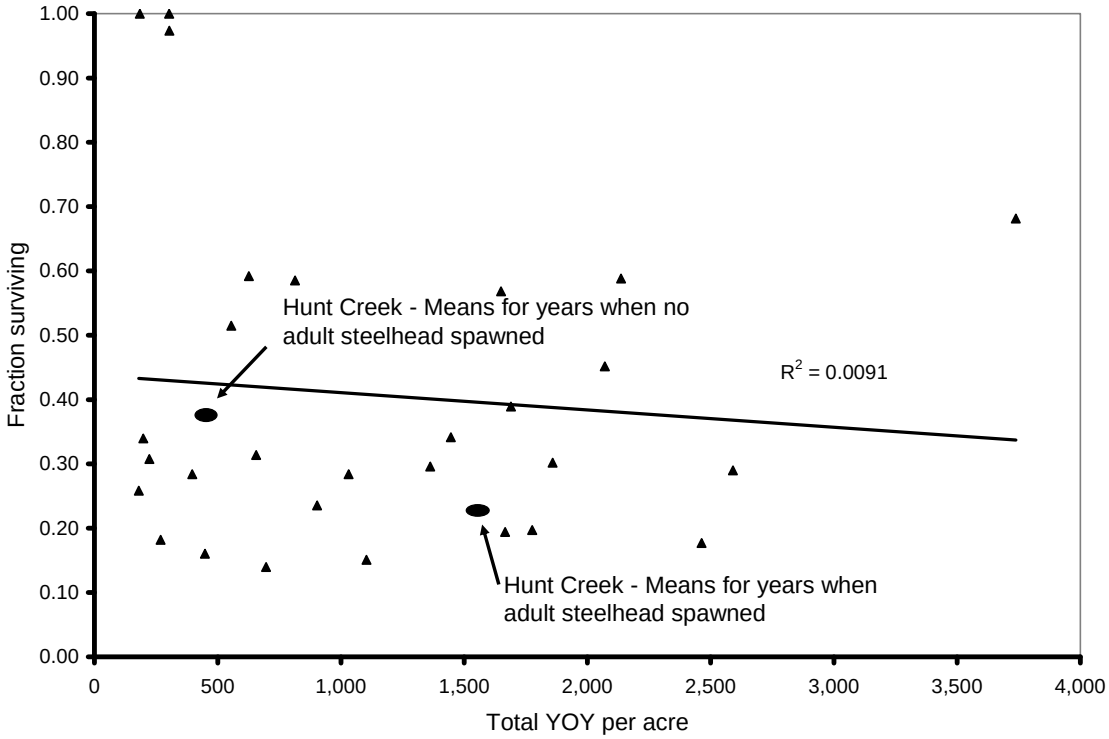


Figure F.6.–Survival of YOY brown trout versus total density of trout YOY (brown trout + brook trout + rainbow trout) at 29 Michigan SSTP fixed sites having at least 50 brown trout YOY per acre. Hunt Creek means were computed from a six-year period when adult steelhead spawned to produce large year classes of YOY rainbow trout and for seven years when no adult steelhead spawned.

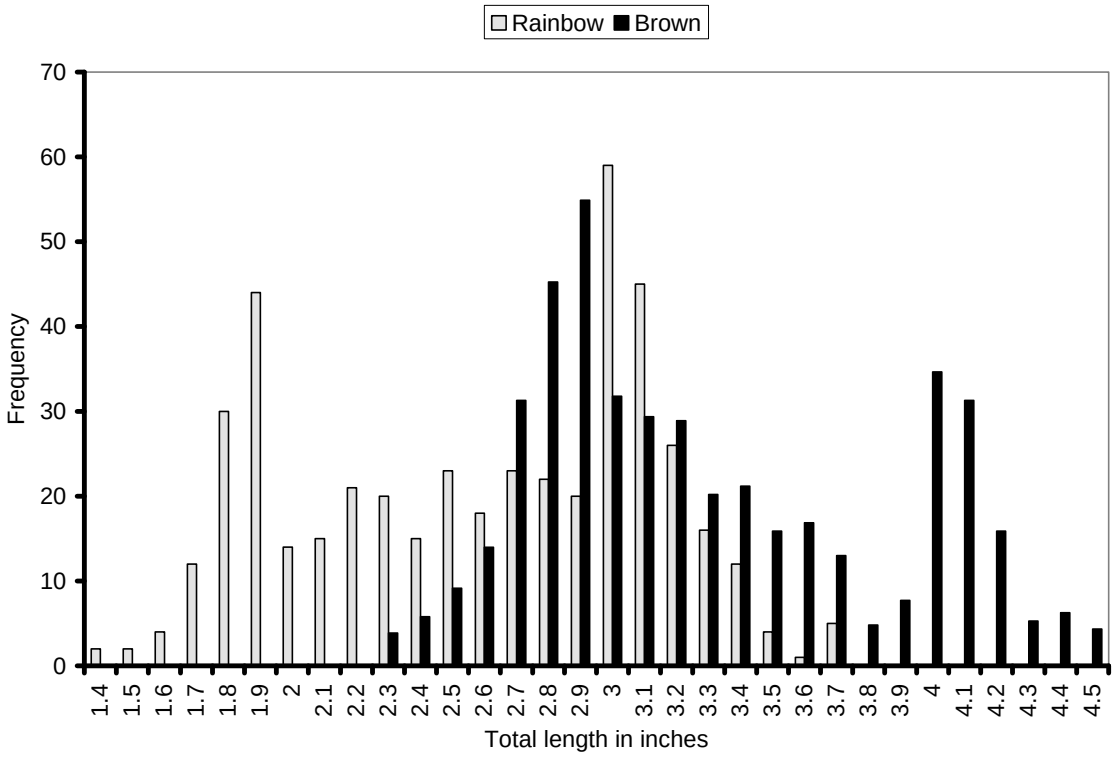


Figure F.7.–Length frequency of YOY rainbow trout (steelhead) and brown trout collected from Hunt Creek during August electrofishing surveys.

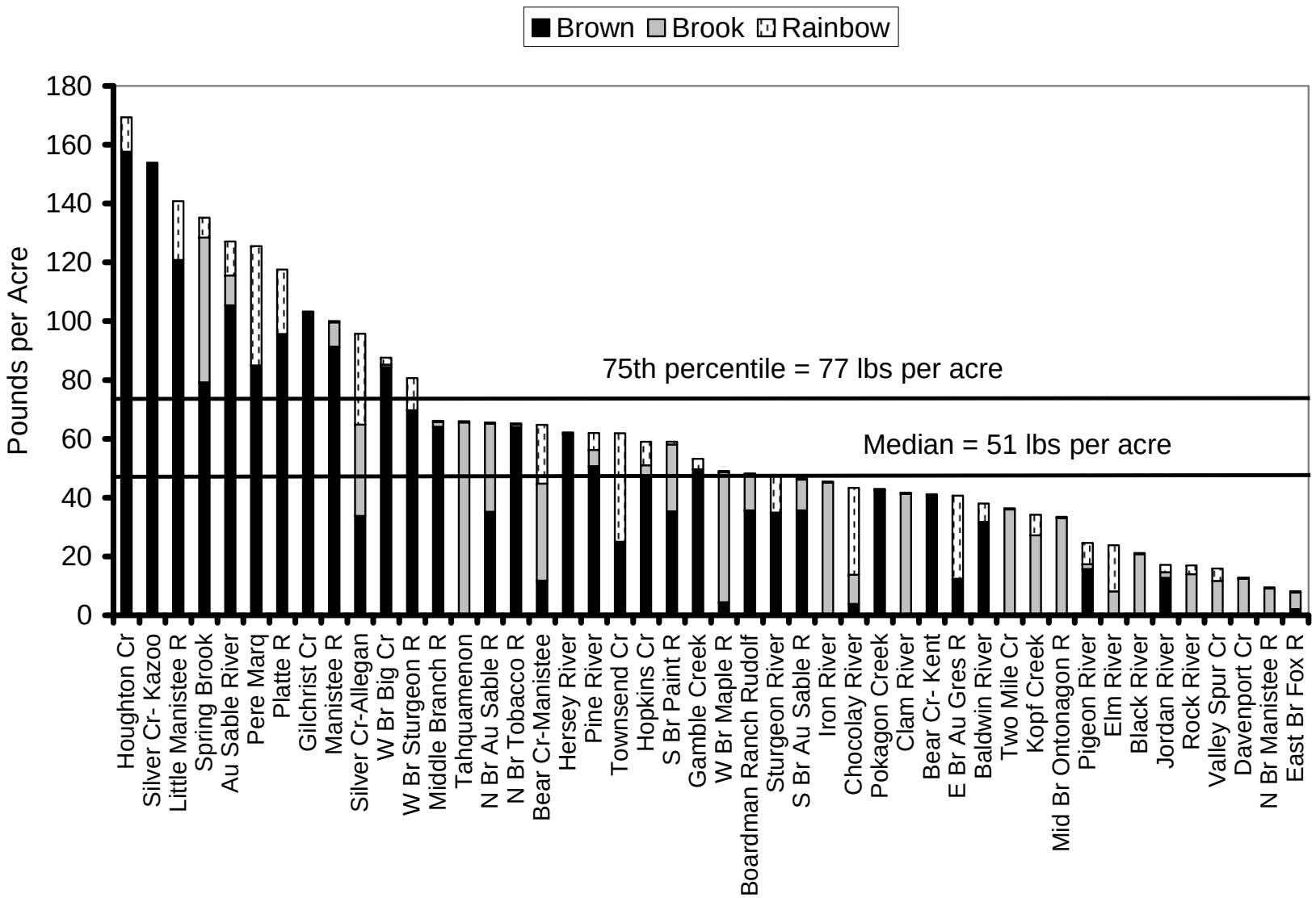


Figure F.8.–Pounds per acre of trout at 46 fixed SSTP sites.

# Appendix G

Miscellaneous creel data from 1928–1965 for the Boardman River and tributaries.

This appendix contains miscellaneous creel data from 1928–1965 for the Boardman River and tributaries. These data were compiled from records located at MDNR, Institute for Fisheries Research. CPE = Catch Per Effort.

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Table G.1.–Miscellaneous creel data from 1928–1965 for lakes within the Boardman River watershed. These data were compiled from records located at MDNR, Institute for Fisheries Research. CPE = Catch Per Effort.

| | | | Catch | | | | | | | | | | | | | | | | | CPE | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water body, county | Year | Angler hours | Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
| Arbutus Lake, Grand Traverse | 1928 | 28 | – | – | – | 1 | – | 4 | – | – | – | – | – | 2 | – | – | – | – | 7 | – | – | – | 0.0 | – | 0.1 | – | – | – | – | – | 0.1 | – | – | – | 0.3 |
| | 1929 | 207 | – | – | – | – | 7 | 48 | 4 | 11 | – | 52 | 1 | 11 | – | 1 | – | – | 135 | – | – | – | – | 0.0 | 0.2 | 0.0 | 0.1 | – | 0.3 | 0.0 | 0.1 | – | 0.0 | – | 0.7 |
| | 1930 | 72 | – | – | – | – | 1 | 53 | 10 | – | – | 20 | – | 15 | – | – | – | – | 99 | – | – | – | – | 0.0 | 0.7 | 0.1 | – | – | 0.3 | – | 0.2 | – | – | – | 1.4 |
| | 1931 | 13 | – | – | – | – | 1 | 13 | – | – | – | 4 | – | – | – | – | – | – | 18 | – | – | – | – | 0.1 | 1.0 | – | – | – | 0.3 | – | – | – | – | – | 1.4 |
| | 1932 | 100 | – | – | – | 36 | 12 | 82 | – | – | – | 8 | – | – | – | – | – | – | 138 | – | – | – | 0.4 | 0.1 | 0.8 | – | – | – | 0.1 | – | – | – | – | – | 1.4 |
| | 1934 | 217 | – | – | – | 11 | 19 | 363 | 56 | 12 | – | 31 | – | – | – | – | – | – | 492 | – | – | – | 0.1 | 0.1 | 1.7 | 0.3 | 0.1 | – | 0.1 | – | – | – | – | – | 2.3 |
| | 1935 | 160 | – | – | – | 4 | 44 | 140 | – | – | – | – | – | 1 | – | – | – | – | 189 | – | – | – | 0.0 | 0.3 | 0.9 | – | – | – | – | – | 0.0 | – | – | – | 1.2 |
| | 1936 | 51 | – | – | – | 1 | 64 | – | – | – | – | – | – | – | 2 | – | – | – | 67 | – | – | – | 0.0 | 1.3 | – | – | – | – | – | – | – | 0.0 | – | – | 1.3 |
| | 1937 | 182 | – | – | – | 31 | 225 | 269 | 1 | – | – | 8 | – | 7 | – | – | – | – | 541 | – | – | – | 0.2 | 1.2 | 1.5 | 0.0 | – | – | 0.0 | – | 0.0 | – | – | – | 3.0 |
| | 1938 | 158 | – | – | – | 13 | 41 | 183 | 4 | – | – | 26 | – | 12 | – | – | – | – | 279 | – | – | – | 0.1 | 0.3 | 1.2 | 0.0 | – | – | 0.2 | – | 0.1 | – | – | – | 1.8 |
| | 1939 | 238 | – | – | – | 39 | 8 | 224 | 1 | – | – | 16 | – | 3 | – | – | – | – | 291 | – | – | – | 0.2 | 0.0 | 0.9 | 0.0 | – | – | 0.1 | – | 0.0 | – | – | – | 1.2 |
| | 1940 | 157 | – | – | – | 6 | 22 | 88 | 15 | 5 | – | 11 | – | – | – | – | – | – | 147 | – | – | – | 0.0 | 0.1 | 0.6 | 0.1 | 0.0 | – | 0.1 | – | – | – | – | – | 0.9 |
| | 1941 | 108 | – | – | – | 1 | 23 | 158 | 9 | – | – | 10 | – | 1 | – | – | – | – | 202 | – | – | – | 0.0 | 0.2 | 1.5 | 0.1 | – | – | 0.1 | – | 0.0 | – | – | – | 1.9 |
| | 1942 | 80 | – | – | – | 2 | 1 | 46 | 4 | – | – | 4 | – | – | – | – | – | – | 57 | – | – | – | 0.0 | 0.0 | 0.6 | 0.1 | – | – | 0.1 | – | – | – | – | – | 0.7 |
| | 1943 | 194 | – | – | – | 10 | 28 | 125 | 40 | 4 | – | 18 | – | – | – | – | – | – | 225 | – | – | – | 0.1 | 0.1 | 0.6 | 0.2 | 0.0 | – | 0.1 | – | – | – | – | – | 1.2 |
| | 1944 | 18 | – | – | – | – | 4 | 32 | 2 | – | – | 3 | – | – | – | – | – | – | 41 | – | – | – | – | 0.2 | 1.8 | 0.1 | – | – | 0.2 | – | – | – | – | – | 2.3 |
| | 1945 | 57 | – | – | – | 3 | 1 | 37 | 15 | – | – | 11 | – | – | – | – | – | – | 67 | – | – | – | 0.1 | 0.0 | 0.7 | 0.3 | – | – | 0.2 | – | – | – | – | – | 1.2 |
| | 1946 | 158 | – | – | – | 23 | 1 | 62 | 8 | 6 | – | 1 | – | – | – | – | – | – | 101 | – | – | – | 0.1 | 0.0 | 0.4 | 0.1 | 0.0 | – | 0.0 | – | – | – | – | – | 0.6 |
| | 1947 | 30 | – | – | – | 5 | – | 13 | – | – | – | 10 | – | – | – | – | – | – | 28 | – | – | – | 0.2 | – | 0.4 | – | – | – | 0.3 | – | – | – | – | – | 0.9 |
| | 1948 | 52 | – | – | – | 3 | 1 | 40 | 1 | – | – | 4 | – | – | – | – | – | – | 49 | – | – | – | 0.1 | 0.0 | 0.8 | 0.0 | – | – | 0.1 | – | – | – | – | – | 0.9 |
| | 1949 | 11 | – | – | – | – | – | 15 | – | – | – | 7 | – | – | – | – | – | – | 22 | – | – | – | – | – | 1.4 | – | – | – | 0.6 | – | – | – | – | – | 2.0 |
| | 1951 | 302 | – | – | – | 9 | 20 | 424 | 4 | – | – | 14 | – | – | – | – | – | – | 471 | – | – | – | 0.0 | 0.1 | 1.4 | 0.0 | – | – | 0.0 | – | – | – | – | – | 1.6 |
| | 1953 | 813 | – | – | – | 4 | 162 | 751 | – | – | – | 68 | – | 3 | – | – | – | – | 988 | – | – | – | 0.0 | 0.2 | 0.9 | – | – | – | 0.1 | – | 0.0 | – | – | – | 1.2 |
| | 1954 | 155 | – | – | – | – | 23 | 287 | 6 | – | – | 14 | – | – | – | – | – | – | 330 | – | – | – | – | 0.1 | 1.9 | 0.0 | – | – | 0.1 | – | – | – | – | – | 2.1 |
| | 1955 | 6 | – | – | – | – | – | 9 | – | – | – | 2 | – | – | – | – | – | – | 11 | – | – | – | – | – | 1.5 | – | – | – | 0.3 | – | – | – | – | – | 1.8 |
| | 1956 | 109 | – | – | – | 1 | 2 | 187 | 2 | – | 1 | 33 | – | – | – | – | – | – | 226 | – | – | – | 0.0 | 0.0 | 1.7 | 0.0 | – | 0.0 | 0.3 | – | – | – | – | – | 2.1 |
| | 1957 | 167 | – | – | – | 3 | 5 | 245 | 4 | – | – | 42 | – | – | – | – | – | – | 299 | – | – | – | 0.0 | 0.0 | 1.5 | 0.0 | – | – | 0.3 | – | – | – | – | – | 1.8 |
| | 1958 | 375 | – | – | – | 6 | 26 | 134 | 10 | 5 | – | 113 | – | 1 | – | – | – | – | 295 | – | – | – | 0.0 | 0.1 | 0.4 | 0.0 | 0.0 | – | 0.3 | – | 0.0 | – | – | – | 0.8 |
| | 1959 | 36 | – | – | – | – | 1 | 15 | 3 | – | – | 2 | – | – | – | – | – | – | 21 | – | – | – | – | 0.0 | 0.4 | 0.1 | – | – | 0.1 | – | – | – | – | – | 0.6 |
| | 1960 | 209 | – | – | – | – | – | 251 | – | – | – | 190 | – | – | – | – | – | – | 441 | – | – | – | – | – | 1.2 | – | – | – | 0.9 | – | – | – | – | – | 2.1 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1961 | 106 | – | – | – | – | – | 178 | – | – | – | 49 | – | – | – | – | – | – | 227 | – | – | – | – | – | 1.7 | – | – | – | 0.5 | – | – | – | – | – | 2.1 |
| | 1962 | 11 | – | – | – | – | 4 | 9 | – | – | – | – | – | – | – | – | – | – | 13 | – | – | – | – | 0.4 | 0.8 | – | – | – | – | – | – | – | – | – | 1.2 |
| | 1964 | 242 | – | – | – | – | 27 | 269 | 49 | 5 | – | 72 | – | – | – | – | – | – | 422 | – | – | – | – | 0.1 | 1.1 | 0.2 | 0.0 | – | 0.3 | – | – | – | – | – | 1.7 |
| Bass Lake, Grand Traverse | 1928 | 38 | – | – | – | – | 14 | 36 | – | – | – | 11 | – | – | – | – | – | – | 61 | – | – | – | – | 0.4 | 0.9 | – | – | – | 0.3 | – | – | – | – | – | 1.6 |
| | 1929 | 46 | – | – | – | – | 17 | 29 | – | 15 | – | 31 | – | – | – | – | – | – | 92 | – | – | – | – | 0.4 | 0.6 | – | 0.3 | – | 0.7 | – | – | – | – | – | 2.0 |
| | 1930 | 46 | – | – | – | 4 | 8 | 20 | 2 | – | – | 14 | – | – | – | – | – | – | 48 | – | – | – | 0.1 | 0.2 | 0.4 | 0.0 | – | – | 0.3 | – | – | – | – | – | 1.0 |
| | 1931 | 2 | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 0.5 | – | – | – | – | 0.5 |
| | 1932 | 4 | – | – | – | – | – | 22 | – | – | – | – | – | – | – | – | – | – | 22 | – | – | – | – | – | 5.5 | – | – | – | – | – | – | – | – | – | 5.5 |
| | 1933 | 6 | – | – | – | 6 | – | 14 | – | 2 | – | 2 | – | – | – | – | – | – | 24 | – | – | – | 1.0 | – | 2.3 | – | 0.3 | – | 0.3 | – | – | – | – | – | 4.0 |
| | 1934 | 23 | – | – | – | – | – | 34 | – | 1 | – | 1 | – | – | – | – | – | – | 36 | – | – | – | – | – | 1.5 | – | 0.0 | – | 0.0 | – | – | – | – | – | 1.6 |
| | 1935 | 25 | – | – | – | 1 | 2 | 5 | 2 | 3 | – | 3 | – | – | – | – | – | – | 16 | – | – | – | 0.0 | 0.1 | 0.2 | 0.1 | 0.1 | – | 0.1 | – | – | – | – | – | 0.7 |
| | 1939 | 46 | – | – | – | 5 | 6 | 109 | – | – | – | 11 | – | – | – | – | – | – | 131 | – | – | – | 0.1 | 0.1 | 2.4 | – | – | – | 0.2 | – | – | – | – | – | 2.8 |
| | 1941 | 9 | – | – | – | 1 | – | – | 2 | – | – | | – | – | 1 | – | – | – | 4 | – | – | – | 0.1 | – | – | 0.2 | – | – | – | – | – | 0.1 | – | – | 0.4 |
| | 1942 | 31 | – | – | – | – | 5 | 15 | – | – | – | 6 | – | – | – | – | – | – | 26 | – | – | – | – | 0.2 | 0.5 | – | – | – | 0.2 | – | – | – | – | – | 0.8 |
| | 1945 | 46 | – | – | – | – | 4 | 64 | – | – | – | 13 | – | – | – | – | – | – | 81 | – | – | – | – | 0.1 | 1.4 | – | – | – | 0.3 | – | – | – | – | – | 1.8 |
| | 1946 | 23 | – | – | – | 2 | – | 114 | – | 5 | – | – | – | – | 2 | – | – | – | 123 | – | – | – | 0.1 | – | 5.0 | – | 0.2 | – | – | – | – | 0.1 | – | – | 5.3 |
| | 1947 | 116 | – | – | – | 4 | – | 32 | – | – | – | 18 | – | – | 10 | – | – | – | 64 | – | – | – | 0.0 | – | 0.3 | – | – | – | 0.2 | – | – | 0.1 | – | – | 0.6 |
| | 1948 | 153 | – | – | – | 1 | 11 | 193 | – | 3 | – | 18 | – | – | 3 | – | – | – | 229 | – | – | – | 0.0 | 0.1 | 1.3 | – | 0.0 | – | 0.1 | – | – | 0.0 | – | – | 1.5 |
| | 1949 | 24 | – | – | – | – | – | 16 | – | – | – | 14 | – | – | 2 | – | – | – | 32 | – | – | – | – | – | 0.7 | – | – | – | 0.6 | – | – | 0.1 | – | – | 1.3 |
| | 1950 | 40 | – | – | – | 4 | – | 10 | – | – | – | 3 | – | – | – | – | – | – | – | – | – | – | 0.1 | – | 0.3 | – | – | – | 0.1 | – | – | – | – | – | – |
| | 1951 | 39 | – | – | – | – | 1 | 18 | – | – | – | | – | – | 5 | – | – | – | 24 | – | – | – | – | 0.0 | 0.5 | – | – | – | – | – | – | 0.1 | – | – | 0.6 |
| | 1952 | 39 | – | – | – | – | – | 79 | 3 | – | – | 18 | – | – | – | – | – | – | – | – | – | – | – | – | 2.0 | 0.1 | – | – | 0.5 | – | – | – | – | – | – |
| | 1953 | 44 | – | – | – | – | – | 85 | – | – | – | 32 | – | – | 1 | – | – | – | 118 | – | – | – | – | – | 1.9 | – | – | – | 0.7 | – | – | 0.0 | – | – | 2.7 |
| | 1954 | 65 | 4 | – | 17 | – | 1 | 136 | 8 | – | – | 27 | – | – | 1 | – | – | – | 194 | 0.1 | – | 0.3 | – | 0.0 | 2.1 | 0.1 | – | – | 0.4 | – | – | 0.0 | – | – | 3.0 |
| | 1955 | 18 | – | – | – | – | – | 16 | – | – | – | 5 | – | – | – | – | – | – | 21 | – | – | – | – | – | 0.9 | – | – | – | 0.3 | – | – | – | – | – | 1.2 |
| | 1956 | 6 | – | – | 4 | – | – | 13 | – | 4 | – | | – | – | – | – | – | – | 21 | – | – | 0.7 | – | – | 2.2 | – | 0.7 | – | – | – | – | – | – | – | 3.5 |
| | 1957 | 127 | – | – | – | – | 15 | 270 | – | – | – | 36 | – | – | – | – | – | – | 321 | – | – | – | – | 0.1 | 2.1 | – | – | – | 0.3 | – | – | – | – | – | 2.5 |
| | 1958 | 221 | – | – | – | – | 11 | 352 | 4 | – | – | 22 | – | – | 2 | – | – | – | 391 | – | – | – | – | 0.0 | 1.6 | 0.0 | – | – | 0.1 | – | – | 0.0 | – | – | 1.8 |
| | 1959 | 15 | – | – | – | – | – | 14 | – | – | – | 3 | – | – | – | – | – | – | 17 | – | – | – | – | – | 0.9 | – | – | – | 0.2 | – | – | – | – | – | 1.1 |
| | 1960 | 4.5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1962 | 38 | – | – | – | – | 1 | 48 | – | – | – | 12 | – | – | – | – | – | – | 61 | – | – | – | – | 0.0 | 1.3 | – | – | – | 0.3 | – | – | – | – | – | 1.6 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boardman Lake, Grand Traverse | 1931 | 31 | – | – | – | – | – | – | – | – | – | – | 8 | – | – | – | – | – | 8 | – | – | – | – | – | – | – | – | – | – | 0.3 | – | – | – | – | 0.3 |
| | 1934 | 42 | – | – | – | – | – | – | – | – | – | – | 19 | – | – | – | – | – | 19 | – | – | – | – | – | – | – | – | – | – | 0.4 | – | – | – | – | 0.4 |
| | 1935 | 122 | 35 | 2 | – | – | – | – | – | – | – | – | 45 | – | – | – | 2 | 1 | 85 | 0.3 | 0.0 | – | – | – | – | – | – | – | – | 0.4 | – | – | – | 0.0 | 0.7 |
| | 1937 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1938 | 117 | – | – | – | 4 | 3 | – | – | 28 | – | 41 | – | 2 | 24 | – | – | – | 102 | – | – | – | 0.0 | 0.0 | – | – | 0.2 | – | 0.4 | – | 0.0 | 0.2 | – | – | 0.9 |
| | 1939 | 96 | – | – | – | – | – | 2 | – | 9 | – | 35 | – | – | 21 | – | 5 | – | 72 | – | – | – | – | – | 0.0 | – | 0.1 | – | 0.4 | – | – | 0.2 | – | 0.1 | 0.8 |
| | 1940 | 164 | – | – | – | – | – | 4 | – | 15 | – | 10 | – | – | 22 | – | – | – | 51 | – | – | – | – | – | 0.0 | – | 0.1 | – | 0.1 | – | – | 0.1 | – | – | 0.3 |
| | 1941 | 127 | – | – | – | – | – | 1 | 24 | 34 | 4 | 107 | – | – | 15 | – | – | – | 185 | – | – | – | – | – | 0.0 | 0.2 | 0.3 | 0.0 | 0.8 | – | – | 0.1 | – | – | 1.5 |
| | 1942 | 121 | – | – | – | – | – | – | – | 21 | – | 43 | – | – | 13 | – | – | – | 77 | – | – | – | – | – | – | – | 0.2 | – | 0.4 | – | – | 0.1 | – | – | 0.6 |
| | 1943 | 76 | – | – | – | – | – | – | – | – | 80 | – | – | – | 10 | – | – | – | 90 | – | – | – | – | – | – | – | – | 1.1 | – | – | – | 0.1 | – | – | 1.2 |
| | 1945 | 187 | – | – | – | – | – | – | 11 | 116 | – | 96 | – | – | 48 | – | – | – | 271 | – | – | – | – | – | – | 0.1 | 0.6 | – | 0.5 | – | – | 0.3 | – | – | 1.5 |
| | 1946 | 89 | – | – | – | – | – | – | – | – | – | – | – | – | 8 | – | – | – | 8 | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 | – | – | 0.1 |
| | 1947 | 47 | – | – | – | – | – | – | – | – | – | 55 | – | – | – | – | – | – | 55 | – | – | – | – | – | – | – | – | – | 1.2 | – | – | – | – | – | 1.2 |
| | 1950 | 141 | – | – | – | – | – | – | – | – | – | 92 | – | – | 12 | – | – | – | 104 | – | – | – | – | – | – | – | – | – | 0.7 | – | – | 0.1 | – | – | 0.7 |
| | 1953 | 46 | – | – | – | – | – | – | – | – | – | 63 | – | – | – | – | – | – | 63 | – | – | – | – | – | – | – | – | – | 1.4 | – | – | – | – | – | 1.4 |
| | 1954 | 261 | – | – | – | – | – | – | – | – | – | 260 | – | – | 37 | – | – | – | 297 | – | – | – | – | – | – | – | – | – | 1.0 | – | – | 0.1 | – | – | 1.1 |
| | 1955 | 203 | – | – | – | – | – | 26 | – | 8 | – | 294 | – | – | 23 | – | – | – | 351 | – | – | – | – | – | 0.1 | – | 0.0 | – | 1.4 | – | – | 0.1 | – | – | 1.7 |
| | 1956 | 260 | – | – | – | – | – | – | – | – | – | 174 | – | – | 23 | – | – | – | 197 | – | – | – | – | – | – | – | – | – | 0.7 | – | – | 0.1 | – | – | 0.8 |
| | 1957 | 164 | – | – | – | 1 | 2 | 61 | – | 63 | – | 115 | – | – | 33 | – | – | – | 275 | – | – | – | 0.0 | 0.0 | 0.4 | – | 0.4 | – | 0.7 | – | – | 0.2 | – | – | 1.7 |
| | 1958 | 224 | – | – | – | – | – | 2 | – | – | – | 269 | – | – | 14 | – | – | – | 285 | – | – | – | – | – | 0.0 | – | – | – | 1.2 | – | – | 0.1 | – | – | 1.3 |
| | 1959 | 136 | – | – | – | – | – | – | – | 2 | – | 110 | – | – | 4 | – | – | – | 116 | – | – | – | – | – | – | – | 0.0 | – | 0.8 | – | – | 0.0 | – | – | 0.9 |
| | 1960 | 222 | – | – | – | – | – | 30 | | 22 | – | 396 | – | – | 5 | – | – | – | 453 | – | – | – | – | – | 0.1 | – | 0.1 | – | 1.8 | – | – | 0.0 | – | – | 2.0 |
| | 1961 | 62 | – | – | – | – | – | – | – | – | – | 87 | – | – | 5 | – | – | – | 92 | – | – | – | – | – | – | – | – | – | 1.4 | – | – | 0.1 | – | – | 1.5 |
| | 1962 | 13 | – | – | – | – | – | – | – | 8 | – | 17 | – | – | 4 | – | – | – | 29 | – | – | – | – | – | – | – | 0.6 | – | 1.3 | – | – | 0.3 | – | – | 2.2 |
| | 1964 | 26 | – | – | – | – | – | – | – | – | – | 21 | – | – | 4 | – | – | – | 25 | – | – | – | – | – | – | – | – | – | 0.8 | – | – | 0.2 | – | – | 1.0 |
| Boardman Pond, Grand Traverse | 1937 | 12 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brewster Lake, Grand Traverse | 1941 | 23 | – | – | – | – | 2 | – | 12 | 6 | – | 9 | – | – | 1 | – | – | – | 30 | – | – | – | – | 0.1 | – | 0.5 | 0.3 | – | 0.4 | – | – | 0.0 | – | – | 1.3 |
| | 1947 | 97 | – | – | – | 2 | 21 | 107 | 71 | – | – | 10 | – | – | 2 | – | – | – | 213 | – | – | – | 0.0 | 0.2 | 1.1 | 0.7 | – | – | 0.1 | – | – | 0.0 | – | – | 2.2 |
| | 1952 | 4 | – | – | – | – | – | 3 | – | – | – | | – | – | – | – | – | – | 3 | – | – | – | – | – | 0.8 | – | – | – | | – | – | – | – | – | 0.8 |
| | 1954 | 10 | – | – | – | – | – | – | – | – | – | 6 | – | – | – | – | – | – | 6 | – | – | – | – | – | – | – | – | – | 0.6 | – | – | – | – | – | 0.6 |
| | 1961 | 17 | – | – | – | – | – | – | – | – | – | 3 | – | – | – | – | – | – | 3 | – | – | – | – | – | – | – | – | – | 0.2 | – | – | – | – | – | 0.2 |
| | 1965 | 14 | – | – | – | – | – | – | – | – | – | | – | – | 2 | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 | – | – | 0.1 |
| Brown Bridge Pond, Grand Traverse | 1928 | 7 | – | – | – | – | – | 2 | – | – | – | 15 | – | – | – | – | 2 | – | 19 | – | – | – | – | – | 0.3 | – | – | – | 2.1 | – | – | – | – | 0.3 | 2.7 |
| | 1929 | 7 | – | – | – | – | – | – | – | – | – | 6 | – | – | – | – | – | – | 6 | – | – | – | – | – | – | – | – | – | 0.9 | – | – | – | – | – | 0.9 |
| | 1935 | 1 | – | – | – | – | – | – | – | – | – | | – | – | – | – | – | – | | – | – | – | – | – | – | – | – | – | | – | – | – | – | – | – |
| | 1937 | 25 | – | – | – | – | – | 48 | – | – | – | 2 | – | – | – | – | – | – | 50 | – | – | – | – | – | 1.9 | – | – | – | 0.1 | – | – | – | – | – | 2.0 |
| | 1938 | 36 | 13 | 23 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | 38 | 0.4 | 0.7 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | 1.1 |
| | 1939 | 2 | – | – | – | – | 5 | – | – | – | – | – | – | – | – | – | – | – | 5 | – | – | – | – | 2.5 | – | – | – | – | – | – | – | – | – | – | 2.5 |
| | 1940 | 4 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| | 1941 | 6 | – | – | – | – | – | – | 1 | 9 | – | 9 | 1 | – | – | – | – | – | 20 | – | – | – | – | – | – | 0.2 | 1.5 | | 1.5 | 0.2 | – | – | – | – | 3.3 |
| | 1944 | 26 | – | – | – | 1 | – | 14 | 11 | – | – | 1 | – | – | – | – | – | – | 27 | – | – | – | 0.0 | – | 0.5 | 0.4 | – | – | 0.0 | – | – | – | – | – | 1.0 |
| | 1945 | 8 | – | – | – | 1 | 3 | 9 | – | – | – | 2 | – | – | – | – | – | – | 15 | – | – | – | 0.1 | 0.4 | 1.1 | – | – | – | 0.3 | – | – | – | – | – | 1.9 |
| | 1946 | 8 | – | – | – | – | – | – | – | – | – | 10 | – | – | – | – | – | – | 10 | – | – | – | – | – | – | – | – | – | 1.3 | – | – | – | – | – | 1.3 |
| | 1948 | 279 | – | – | – | 1 | – | 1 | – | – | – | 96 | – | – | 13 | – | – | – | 111 | – | – | – | 0.0 | – | 0.0 | – | – | – | 0.3 | – | – | 0.0 | – | – | 0.4 |
| | 1953 | 157 | – | 1 | – | 19 | – | 34 | 2 | – | – | 7 | – | – | 16 | – | – | – | 79 | – | 0.0 | – | 0.1 | – | 0.2 | 0.0 | – | – | 0.0 | – | – | 0.1 | – | – | 0.5 |
| | 1954 | 18 | – | – | – | – | 2 | – | – | – | – | 20 | – | – | – | – | – | – | 22 | – | – | – | – | 0.1 | – | – | – | – | 1.1 | – | – | – | – | – | 1.2 |
| | 1955 | 16 | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 | – | – | 0.1 |
| | 1957 | 56 | – | – | – | – | – | – | – | – | – | 152 | – | – | 3 | – | – | – | 155 | – | – | – | – | – | – | – | – | – | 2.7 | – | – | 0.1 | – | – | 2.8 |
| | 1958 | 22 | – | – | – | – | – | – | – | – | – | 101 | – | – | – | – | – | – | 101 | – | – | – | – | – | – | – | – | – | 4.6 | – | – | – | – | – | 4.6 |
| | 1959 | 27 | – | – | – | – | – | – | – | – | – | 55 | – | – | 1 | – | – | – | 56 | – | – | – | – | – | – | – | – | – | 2.0 | – | – | 0.0 | – | – | 2.1 |
| Bumphrey Lake, Grand Traverse | 1941 | 38 | – | – | – | – | 3 | – | 4 | 2 | – | 8 | – | 1 | 1 | – | – | – | 19 | – | – | – | – | 0.1 | – | 0.1 | 0.1 | – | 0.2 | – | 0.0 | 0.0 | – | – | 0.5 |
| | 1951 | 14 | – | – | – | – | 2 | – | – | – | – | – | – | – | 10 | – | – | – | 12 | – | – | – | – | 0.1 | – | – | – | – | – | – | – | 0.7 | – | – | 0.9 |
| | 1955 | 4 | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | 0.5 | – | – | – | – | – | – | – | – | – | – | 0.5 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1958 | 16 | – | – | – | – | 2 | 4 | – | – | – | – | – | – | 2 | – | – | – | 8 | – | – | – | – | 0.1 | 0.3 | – | – | – | – | – | – | 0.1 | – | – | 0.5 |
| | 1965 | 8 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Cedar Lake, Grand Traverse | 1929 | 2 | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 0.5 | – | – | – | 0.5 |
| | 1938 | 16 | – | – | – | – | 2 | 5 | 5 | 4 | – | 19 | – | – | – | – | – | – | 35 | – | – | – | – | 0.1 | 0.3 | 0.3 | 0.3 | – | 1.2 | – | – | – | – | – | 2.2 |
| | 1943 | 7 | – | – | – | – | – | – | – | – | – | 9 | – | – | – | – | – | – | 9 | – | – | – | – | – | – | – | – | – | 1.4 | – | – | – | – | – | 1.4 |
| | 1946 | 15 | – | – | – | – | – | 32 | – | – | – | – | – | – | – | – | – | – | 32 | – | – | – | – | – | 2.1 | – | – | – | – | – | – | – | – | – | 2.1 |
| | 1947 | 16 | – | – | – | – | 1 | 14 | 5 | – | – | – | – | – | – | – | – | – | 20 | – | – | – | – | 0.1 | 0.9 | 0.3 | – | – | – | – | – | – | – | – | 1.3 |
| | 1948 | 55 | – | – | – | – | – | 53 | 2 | 27 | – | 6 | – | – | 2 | – | – | – | 90 | – | – | – | – | – | 1.0 | 0.0 | 0.5 | – | 0.1 | – | – | 0.0 | – | – | 1.6 |
| | 1949 | 11 | – | – | – | 2 | – | 35 | 8 | – | – | 1 | – | – | – | – | – | – | 46 | – | – | – | 0.2 | – | 3.3 | 0.8 | – | – | 0.1 | – | – | | – | – | 4.4 |
| | 1950 | 121 | – | – | – | – | 11 | 124 | 21 | 24 | 3 | 63 | – | – | 7 | – | – | – | 253 | – | – | – | – | 0.1 | 1.0 | 0.2 | 0.2 | 0.0 | 0.5 | – | – | 0.1 | – | – | 2.1 |
| | 1951 | 192 | – | – | – | 1 | 2 | 205 | 19 | 44 | 8 | 31 | – | – | 6 | – | – | – | 316 | – | – | – | 0.0 | 0.0 | 1.1 | 0.1 | 0.2 | 0.0 | 0.2 | – | – | 0.0 | – | – | 1.7 |
| | 1952 | 7 | – | – | – | – | – | 6 | – | – | – | 12 | – | – | | – | – | – | 18 | – | – | – | – | – | 0.9 | – | – | – | 1.7 | – | – | | – | – | 2.6 |
| | 1953 | 43 | – | – | – | – | 1 | 22 | 4 | 5 | – | 16 | – | – | 10 | – | – | – | 58 | – | – | – | – | 0.0 | 0.5 | 0.1 | 0.1 | – | 0.4 | – | – | 0.2 | – | – | 1.3 |
| | 1954 | 47 | – | – | – | – | 5 | 51 | 9 | 4 | – | 10 | – | – | 3 | – | – | – | 82 | – | – | – | – | 0.1 | 1.1 | 0.2 | 0.1 | – | 0.2 | – | – | 0.1 | – | – | 1.7 |
| | 1955 | 22 | – | – | – | – | – | 13 | 8 | 2 | 6 | 5 | – | – | 4 | – | – | – | 38 | – | – | – | – | – | 0.6 | 0.4 | 0.1 | 0.3 | 0.2 | – | – | 0.2 | – | – | 1.7 |
| | 1956 | 89 | – | – | – | – | 18 | 73 | 3 | 42 | 4 | – | – | – | 3 | – | – | – | 143 | – | – | – | – | 0.2 | 0.8 | 0.0 | 0.5 | 0.0 | – | – | – | 0.0 | – | – | 1.6 |
| | 1957 | 16 | – | – | – | – | – | 51 | – | – | – | – | – | – | – | – | – | – | 51 | – | – | – | – | – | 3.2 | – | – | – | – | – | – | – | – | – | 3.2 |
| | 1958 | 36 | – | – | – | – | – | 16 | 3 | 3 | – | 3 | – | 1 | 2 | – | – | – | 28 | – | – | – | – | – | 0.4 | 0.1 | 0.1 | – | 0.1 | – | 0.0 | 0.1 | – | – | 0.8 |
| | 1959 | 6 | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 0.2 | – | – | 0.2 |
| | 1962 | 62 | – | – | – | – | 14 | 14 | – | 33 | – | 26 | – | – | 1 | – | – | – | 88 | – | – | – | – | 0.2 | 0.2 | – | 0.5 | – | 0.4 | – | – | 0.0 | – | – | 1.4 |
| | 1965 | 15 | – | – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Chandler Lake, Grand Traverse | 1940 | 15 | – | – | – | 4 | 4 | – | – | – | – | – | – | – | – | – | – | – | 8 | – | – | – | 0.3 | 0.3 | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1941 | 8 | – | – | – | – | 2 | – | 5 | – | – | 6 | – | – | – | – | – | – | 13 | – | – | – | – | 0.3 | – | 0.6 | – | – | 0.8 | – | – | – | – | – | 1.6 |
| Darby Lake, Grand Traverse | 1929 | 4 | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | 0.5 | – | – | – | – | – | – | – | – | – | – | 0.5 |
| | 1956 | 6 | – | – | – | 4 | – | 8 | – | – | – | – | – | – | – | – | – | – | 12 | – | – | – | 0.7 | – | 1.3 | – | – | – | – | – | – | – | – | – | 2.0 |
| | 1957 | 4 | – | – | – | – | 1 | 22 | – | – | – | – | – | – | – | – | – | – | 23 | – | – | – | – | 0.3 | 5.5 | – | – | – | – | – | – | – | – | – | 5.8 |
| | 1963 | 10 | – | – | – | – | – | 37 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |

Table G.1.–Continued.

| Water body, county | Year | Catch | | | | | | | | | | | | | | | | | | CPE | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Angler hours | Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
| Dollar Lake, Grand Traverse | 1950 | 2 | – | – | – | – | – | 3 | – | – | – | 2 | – | – | – | – | – | – | 5 | – | – | – | – | – | 1.5 | – | – | – | 1.0 | – | – | – | – | – | 2.5 |
| | 1956 | 8 | – | – | – | – | – | – | – | – | – | 34 | – | – | – | – | – | – | 34 | – | – | – | – | – | – | – | – | – | 4.3 | – | – | – | – | – | 4.3 |
| | 1959 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1962 | 19 | – | – | – | – | 1 | 10 | 20 | – | – | – | – | – | – | – | – | – | 31 | – | – | – | – | 0.1 | 0.5 | 1.1 | – | – | – | – | – | – | – | – | 1.6 |
| Downs (Dowen) Lake, Grand Traverse | 1948 | – | – | – | – | – | – | 12 | 3 | – | – | – | – | – | – | – | – | – | 15 | – | – | – | – | – | 1.0 | 0.3 | – | – | – | – | – | – | – | – | 1.3 |
| | 1953 | – | – | – | – | 3 | 11 | 15 | – | – | – | – | – | – | – | – | – | – | 29 | – | – | – | 0.2 | 0.7 | 1.0 | – | – | – | – | – | – | – | – | – | 1.9 |
| | 1954 | – | – | – | – | – | 31 | 44 | 2 | – | – | – | – | – | – | – | – | – | 77 | – | – | – | – | 0.9 | 1.2 | 0.1 | – | – | – | – | – | – | – | – | 2.1 |
| High Lake, Grand Traverse | 1937 | – | – | – | – | 1 | 2 | 2 | – | – | – | 1 | – | – | – | – | – | – | 6 | – | – | – | 0.1 | 0.2 | 0.2 | – | – | – | 0.1 | – | – | – | – | – | 0.6 |
| | 1938 | – | – | – | – | 5 | 5 | – | – | – | – | 16 | – | – | – | – | – | – | 26 | – | – | – | 1.0 | 1.0 | – | – | – | – | 3.2 | – | – | – | – | – | 5.2 |
| | 1940 | – | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | 0.8 | – | – | – | – | – | – | – | – | – | – | 0.8 |
| | 1944 | – | – | – | – | – | 7 | 18 | 6 | – | – | – | – | – | – | – | – | – | 31 | – | – | – | – | 0.4 | 1.0 | 0.3 | – | – | – | – | – | – | – | – | 1.7 |
| | 1953 | – | – | – | – | 7 | – | 109 | – | – | – | 56 | – | – | – | – | – | – | 172 | – | – | – | 0.1 | – | 1.4 | – | – | – | 0.7 | – | – | – | – | – | 2.2 |
| | 1958 | – | – | – | – | – | – | 8 | – | – | – | – | – | – | – | – | – | – | 8 | – | – | – | – | – | 2.0 | – | – | – | – | – | – | – | – | – | 2.0 |
| | 1960 | – | – | – | – | – | 15 | 1 | – | – | – | – | – | – | – | – | – | – | 16 | – | – | – | – | 1.1 | 0.1 | – | – | – | – | – | – | – | – | – | 1.1 |
| Indian Lake, Grand Traverse | 1929 | – | – | – | – | – | 6 | – | – | – | – | 2 | – | – | – | – | – | – | 8 | – | – | – | – | 2.4 | – | – | – | – | 0.8 | – | – | – | – | – | 3.2 |
| | 1930 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1950 | – | – | – | – | – | – | 14 | – | – | – | – | – | – | – | – | – | – | 14 | – | – | – | – | – | 1.6 | – | – | – | – | – | – | – | – | – | 1.6 |
| | 1953 | – | – | – | – | – | – | 18 | – | – | – | – | – | – | – | – | – | – | 18 | – | – | – | – | – | 3.0 | – | – | – | – | – | – | – | – | – | 3.0 |
| | 1954 | – | – | – | – | – | – | 34 | – | – | – | – | – | – | – | – | – | – | 34 | – | – | – | – | – | 8.5 | – | – | – | – | – | – | – | – | – | 8.5 |
| | 1956 | – | – | – | – | – | – | 23 | – | – | – | – | – | – | – | – | – | – | 23 | – | – | – | – | 11.5 | | | – | – | – | – | – | – | – | | – |
| | 1958 | – | – | – | – | – | – | 43 | – | – | – | – | – | – | – | – | – | – | 43 | – | – | – | – | – | 3.3 | – | – | – | – | – | – | – | – | – | 3.3 |
| | 1959 | – | – | – | – | – | – | 8 | – | – | – | – | – | – | – | – | – | – | 8 | – | – | – | – | – | 1.3 | – | – | – | – | – | – | – | – | – | 1.3 |
| Island Lake, Kalkaska | 1936 | – | – | – | – | – | – | – | – | – | – | 12 | 1 | – | – | – | – | – | 13 | – | – | – | – | – | – | – | – | – | 2.7 | 0.2 | – | – | – | – | 2.9 |
| | 1939 | – | – | – | – | – | 2 | 10 | – | – | – | – | 1 | – | – | – | – | – | 13 | – | – | – | – | 0.3 | 1.4 | – | – | – | – | 0.1 | – | – | – | – | 1.9 |
| | 1950 | – | – | – | – | 2 | – | – | – | – | – | 11 | – | – | – | – | – | – | 13 | – | – | – | 0.2 | – | – | – | – | – | 0.8 | | – | – | – | – | 1.0 |
| | 1952 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1954 | – | – | – | | 3 | | 55 | 8 | | | 20 | 5 | | | | | | 91 | | | | 0.1 | | 2.2 | 0.3 | | | 0.8 | 0.2 | – | – | – | – | 3.6 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1956 | 27 | – | – | – | – | 2 | 79 | – | – | – | 26 | – | – | – | – | – | – | 107 | – | – | – | – | 0.1 | 2.9 | – | – | – | 1.0 | – | – | – | – | – | 4.0 |
| | 1957 | 21 | – | – | – | – | 1 | 103 | – | – | – | 12 | 1 | – | – | – | – | – | 117 | – | – | – | – | 0.0 | 4.9 | – | – | – | 0.6 | 0.0 | – | – | – | – | 5.6 |
| | 1958 | 25 | – | – | – | – | – | 92 | – | – | – | 18 | – | – | – | – | – | – | 110 | – | – | – | – | – | 3.7 | – | – | – | 0.7 | – | – | – | – | – | 4.4 |
| Kettle Lake, Kalkaska | 1928 | 112 | – | – | – | – | 1 | 106 | – | – | – | 5 | – | – | – | – | – | – | 112 | – | – | – | – | 0.0 | 0.9 | – | – | – | 0.0 | – | – | – | – | – | 1.0 |
| | 1929 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1930 | 4 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 0.3 | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| | 1936 | 2 | – | – | – | – | 2 | 31 | – | – | – | – | – | – | – | – | – | – | 33 | – | – | – | – | 0.9 | 13.8 | – | – | – | – | – | – | – | – | – | 14.7 |
| | 1939 | 3 | – | – | – | – | – | 6 | 3 | – | – | 1 | – | – | – | – | – | – | 10 | – | – | – | – | – | 2.0 | 1.0 | – | – | 0.3 | – | – | – | – | – | 3.3 |
| | 1942 | 35 | – | – | – | – | – | 23 | – | – | – | – | – | – | – | – | – | – | 23 | – | – | – | – | – | 0.7 | – | – | – | – | – | – | – | – | – | 0.7 |
| | 1945 | 10 | – | – | – | – | – | 20 | – | – | – | – | – | – | – | – | – | – | 20 | – | – | – | – | – | 2.0 | – | – | – | – | – | – | – | – | – | 2.0 |
| | 1949 | 8 | – | – | – | – | – | 22 | – | – | – | – | – | – | – | – | – | – | 22 | – | – | – | – | – | 2.8 | – | – | – | – | – | – | – | – | – | 2.8 |
| | 1954 | 21 | – | – | – | 1 | – | 73 | – | – | – | 4 | – | – | – | – | – | – | 78 | – | – | – | 0.0 | – | 3.5 | – | – | – | 0.2 | – | – | – | – | – | 3.7 |
| | 1956 | 8 | – | – | – | – | – | 20 | – | – | – | – | – | – | – | – | – | – | 20 | – | – | – | – | – | 2.5 | – | – | – | – | – | – | – | – | – | 2.5 |
| | 1957 | 21 | – | – | – | – | – | 71 | – | – | – | 7 | – | – | – | – | – | – | 78 | – | – | – | – | – | 3.4 | – | – | – | 0.3 | – | – | – | – | – | 3.7 |
| | 1958 | 15 | – | – | – | – | – | 52 | – | – | – | – | – | – | – | – | – | – | 52 | – | – | – | – | – | 3.5 | – | – | – | – | – | – | – | – | – | 3.5 |
| | 1959 | 43 | – | – | – | – | – | 13 | 5 | 9 | – | 51 | – | – | – | – | – | – | 78 | – | – | – | – | – | 0.3 | 0.1 | 0.2 | – | 1.2 | – | – | – | – | – | 1.8 |
| | 1960 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1961 | 22 | – | – | – | – | – | 5 | 1 | 1 | – | 41 | – | – | – | – | – | – | 48 | – | – | – | – | – | 0.2 | 0.0 | 0.0 | – | 1.9 | – | – | – | – | – | 2.2 |
| | 1962 | 25 | – | – | – | – | – | – | 1 | – | – | 23 | – | – | – | – | – | – | 24 | – | – | – | – | – | – | 0.0 | – | – | 0.9 | – | – | – | – | – | 1.0 |
| | 1964 | 21 | – | – | – | – | – | 15 | 4 | – | – | 4 | – | – | – | – | – | – | 23 | – | – | – | – | – | 0.7 | 0.2 | – | – | 0.2 | – | – | – | – | – | 1.1 |
| | 1965 | 3 | – | – | – | – | – | – | | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 | – | – | – | – | – | – |
| Keystone (Boardman) Pond, Grand Traverse | 1929 | 16 | – | 8 | 7 | – | – | – | – | – | – | – | – | – | – | 22 | – | – | 37 | – | 0.5 | 0.4 | – | – | – | – | – | – | – | – | – | – | 1.4 | – | 2.3 |
| | 1935 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | – | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.6 | 0.6 |
| | 1938 | 30 | 9 | – | 5 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 0.3 | – | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | 0.5 |
| | 1939 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1940 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1952 | 50 | – | – | 7 | – | – | – | 11 | – | – | – | – | – | – | – | – | – | 18 | – | – | 0.1 | – | – | – | 0.2 | – | – | – | – | – | – | – | – | 0.4 |
| | 1956 | 24 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1957 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake Placid, Kalkaska | 1942 | 6 | – | – | – | 2 | – | 5 | – | – | – | – | – | – | – | – | – | – | 7 | – | – | – | 0.3 | – | 0.8 | – | – | – | – | – | – | – | – | – | 1.2 |
| Little Guernsey Lake, Kalkaska | 1952 | 9 | – | – | – | – | – | 21 | – | – | – | – | – | – | – | – | – | – | 21 | – | – | – | – | – | 2.3 | – | – | – | – | – | – | – | – | – | 2.3 |
| Loon Lake, Kalkaska | 1939 | 8 | – | – | – | – | 5 | 11 | – | – | – | – | – | – | – | – | – | – | 16 | – | – | – | – | 0.6 | 1.4 | – | – | – | – | – | – | – | – | – | 2.0 |
| Mayfield Pond, Grand Traverse | 1941 | 11 | 7 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 7 | 0.7 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.7 |
| Mud Lake, Kalkaska | 1939 | 14 | – | – | – | – | 1 | 40 | – | – | – | – | – | – | 1 | – | – | – | 42 | – | – | – | – | 0.1 | 2.9 | – | – | – | – | – | – | 0.1 | – | – | 3.0 |
| Muncie Lake, Grand Traverse | 1938 | 7 | – | – | – | – | 5 | 15 | – | – | – | – | – | – | – | – | – | – | 20 | – | – | – | – | 0.7 | 2.1 | – | – | – | – | – | – | – | – | – | 2.9 |
| | 1951 | 60 | – | – | – | 2 | 1 | 245 | – | – | – | – | – | – | – | – | – | – | 248 | – | – | – | 0.0 | 0.0 | 4.1 | – | – | – | – | – | – | – | – | – | 4.1 |
| | 1956 | 6 | – | – | – | – | – | – | 8 | – | – | – | – | – | – | – | – | – | 8 | – | – | – | – | – | – | 1.3 | – | – | – | – | – | – | – | – | 1.3 |
| | 1957 | 46 | – | – | – | – | – | 29 | – | – | – | 22 | – | – | – | – | – | – | 51 | – | – | – | – | – | 0.6 | – | – | – | 0.5 | – | – | – | – | – | 1.1 |
| | 1958 | 57 | – | – | – | – | 6 | 117 | – | – | – | – | – | – | – | – | – | – | 123 | – | – | – | – | 0.1 | 2.1 | – | – | – | – | – | – | – | – | – | 2.2 |
| | 1960 | 35 | – | – | – | – | 3 | 75 | – | – | – | – | – | – | – | – | – | – | 78 | – | – | – | – | 0.1 | 2.1 | – | – | – | – | – | – | – | – | – | 2.2 |
| | 1962 | 14 | – | – | – | – | 3 | 24 | – | – | – | – | – | – | – | – | – | – | 27 | – | – | – | – | 0.2 | 1.7 | – | – | – | – | – | – | – | – | – | 1.9 |
| Parsons Lake, Grand Traverse | 1954 | 3 | – | – | – | – | – | 20 | – | – | – | – | – | – | – | – | – | – | 20 | – | – | – | – | – | 6.7 | – | – | – | – | – | – | – | – | – | 6.7 |
| | 1957 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1963 | 6 | – | – | – | – | – | 5 | – | 7 | – | 9 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Perch Lake, Kalkaska | 1930 | 20 | – | – | – | – | 1 | 22 | – | – | – | 12 | – | – | – | – | – | – | 35 | – | – | – | – | 0.1 | 1.1 | – | – | – | 0.6 | – | – | – | – | – | 1.8 |
| | 1939 | 10 | – | – | – | – | 1 | 7 | – | – | – | 3 | – | – | – | – | – | – | 11 | – | – | – | – | 0.1 | 0.7 | – | – | – | 0.3 | – | – | – | – | – | 1.1 |
| | 1942 | 10 | – | – | – | – | 1 | 16 | – | – | – | – | – | – | – | – | – | – | 17 | – | – | – | – | 0.1 | 1.6 | – | – | – | – | – | – | – | – | – | 1.7 |
| | 1945 | 36 | – | – | – | 2 | 6 | 67 | – | – | – | 5 | – | – | – | – | – | – | 80 | – | – | – | 0.1 | 0.2 | 1.9 | – | – | – | 0.1 | – | – | – | – | – | 2.2 |
| | 1948 | 11 | – | – | – | – | 1 | 37 | – | – | – | – | – | – | – | – | – | – | 38 | – | – | – | – | 0.1 | 3.4 | – | – | – | – | – | – | – | – | – | 3.5 |
| | 1950 | 7 | – | – | – | – | 1 | 14 | – | – | – | 3 | – | – | – | – | – | – | 18 | – | – | – | – | 0.1 | 2.0 | – | – | – | 0.4 | – | – | – | – | – | 2.6 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1954 | 13 | – | – | – | 1 | – | 32 | 2 | 4 | – | 7 | – | – | – | – | – | – | 46 | – | – | – | 0.1 | – | 2.5 | 0.2 | 0.3 | – | 0.5 | – | – | – | – | – | 3.5 |
| | 1957 | 99 | – | – | – | 1 | 7 | 230 | 33 | – | – | 39 | – | – | – | – | – | – | 310 | – | – | – | 0.0 | 0.1 | 2.3 | 0.3 | – | – | 0.4 | – | – | – | – | – | 3.1 |
| Rennie Lake, Grand Traverse | 1928 | 2 | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | 1.0 | – | – | – | – | 1.0 |
| | 1929 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1930 | 23 | – | – | – | – | – | – | – | – | – | 1 | – | 5 | – | – | – | – | 6 | – | – | – | – | – | – | – | – | – | 0.0 | – | 0.2 | – | – | – | 0.3 |
| | 1934 | 3 | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | 0.7 | – | – | – | – | – | – | – | – | – | – | 0.7 |
| | 1938 | 12 | – | – | – | – | – | 3 | 1 | – | – | – | – | – | – | – | – | – | 4 | – | – | – | – | – | 0.2 | 0.1 | – | – | – | – | – | – | – | – | 0.3 |
| | 1939 | 3 | – | – | – | – | 1 | 3 | – | – | – | 1 | – | – | – | – | – | – | 5 | – | – | – | – | 0.3 | 1.0 | – | – | – | 0.3 | – | – | – | – | – | 1.7 |
| | 1940 | 8 | – | – | – | 1 | – | 20 | 4 | – | – | 1 | – | – | – | – | – | – | 26 | – | – | – | 0.1 | – | 2.4 | 0.5 | – | – | 0.1 | – | – | – | – | – | 3.2 |
| | 1942 | 33 | – | – | – | – | 2 | 23 | 18 | – | – | 6 | – | – | – | – | – | – | 49 | – | – | – | – | 0.1 | 0.7 | 0.5 | – | – | 0.2 | – | – | – | – | – | 1.5 |
| | 1943 | 19 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1946 | 3 | – | – | – | 3 | – | – | – | – | – | – | – | – | – | – | – | – | 3 | – | – | – | 1.0 | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| | 1953 | 44 | – | – | – | – | 14 | 15 | – | – | – | – | – | – | – | – | – | – | 29 | – | – | – | – | 0.3 | 0.3 | – | – | – | – | – | – | – | – | – | 0.7 |
| | 1957 | 54 | – | – | – | – | 3 | 25 | – | – | – | 22 | – | – | – | – | – | – | 50 | – | – | – | – | 0.1 | 0.5 | – | – | – | 0.4 | – | – | – | – | – | 0.9 |
| | 1958 | 22 | – | – | – | – | | 29 | – | – | – | 12 | – | – | – | – | – | – | 41 | – | – | – | – | – | 1.3 | – | – | – | 0.5 | – | – | – | – | – | 1.9 |
| | 1959 | 115 | – | – | – | – | 9 | 106 | – | – | – | 61 | – | 2 | – | – | – | – | 178 | – | – | – | – | 0.1 | 0.9 | – | – | – | 0.5 | – | 0.0 | – | – | – | 1.5 |
| | 1960 | 32 | – | – | – | – | – | 74 | – | – | – | 37 | – | – | – | – | – | – | 111 | – | – | – | – | – | 2.3 | – | – | – | 1.2 | – | – | – | – | – | 3.5 |
| | 1961 | 22 | – | – | – | – | – | 19 | – | – | – | 36 | – | – | – | – | – | – | 55 | – | – | – | – | – | 0.9 | – | – | – | 1.6 | – | – | – | – | – | 2.5 |
| Rennie Lake East End, Grand Traverse | 1928 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Sand Lake, Grand Traverse | 1928 | 4 | – | – | – | – | – | – | – | – | – | 25 | – | – | – | – | – | – | 25 | – | – | – | – | – | – | – | – | – | 6.3 | – | – | – | – | – | 6.3 |
| | 1947 | 50 | – | – | – | – | 25 | – | – | – | – | – | – | – | – | – | – | – | 25 | – | – | – | – | 0.5 | – | – | – | – | – | – | – | – | – | – | 0.5 |
| | 1961 | 25 | – | – | – | – | 15 | – | – | – | – | – | – | – | – | – | – | – | 15 | – | – | – | – | 0.6 | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1962 | 18 | – | – | – | – | 3 | 29 | – | – | – | – | – | – | – | – | – | – | 32 | – | – | – | – | 0.2 | 1.6 | – | – | – | – | – | – | – | – | – | 1.8 |
| Sand Lake No. 1 (Titus), Grand Traverse | 1950 | 8 | – | – | – | – | – | 9 | – | – | – | 5 | – | – | – | – | – | – | 14 | – | – | – | – | – | 1.1 | – | – | – | 0.6 | – | – | – | – | – | 1.8 |
| | 1952 | 4 | – | – | – | – | 6 | – | – | – | – | – | – | – | – | – | – | – | 6 | – | – | – | – | 1.5 | – | – | – | – | – | – | – | – | – | – | 1.5 |
| | 1953 | 50 | – | – | 20 | – | – | – | – | – | – | – | – | – | – | – | – | – | 20 | – | – | 0.4 | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1955 | 331 | – | – | 250 | – | – | – | – | – | – | – | – | – | – | – | – | – | 250 | – | – | 0.8 | – | – | – | – | – | – | – | – | – | – | – | – | 0.8 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1956 | 62 | – | – | 14 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | – | – | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | 0.2 |
| | 1958 | 37 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1959 | 276 | – | – | 57 | – | – | – | – | – | – | – | – | – | – | – | – | – | 57 | – | – | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | 0.2 |
| | 1960 | 279 | – | – | 138 | – | – | – | – | – | – | – | – | – | – | – | – | – | 138 | – | – | 0.5 | – | – | – | – | – | – | – | – | – | – | – | – | 0.5 |
| | 1961 | 8 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | 0.13 | | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1962 | 52 | – | – | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | 3 | – | – | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 |
| | 1964 | 105 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Sand Lake No. 2, Grand Traverse | 1954 | 3 | – | – | – | – | – | 12 | – | – | – | – | – | – | – | – | – | – | 12 | – | – | – | – | – | 4.0 | – | – | – | – | – | – | – | – | – | 4.0 |
| Sand Lake No. 3, Grand Traverse | 1954 | 37 | – | – | – | – | – | 36 | – | – | – | 44 | – | – | – | – | – | – | 80 | – | – | – | – | – | 1.0 | – | – | – | 1.2 | – | – | – | – | – | 2.2 |
| | 1955 | 14 | – | – | – | – | – | 40 | – | – | – | – | – | – | – | – | – | – | 40 | – | – | – | – | – | 2.9 | – | – | – | – | – | – | – | – | – | 2.9 |
| Sand Lake No. 4, Grand Traverse | 1960 | 12 | – | – | – | – | 6 | 10 | – | – | – | – | – | – | – | – | – | – | 16 | – | – | – | – | 0.5 | 0.8 | – | – | – | – | – | – | – | – | – | 1.3 |
| Sand Lake No. 5, Grand Traverse | 1954 | 102 | – | – | 34 | – | – | 38 | – | – | – | – | – | – | – | – | – | – | 72 | – | – | 0.3 | – | – | 0.4 | – | – | – | – | – | – | – | – | – | 0.7 |
| | 1960 | 14 | – | – | – | – | 15 | 1 | – | – | – | – | – | – | – | – | – | – | 16 | – | – | – | – | 1.1 | 0.1 | – | – | – | – | – | – | – | – | – | 1.1 |
| Selkirk Lake, North, Kalkaska | 1945 | 19 | – | – | – | – | – | 1 | – | – | – | 3 | – | – | – | – | – | – | 4 | – | – | – | – | – | 0.1 | – | – | – | 0.2 | – | – | – | – | – | 0.2 |
| | 1949 | 4 | – | – | – | – | – | – | – | – | – | 6 | – | – | 3 | – | – | – | 9 | – | – | – | – | – | – | – | – | – | 1.5 | – | – | 0.8 | – | – | 2.3 |
| | 1954 | 5 | – | – | – | – | – | 4 | 5 | – | – | 11 | – | – | 1 | – | – | – | 21 | – | – | – | – | – | 0.8 | 1.0 | – | – | 2.2 | – | – | 0.2 | – | – | 4.2 |
| | 1957 | 11 | – | – | 1 | – | 1 | 38 | – | – | – | 7 | – | – | – | – | – | – | 47 | – | – | 0.1 | – | 0.1 | 3.5 | – | – | – | 0.6 | – | – | – | – | – | 4.3 |
| | 1962 | 1 | – | – | 4 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 5 | – | – | 4.0 | – | – | 1.0 | – | – | – | – | – | – | – | – | – | 5.0 |
| Selkirk Lake South, Kalkaska | 1930 | 6.5 | – | – | – | 3 | 1 | – | – | – | – | – | – | – | – | – | – | – | 4 | – | – | – | 0.5 | 0.2 | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1936 | 10 | – | – | – | – | 4 | 8 | – | – | – | 11 | 2 | – | – | – | – | – | 25 | – | – | – | – | 0.4 | 0.8 | – | – | – | 1.1 | 0.2 | – | – | – | – | 2.4 |
| | 1939 | 3 | – | – | – | – | 4 | – | – | – | – | – | – | – | – | – | – | – | 4 | – | – | – | – | 1.3 | – | – | – | – | – | – | – | – | – | – | 1.3 |
| | 1942 | 12 | – | – | – | – | – | – | – | – | – | – | 2 | – | – | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | 0.2 | – | – | – | – | 0.2 |
| | 1945 | 3 | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 0.3 | – | – | – | – | 0.3 |
| | 1948 | 4 | – | – | – | – | – | – | – | – | – | 6 | – | – | – | – | – | – | 6 | – | – | – | – | – | – | – | – | – | 1.5 | – | – | – | – | – | 1.5 |
| | 1949 | 13 | – | – | | | | 7 | 14 | | | 10 | 4 | | | | | | 35 | | | | | | 0.5 | 1.1 | | | 0.8 | 0.3 | | | | | 2.7 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1954 | 14 | – | – | – | – | – | 33 | – | – | – | 8 | 3 | – | – | – | – | – | 44 | – | – | – | – | – | 2.4 | – | – | – | 0.6 | 0.2 | – | – | – | – | 3.1 |
| | 1956 | 21 | – | – | – | – | 1 | 45 | 16 | – | – | 2 | – | – | – | – | – | – | 64 | – | – | – | – | 0.0 | 2.1 | 0.8 | – | – | 0.1 | – | – | – | – | – | 3.0 |
| | 1957 | 84 | – | – | 6 | – | 2 | 72 | – | – | – | 18 | – | – | – | – | – | – | 98 | – | – | 0.1 | – | 0.0 | 0.9 | – | – | – | 0.2 | – | – | – | – | – | 1.2 |
| | 1958 | 43 | – | – | – | – | – | 140 | – | – | – | 12 | – | – | 2 | – | – | – | 154 | – | – | – | – | – | 3.3 | – | – | – | 0.3 | – | – | 0.0 | – | – | 3.6 |
| | 1959 | 27 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | – | 2 | – | – | | – | – | – | – | – | – | – | – | – | – | – | 0.1 | 0.1 |
| | 1961 | 49 | – | – | 16 | – | – | – | – | – | – | – | – | – | – | – | 2 | – | 18 | – | – | 0.3 | – | – | – | – | – | – | – | – | – | – | – | 0.0 | 0.4 |
| | 1964 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Silver Lake, Grand Traverse | 1928 | 109 | – | – | – | 12 | – | 1 | 1 | 7 | – | – | 2 | 8 | – | – | – | – | 31 | – | – | – | 0.1 | – | 0.0 | 0.0 | 0.1 | – | – | 0.0 | 0.1 | – | – | – | 0.3 |
| | 1929 | 62 | – | – | – | 1 | 3 | 6 | 1 | 1 | – | 2 | 4 | – | – | – | – | – | 18 | – | – | – | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | – | 0.0 | 0.1 | – | – | – | – | 0.3 |
| | 1930 | 93 | – | – | – | 4 | 2 | – | 1 | 2 | – | 4 | 10 | 5 | – | – | 1 | – | 29 | – | – | – | 0.0 | 0.0 | – | 0.0 | 0.0 | – | 0.0 | 0.1 | 0.1 | – | – | 0.0 | 0.3 |
| | 1931 | 40 | – | – | – | 1 | 4 | 38 | – | – | – | – | – | 2 | – | – | – | – | 45 | – | – | – | 0.0 | 0.1 | 1.0 | – | – | – | – | – | 0.1 | – | – | – | 1.1 |
| | 1934 | 53 | – | – | – | 7 | 4 | 138 | 19 | 2 | – | 11 | 1 | 5 | – | – | – | – | 187 | – | – | – | 0.1 | 0.1 | 2.6 | 0.4 | 0.0 | – | 0.2 | 0.0 | 0.1 | – | – | – | 3.6 |
| | 1935 | 21 | – | – | – | – | – | 4 | – | – | – | 5 | 8 | | – | – | – | – | 17 | – | – | – | – | – | 0.2 | – | – | – | 0.2 | 0.4 | – | – | – | – | 0.8 |
| | 1937 | 12 | – | – | – | – | – | 6 | – | – | – | – | – | 6 | – | – | – | – | 12 | – | – | – | – | – | 0.5 | – | – | – | – | – | 0.5 | – | – | – | 1.0 |
| | 1938 | 54 | – | – | – | 10 | 4 | 30 | – | – | – | 13 | 1 | 5 | – | – | 1 | – | 64 | – | – | – | 0.2 | 0.1 | 0.6 | – | – | – | 0.2 | 0.0 | 0.1 | – | – | 0.0 | 1.2 |
| | 1939 | 12 | – | – | – | 4 | – | – | – | – | – | 1 | 2 | | – | – | – | – | 7 | – | – | – | 0.3 | – | – | – | – | – | 0.1 | 0.2 | – | – | – | – | 0.6 |
| | 1940 | 19 | – | – | – | – | – | – | 18 | 10 | – | 7 | 1 | | – | – | – | – | 36 | – | – | – | – | – | – | 0.9 | 0.5 | – | 0.4 | 0.1 | – | – | – | – | 1.9 |
| | 1941 | 98 | – | – | – | – | 4 | 88 | 6 | 4 | – | 29 | – | 1 | – | – | – | – | 132 | – | – | – | – | 0.0 | 0.9 | 0.1 | 0.0 | – | 0.3 | – | 0.0 | – | – | – | 1.3 |
| | 1942 | 108 | – | – | – | 6 | 1 | 93 | 7 | 4 | – | 20 | – | – | – | – | – | – | 131 | – | – | – | 0.1 | 0.0 | 0.9 | 0.1 | 0.0 | – | 0.2 | – | – | – | – | – | 1.2 |
| | 1943 | 224 | – | – | – | 5 | 3 | 86 | 16 | 4 | – | 8 | – | 12 | 18 | – | – | – | 152 | – | – | – | 0.0 | 0.0 | 0.4 | 0.1 | 0.0 | – | 0.0 | – | 0.1 | 0.1 | – | – | 0.7 |
| | 1945 | 74 | – | – | – | 3 | – | 47 | 22 | – | – | 12 | – | 3 | 3 | – | – | – | 90 | – | – | – | 0.0 | – | 0.6 | 0.3 | – | – | 0.2 | – | 0.0 | 0.0 | – | – | 1.2 |
| | 1946 | 18 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1947 | 114 | – | – | – | 6 | 1 | – | – | – | – | – | – | 30 | 8 | – | – | – | 45 | – | – | – | 0.1 | 0.0 | – | – | – | – | – | – | 0.3 | 0.1 | – | – | 0.4 |
| | 1950 | 252 | – | – | – | 1 | – | 216 | – | – | – | – | – | – | 20 | – | – | – | 237 | – | – | – | 0.0 | – | 0.9 | – | – | – | – | – | – | 0.1 | – | – | 0.9 |
| | 1951 | 24 | – | – | – | – | – | 20 | – | – | – | – | – | – | – | – | – | – | 20 | – | – | – | – | – | 0.8 | – | – | – | – | – | – | – | – | – | 0.8 |
| | 1952 | 86 | – | – | – | – | – | 161 | 14 | – | – | 4 | – | – | 4 | – | – | – | 183 | – | – | – | – | – | 1.9 | 0.2 | – | – | 0.0 | – | | 0.0 | – | – | 2.1 |
| | 1953 | 380 | – | – | – | – | 14 | 284 | 6 | – | – | 13 | – | 2 | 8 | – | – | – | 327 | – | – | – | – | 0.0 | 0.7 | 0.0 | – | – | 0.0 | – | 0.0 | 0.0 | – | – | 0.9 |
| | 1954 | 307 | – | – | – | – | – | 463 | 14 | – | – | 3 | – | 1 | 10 | – | – | – | 491 | – | – | – | – | – | 1.5 | 0.0 | – | – | 0.0 | – | 0.0 | 0.0 | – | – | 1.6 |
| | 1955 | 86 | – | – | – | – | 1 | 113 | 13 | – | – | 2 | – | – | 2 | – | – | – | 131 | – | – | – | – | 0.0 | 1.3 | 0.2 | – | – | 0.0 | – | | 0.0 | – | – | 1.5 |
| | 1956 | 161 | – | – | – | – | 5 | 78 | – | – | – | – | – | 8 | 8 | – | – | – | 99 | – | – | – | – | 0.0 | 0.5 | – | – | – | – | – | 0.0 | 0.0 | – | – | 0.6 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1957 | 1,182 | – | – | 58 | 2 | 13 | 367 | 25 | 26 | – | 48 | – | 10 | 12 | – | 1 | – | 562 | – | – | 0.1 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | – | 0.0 | – | 0.0 | 0.0 | – | 0.0 | 0.5 |
| | 1958 | 240 | – | – | – | 5 | – | 158 | 12 | – | – | 5 | – | – | 10 | – | – | – | 190 | – | – | – | 0.0 | – | 0.7 | 0.1 | – | – | 0.0 | – | – | 0.0 | – | – | 0.8 |
| | 1959 | 116 | – | – | 3 | 3 | 13 | 37 | 7 | 31 | – | 15 | – | – | – | – | – | – | 109 | – | – | 0.0 | 0.0 | 0.1 | 0.3 | 0.1 | 0.3 | – | 0.1 | – | – | – | – | – | 0.9 |
| | 1962 | 73 | – | – | 1 | – | 5 | 32 | – | 8 | – | 2 | – | – | – | – | – | – | 48 | – | – | 0.0 | – | 0.1 | 0.4 | – | 0.1 | – | 0.0 | – | – | – | – | – | 0.7 |
| | 1964 | 125 | – | – | – | – | 5 | 38 | 17 | 4 | – | 29 | – | 3 | 2 | – | – | – | 98 | – | – | – | – | 0.0 | 0.3 | 0.1 | 0.0 | – | 0.2 | – | 0.0 | 0.0 | – | – | 0.8 |
| Smith's Lake, Kalkaska | 1950 | 23 | 82 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 82 | 3.6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3.6 |
| | 1952 | 6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1955 | 8 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 |
| | 1956 | 6 | – | – | – | – | 4 | – | – | 15 | – | – | – | – | – | – | – | – | 19 | – | – | – | – | 0.7 | – | – | 2.5 | – | – | – | – | – | – | – | 3.2 |
| | 1957 | 7 | – | – | – | – | 2 | 9 | – | – | – | 10 | – | – | – | – | – | – | 21 | – | – | – | – | 0.3 | 1.3 | – | – | – | 1.4 | – | – | – | – | – | 3.0 |
| | 1958 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1960 | 4 | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | 0.3 | – | – | – | – | – | 0.3 |
| | 1961 | 21 | – | – | 9 | – | – | – | – | 23 | – | – | – | – | – | – | – | – | 32 | – | – | 0.4 | – | – | – | – | 1.1 | – | – | – | – | – | – | – | 1.5 |
| | 1962 | 6 | – | – | – | – | – | – | – | – | – | 19 | – | – | – | – | – | – | 19 | – | – | – | – | – | – | – | – | – | 3.2 | – | – | – | – | – | 3.2 |
| | 1964 | 4 | – | – | – | – | – | – | – | – | – | 17 | – | – | – | – | – | – | 17 | – | – | – | – | – | – | – | – | – | 4.3 | – | – | – | – | – | 4.3 |
| | 1965 | 25 | – | 2 | – | – | – | – | – | – | – | 45 | – | – | – | – | – | – | – | – | 0.1 | – | – | – | – | – | – | – | 1.8 | – | – | – | – | – | 1.9 |
| Spider Lake, Grand Traverse | 1928 | 166 | – | – | – | 7 | 118 | 118 | – | – | – | 10 | – | – | – | – | – | – | 253 | – | – | – | 0.0 | 0.7 | 0.7 | – | – | – | 0.1 | – | – | – | – | – | 1.5 |
| | 1929 | 23 | – | – | – | – | 12 | – | – | – | – | – | – | – | – | – | – | – | 12 | – | – | – | – | 0.5 | – | – | – | – | – | – | – | – | – | – | 0.5 |
| | 1930 | 5.5 | – | – | – | 3 | – | – | – | – | – | – | 1 | – | – | – | – | – | 4 | – | – | – | 0.5 | – | – | – | – | – | – | 0.2 | – | – | – | – | 0.7 |
| | 1934 | 119 | – | – | – | 11 | 36 | 265 | 8 | 46 | – | 21 | – | – | – | – | – | – | 387 | – | – | – | 0.1 | 0.3 | 2.2 | 0.1 | 0.4 | – | 0.2 | – | – | – | – | – | 3.3 |
| | 1935 | 126 | – | – | – | – | 16 | 369 | 1 | 6 | – | | – | – | – | – | – | – | 392 | – | – | – | – | 0.1 | 2.9 | 0.0 | 0.0 | – | | – | – | – | – | – | 3.1 |
| | 1937 | 64 | – | – | – | 3 | 10 | 213 | 4 | 3 | – | 3 | – | – | – | – | – | – | 236 | – | – | – | 0.0 | 0.2 | 3.3 | 0.1 | 0.0 | – | 0.0 | – | – | – | – | – | 3.7 |
| | 1938 | 53 | – | – | – | 1 | 14 | 59 | 7 | 5 | – | 2 | – | – | – | – | – | – | 88 | – | – | – | 0.0 | 0.3 | 1.1 | 0.1 | 0.1 | – | 0.0 | – | – | – | – | – | 1.7 |
| | 1939 | 158 | – | – | – | 2 | 12 | 274 | 1 | 6 | – | 3 | – | – | – | – | – | – | 298 | – | – | – | 0.0 | 0.1 | 1.7 | 0.0 | 0.0 | – | 0.0 | – | – | – | – | – | 1.9 |
| | 1940 | 61 | – | – | – | 1 | 14 | 53 | 6 | 51 | – | 2 | – | – | – | – | – | – | 127 | – | – | – | 0.0 | 0.2 | 0.9 | 0.1 | 0.8 | – | 0.0 | – | – | – | – | – | 2.1 |
| | 1941 | 221 | – | – | – | 4 | 26 | 268 | 40 | 22 | – | 36 | – | – | – | – | – | – | 396 | – | – | – | 0.0 | 0.1 | 1.2 | 0.2 | 0.1 | – | 0.2 | – | – | – | – | – | 1.8 |
| | 1942 | 55 | – | – | – | – | 4 | 35 | 5 | | – | 12 | – | – | – | – | – | – | 56 | – | – | – | – | 0.1 | 0.6 | 0.1 | – | – | 0.2 | – | – | – | – | – | 1.0 |
| | 1943 | 39 | – | – | – | 1 | 3 | 23 | 5 | 2 | – | – | – | – | – | – | – | – | 34 | – | – | – | 0.0 | 0.1 | 0.6 | 0.1 | 0.1 | – | – | – | – | – | – | – | 0.9 |
| | 1945 | 83 | – | – | – | 1 | 13 | 108 | 51 | – | – | 44 | – | – | – | – | – | – | 217 | – | – | – | 0.0 | 0.2 | 1.3 | 0.6 | – | – | 0.5 | – | – | – | – | – | 2.6 |
| | 1946 | 92 | – | – | – | – | – | 108 | – | – | – | – | – | – | – | – | – | – | 108 | – | – | – | – | – | 1.2 | – | – | – | – | – | – | – | – | – | 1.2 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1947 | 25 | – | – | – | – | 2 | 3 | – | 9 | – | – | – | – | – | – | – | – | 14 | – | – | – | – | 0.1 | 0.1 | | 0.4 | | | – | – | – | – | – | 0.6 |
| | 1948 | 115 | – | – | – | 1 | 5 | 76 | 1 | 3 | 4 | 14 | – | – | – | – | – | – | 104 | – | – | – | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.1 | – | – | – | – | – | 0.9 |
| | 1950 | 61 | – | – | – | – | 14 | 111 | – | – | – | – | – | – | – | – | – | – | 125 | – | – | – | – | 0.2 | 1.8 | – | – | – | – | – | – | – | – | – | 2.0 |
| | 1951 | 45 | – | – | – | – | 1 | 39 | – | 20 | – | – | – | – | – | – | – | – | 60 | – | – | – | – | 0.0 | 0.9 | – | 0.4 | – | – | – | – | – | – | – | 1.3 |
| | 1953 | 688 | – | – | – | 20 | 104 | 695 | 81 | 20 | 7 | 93 | – | – | – | – | – | – | 1,020 | – | – | – | – | – | 1.0 | 0.1 | 0.0 | 0.0 | 0.1 | | – | – | – | – | 1.5 |
| | 1954 | 83 | – | – | – | 2 | 5 | 48 | 4 | 4 | 1 | 6 | – | – | – | – | – | – | 70 | – | – | – | 0.0 | 0.1 | 0.6 | 0.0 | 0.0 | 0.0 | 0.1 | – | – | – | – | – | 0.8 |
| | 1956 | 17 | – | – | – | – | – | 96 | – | – | – | 5 | – | – | – | – | – | – | 101 | – | – | – | – | – | 5.8 | – | – | – | 0.3 | – | – | – | – | – | 6.1 |
| | 1957 | 136 | – | – | – | 1 | 3 | 186 | 9 | 8 | 7 | 44 | – | – | 1 | – | – | – | 259 | – | – | – | 0.0 | 0.0 | 1.4 | 0.1 | 0.1 | 0.1 | 0.3 | – | – | 0.0 | – | – | 1.9 |
| | 1958 | 204 | – | – | – | – | 9 | 118 | 26 | – | 4 | 26 | – | – | – | – | – | – | 183 | – | – | – | – | 0.0 | 0.6 | 0.1 | – | 0.0 | 0.1 | – | – | – | – | – | 0.9 |
| | 1959 | 179 | – | – | – | – | 4 | 136 | 9 | 4 | – | 25 | – | – | – | – | – | – | 178 | – | – | – | – | 0.0 | 0.8 | 0.1 | 0.0 | – | 0.1 | – | – | – | – | – | 1.0 |
| | 1960 | 232 | – | – | – | – | – | 214 | – | – | 14 | 295 | – | – | – | – | – | – | 523 | – | – | – | – | – | 0.9 | – | – | 0.1 | 1.3 | – | – | – | – | – | 2.3 |
| | 1961 | 37 | – | – | – | – | – | 12 | – | – | – | 62 | – | – | – | – | – | – | 74 | – | – | – | – | – | 0.3 | – | – | – | 1.7 | – | – | – | – | – | 2.0 |
| | 1962 | 7 | – | – | – | – | 1 | 19 | – | – | – | – | – | – | – | – | – | – | 20 | – | – | – | – | 0.1 | 2.7 | – | – | – | – | – | – | – | – | – | 2.9 |
| | 1964 | 80 | – | – | – | – | 13 | 44 | 9 | 4 | – | 17 | – | – | – | – | – | – | 87 | – | – | – | – | 0.2 | 0.6 | 0.1 | 0.1 | – | 0.2 | – | – | – | – | – | 1.1 |
| Spring Lake, Grand Traverse | 1938 | 3 | – | – | – | – | 2 | 6 | – | – | – | 5 | – | – | – | – | – | – | 13 | – | – | – | – | 0.7 | 2.0 | – | – | – | 1.7 | – | – | – | – | – | 4.3 |
| | 1954 | 41 | – | – | – | – | – | 76 | 43 | – | – | – | – | – | – | – | – | – | 119 | – | – | – | – | – | 1.9 | 1.0 | – | – | – | – | – | – | – | – | 2.9 |
| | 1955 | 6 | – | – | – | – | – | 2 | 5 | – | – | – | – | – | – | – | – | – | 7 | – | – | – | – | – | 0.3 | 0.8 | – | – | – | – | – | – | – | – | 1.2 |
| Twin Lakes, Grand Traverse | 1957 | 6 | – | – | – | – | – | 2 | 3 | – | – | – | – | – | – | – | – | – | 5 | – | – | – | – | – | 0.3 | 0.5 | – | – | – | – | – | – | – | – | 0.8 |
| | 1960 | 14 | – | – | – | – | – | 7 | – | – | – | 3 | – | – | 3 | – | – | – | 13 | – | – | – | – | – | 0.5 | – | – | – | 0.2 | – | – | 0.2 | – | – | 0.9 |
| | 1961 | 9 | – | – | – | – | 2 | – | – | – | – | – | – | – | 1 | – | – | – | 3 | – | – | – | – | 0.2 | – | – | – | – | – | – | – | 0.1 | – | – | 0.3 |
| Twin Lakes East, Grand Traverse | 1942 | 4 | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | 0.3 | – | – | – | – | – | – | – | – | – | – | 0.3 |
| | 1959 | 4 | – | – | – | – | – | 8 | – | – | – | – | – | – | – | – | – | – | 8 | – | – | – | – | – | 2.0 | – | – | – | – | – | – | – | – | – | 2.0 |
| Twin Lakes North, Grand Traverse | 1955 | 6 | – | – | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | 3 | – | – | 0.5 | – | – | – | – | – | – | – | – | – | – | – | – | 0.5 |
| | 1957 | 21 | – | – | 12 | – | – | – | – | – | – | – | – | – | – | – | – | – | 12 | – | – | 0.6 | – | – | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1958 | 71 | 2 | 1 | 38 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | 42 | 0.0 | 0.0 | 0.5 | – | 0.0 | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1961 | 12 | – | – | – | – | – | – | – | – | – | 14 | – | – | – | – | – | – | 14 | – | – | – | – | – | – | – | – | – | 1.2 | – | – | – | – | – | 1.2 |

Table G.1.–Continued.

| Water body, county | Year | Angler hours | Catch: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total # fish | CPE: Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Black crappie | Yellow perch | Walleye | Northern pike | Bullhead | Sucker | Lake trout | Total CPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Twin Lakes South, Grand Traverse | 1937 | 7 | – | – | – | – | – | 4 | – | – | – | – | – | – | – | – | – | – | 4 | – | – | – | – | – | 0.6 | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1938 | 2 | – | – | – | – | – | 11 | – | – | – | 2 | – | – | – | – | – | – | 13 | – | – | – | – | – | 5.5 | – | – | – | 1.0 | – | – | – | – | – | 6.5 |
| | 1947 | 2 | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 0.5 | – | – | – | – | 0.5 |
| | 1950 | 30 | – | – | – | – | – | – | – | – | – | – | – | – | 9 | – | – | – | 9 | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 | – | – | 0.3 |
| | 1952 | 12 | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 | – | – | 0.1 |
| | 1953 | 26 | – | – | – | – | – | – | – | – | – | – | – | – | 7 | – | – | – | 7 | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 | – | – | 0.3 |
| | 1954 | 10 | – | – | – | – | – | 8 | – | – | – | – | – | – | 1 | – | – | – | 9 | – | – | – | – | – | 0.8 | – | – | – | – | – | – | 0.1 | – | – | 0.9 |
| | 1955 | 11 | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 | – | – | 0.1 |
| | 1956 | 31 | – | – | – | – | – | – | – | – | – | – | 1 | – | 1 | – | – | – | 2 | – | – | – | – | – | – | – | – | – | – | 0.0 | – | 0.0 | – | – | 0.1 |
| | 1957 | 53 | – | – | – | – | – | – | – | – | – | 3 | – | – | 6 | – | – | – | 9 | – | – | – | – | – | – | – | – | – | 0.1 | – | – | 0.1 | – | – | 0.2 |
| | 1958 | 38 | – | – | – | – | – | 30 | – | – | – | | – | – | 3 | – | – | – | 33 | – | – | – | – | – | 0.8 | – | – | – | – | – | – | 0.1 | – | – | 0.9 |
| | 1960 | 52 | – | – | 52 | – | – | – | – | – | – | – | – | – | – | – | – | – | 52 | – | – | 1.0 | – | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| | 1962 | 53 | – | – | 17 | – | – | – | – | – | – | – | – | – | – | – | – | – | 17 | – | – | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| Vandervoight Lake, Grand Traverse | 1929 | 2 | – | – | – | – | 9 | – | – | – | – | 1 | – | – | – | – | – | – | 10 | – | – | – | – | 4.5 | – | – | – | – | 0.5 | – | – | – | – | – | 5.0 |
| | 1957 | 6 | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 0.2 | – | – | – | – | – | – | – | – | – | 0.2 |

Table G.2.–Miscellaneous creel data from 1928–1965 for the Boardman River and tributaries. These data were compiled from records located at MDNR, Institute for Fisheries Research. CPE = Catch Per Effort.

| | | | Catch | | | | | | | | | | | | | | | | | | | CPE | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water body | Year | Angler hours | Brook trout | Brown trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Carp | Sucker | Lake trout | Tiger trout | Total # fish | Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Yellow perch | Grass pickerel | Walleye | Northern pike | Carp | Bullhead | Sucker | Lake Trout | Tiger trout | Total CPE |
| Bancroft Cr. | 1953 | 10 | 1 | 3 | 2 | — | – | – | – | – | – | – | – | – | – | – | – | – | – | 6 | 0.1 | 0.3 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1955 | 19 | 9 | 10– | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 19 | 0.5 | 0.5 | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| Boardman R. | 1928 | 229.5 | 32 | 76 | 20– | – | – | – | | 10 | 2 | 8– | – | | 4 | – | 1– | – | | 153 | 0.1 | 0.3 | 0.1 | – | – | – | – | 0.0 | 0.0 | 0.0 | – | – | 0.0 | 0.0 | 0.0 | – | – | 0.7 |
| | 1929 | 110.5 | 30 | 20 | 24– | – | – | – | – | | 11– | – | – | – | – | – | – | – | | 85 | 0.3 | 0.2 | 0.2 | – | – | – | – | – | 0.1 | – | – | – | – | – | – | – | – | 0.8 |
| | 1930 | 72 | 69 | 14 | 24 | 7– | – | – | – | – | | 8– | – | | 46– | – | – | – | | 168 | 1.0 | 0.2 | 0.3 | 0.1 | – | – | – | – | – | 0.1 | – | – | 0.6 | 0.6 | – | – | – | 3.0 |
| | 1931 | 76 | 27 | 6 | 10– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 43 | 0.4 | 0.1 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1932 | 46 | 81 | 24 | 1– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 106 | 1.8 | 0.5 | 0.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2.3 |
| | 1933 | 8 | 17 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | | 18 | 2.1 | 0.1 | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2.3 |
| | 1934 | 122.6 | 5 | 36 | 6– | | 3 | 7 | – | | 5– | – | – | | 16 | – | 57– | – | | 135 | 0.0 | 0.3 | 0.0 | – | 0.0 | 0.1 | – | – | 0.0 | – | – | – | 0.1 | 0.1 | 0.5 | – | – | 1.2 |
| | 1935 | 33.25 | 2 | 33 | 2– | – | – | – | – | | – | – | – | – | – | – | – | – | | 37 | 0.1 | 1.0 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.1 |
| | 1937 | 264.8 | 8 | 206 | 29– | – | – | – | | 90 | 21– | – | – | – | – | – | – | – | | 354 | 0.0 | 0.8 | 0.1 | – | – | – | – | 0.3 | 0.1 | – | – | – | – | – | – | – | – | 1.3 |
| | 1938 | 77.25 | – | 33 | 28 | 1 | 2– | – | – | | 1– | – | – | – | – | – | – | – | | 65 | – | 0.4 | 0.4 | 0.0 | 0.0 | – | – | – | 0.0 | – | – | – | – | – | – | – | – | 0.8 |
| | 1939 | 179.5 | 6 | 88 | 2– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 96 | 0.0 | 0.5 | 0.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.5 |
| | 1940 | 154.5 | 1 | 57 | 22 | 87– | – | – | | 22 | 9– | – | | 1– | – | – | – | – | | 199 | 0.0 | 0.4 | 0.1 | 0.6 | – | – | – | 0.1 | 0.1 | – | – | 0.0 | – | – | – | – | – | 1.3 |
| | 1941 | 219.3 | 1 | 42 | 3– | – | – | | 22 | – | 119 | – | 2 | 9– | – | – | – | – | | 198 | 0.0 | 0.2 | 0.0 | – | – | – | 0.1 | – | 0.5 | – | 0.0 | 0.0 | – | – | – | – | – | 0.9 |
| | 1942 | 22 | – | 50 | 14– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 64 | – | 2.3 | 0.6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2.9 |
| | 1943 | 52.5 | 2 | 17 | 31– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 50 | 0.0 | 0.3 | 0.6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| | 1944 | 129.8 | 1 | 59 | 30– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 90 | 0.0 | 0.5 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.7 |
| | 1945 | 378 | 68 | 151 | 70 | 14– | – | – | | 62 | 13– | – | | 7 | 1 | 1 | 2 | – | 1 | 390 | 0.2 | 0.4 | 0.2 | 0.0 | – | – | – | 0.2 | 0.0 | – | – | 0.0 | 0.0 | 0.0 | 0.0 | – | 0.0 | 1.0 |
| | 1947 | 318 | 12 | 142 | 15– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 169 | 0.0 | 0.4 | 0.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.5 |
| | 1948 | 168 | 11 | 12 | 15– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 38 | 0.1 | 0.1 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.2 |
| | 1949 | 180.5 | 6 | 36 | 33– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 75 | 0.0 | 0.2 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1950 | 165 | 4 | 27 | 15– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 46 | 0.0 | 0.2 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| | 1951 | 133 | 1 | 50 | — | | 1– | – | – | – | – | – | – | – | – | – | – | – | | 52 | 0.0 | 0.4 | – | – | 0.0 | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1952 | 321 | 10 | 162 | 9– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 181 | 0.0 | 0.5 | 0.0 | | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1953 | 520 | 45 | 96 | 69 | 4– | – | – | – | – | – | – | | 4– | – | – | – | – | | 218 | 0.1 | 0.2 | 0.1 | 0.0 | – | – | – | – | – | – | – | 0.0 | – | – | – | – | – | 0.4 |
| | 1954 | 345 | 1 | 35 | 11– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 47 | 0.0 | 0.1 | 0.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.1 |
| | 1955 | 126– | | 18 | 9– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 27 | – | 0.1 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.2 |
| | 1956 | 433– | | 32 | 45 | 160– | | 11 | – | 32 | 14– | – | – | – | – | – | – | – | | 294 | – | 0.1 | 0.1 | 0.4 | – | 0.0 | – | 0.1 | 0.0 | – | – | – | – | – | – | – | – | 0.7 |
| | 1957 | 315 | 2 | 22 | 78 | 28– | – | – | – | – | – | – | – | – | – | – | – | – | | 130 | 0.0 | 0.1 | 0.2 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1958 | 240 | 8 | 11 | 28 | — | – | – | | 10 | 5– | – | – | – | – | | 3– | – | | 65 | 0.0 | 0.0 | 0.1 | – | – | – | – | 0.0 | 0.0 | – | – | – | – | – | 0.0 | – | – | 0.3 |
| | 1959 | 110 | – | 10 | 19– | – | – | – | – | – | – | – | – | – | – | – | – | – | | 29 | – | 0.1 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| | 1960 | 103 | 7 | 26 | 5– | – | – | – | – | – | – | – | – | – | | 1– | – | – | | 39 | 0.1 | 0.3 | 0.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1962 | 71 | 1 | 22 | 8– | – | – | – | – | – | – | – | | 4– | – | – | – | – | | 35 | 0.0 | 0.3 | 0.1 | – | – | – | – | – | – | – | – | 0.1 | – | – | – | – | – | 0.5 |

Table G.2.–Continued.

| | | | Catch | | | | | | | | | | | | | | | | | | CPE | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water body | Year | Angler hours | Brook trout | Brown trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Carp | Sucker | Lake trout | Tiger trout | Total # fish | Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Yellow perch | Grass pickerel | Walleye | Northern pike | Carp | Bullhead | Sucker | Lake Trout | Tiger trout | Total CPE |
| Boardman R., North Branch | 1928 | 5 | 46 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 46 | 9.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 9.2 |
| | 1929 | 74.5 | 96 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 96 | 1.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.3 |
| | 1930 | 17.5 | 25 | 7 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 35 | 1.4 | 0.4 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2.0 |
| | 1931 | 12 | 34 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 34 | 2.8 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2.8 |
| | 1935 | 1 | 5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 5 | 5.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 5.0 |
| | 1936 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1937 | 6 | 13 | – | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 16 | 2.2 | | 0.5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2.7 |
| | 1945 | 31 | 19 | 2 | 6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 27 | 0.6 | 0.1 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.9 |
| | 1948 | 43 | 16 | 11 | 14 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 41 | 0.4 | 0.3 | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| | 1949 | 10 | 16 | 2 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 19 | 1.6 | 0.2 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.9 |
| | 1951 | 99 | 11 | 9 | 7 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 27 | 0.1 | 0.1 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| | 1954 | 68 | 48 | 8 | 23 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 79 | 0.7 | 0.1 | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.2 |
| | 1955 | 79 | 20 | 7 | 46 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 73 | 0.3 | 0.1 | 0.6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.9 |
| | 1956 | 93 | 55 | 20 | 110 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 185 | 0.6 | 0.2 | 1.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2.0 |
| | 1957 | 38 | 10 | | 45 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 55 | 0.3 | – | 1.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.4 |
| | 1958 | 56 | 9 | 5 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 18 | 0.2 | 0.1 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| | 1959 | 82 | 17 | 1 | 12 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 30 | 0.2 | 0.0 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1960 | 41 | 5 | 12 | 15 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 32 | 0.1 | 0.3 | 0.4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.8 |
| | 1962 | 57.5 | 29 | 13 | 6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 48 | 0.5 | 0.2 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.8 |
| Boardman R., South Branch | 1928 | 6 | 20 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 20 | 3.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3.3 |
| | 1929 | 38 | 51 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 51 | 1.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.3 |
| | 1930 | 28 | 106 | 5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 111 | 3.8 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 4.0 |
| | 1931 | 23 | 32 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 33 | 1.4 | – | 0.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.4 |
| | 1933 | 3 | 10 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 10 | 3.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3.3 |
| | 1937 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1939 | 11.5 | 2 | 2 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 7 | 0.2 | 0.2 | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1945 | 7 | 3 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 6 | 0.4 | 0.4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.9 |
| | 1948 | 12 | 11 | 7 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 18 | 0.9 | 0.6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.5 |
| | 1950 | 3 | 1 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 4 | 0.3 | 1.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.3 |
| | 1954 | 21 | 32 | 4 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 40 | 1.5 | 0.2 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.9 |
| | 1956 | 20 | 17 | 9 | 18 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 44 | 0.9 | 0.5 | 0.9 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2.2 |
| | 1957 | 33 | 1 | 16 | 19 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 36 | 0.0 | 0.5 | 0.6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.1 |
| | 1958 | 25 | – | 11 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 11 | – | 0.4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1959 | 49 | 20 | 1 | 10 | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | 32 | 0.4 | 0.0 | 0.2 | – | – | – | – | – | – | – | – | 0.0 | – | – | – | – | – | – | 0.7 |
| | 1960 | 9.5 | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0.1 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.2 |
| | 1961 | 6 | – | – | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3 | – | – | 0.5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.5 |

Table G.2.–Continued.

| | | | Catch | | | | | | | | | | | | | | | | | | | CPE | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water body | Year | Angler hours | Brook trout | Brown trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Yellow perch | Grass pickerel | Walleye | Northern pike | Bullhead | Carp | Sucker | Lake trout | Tiger trout | Total # fish | Brook trout | Borwn trout | Rainbow trout | Smallmouth bass | Largemouth bass | Bluegill | Pumpkinseed | Rock bass | Yellow perch | Grass pickerel | Walleye | Northern pike | Carp | Bullhead | Sucker | Lake Trout | Tiger trout | Total CPE |
| Carpenter Cr. | 1949 | 8 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1957 | 8 | 7 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 8 | 0.9 | – | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| | 1959 | 11 | 17 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 17 | 1.5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.5 |
| Crofton Cr. | 1948 | 11 | 15 | – | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 18 | 1.4 | – | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.6 |
| | 1955 | 2 | 6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 6 | 3.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3.0 |
| | 1956 | 5 | 17 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 17 | 3.4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3.4 |
| | 1959 | 20 | 14 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 0.7 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.7 |
| East Cr. | 1930 | 12 | 17 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | 9 | – | 28 | 1.4 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.8 | – | 2.3 |
| | 1934 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1935 | 6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1937 | 4..5 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1939 | 17.75 | 1 | 18 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 19 | 0.1 | 1.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.1 |
| | 1940 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1941 | 34.5 | 1 | 12 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 0.0 | 0.3 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1944 | 18.75 | 4 | – | 14 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 18 | 0.2 | | 0.7 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| | 1945 | 9.5 | 5 | 4 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 13 | 0.5 | 0.4 | 0.4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.4 |
| | 1946 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1949 | 31 | 41 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 41 | 1.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.3 |
| | 1951 | 3 | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0.3 | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.7 |
| | 1952 | 11 | 3 | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3 | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| | 1955 | 2 | – | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3 | – | 1.5 | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.5 |
| Failing Stream | 1948 | 2 | 2 | | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 1.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| | 1957 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Jaxon Cr. | 1949 | 20 | 17 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 17 | 0.9 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.9 |
| | 1950 | 10 | – | 4 | 4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 8 | – | 0.4 | 0.4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.8 |
| | 1955 | 4 | – | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | – | – | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.3 |
| Kids Cr. | 1958 | 39 | 4 | – | 13 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 17 | 0.1 | – | 0.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| Twenty-Two Cr. | 1934 | 17 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| | 1935 | 12 | 5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 5 | 0.4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1938 | 12 | 7 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 7 | 0.6 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.6 |
| | 1940 | 7.5 | 12 | – | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 13 | 1.6 | – | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.7 |
| | 1945 | 11 | 14 | 3 | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 19 | 1.3 | 0.3 | 0.2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.7 |
| | 1950 | 6 | 8 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 8 | 1.3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.3 |
| | 1951 | 2 | 3 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 3 | 1.5 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.5 |
| | 1957 | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1 | 1.0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.0 |
| | 1959 | 19 | 7 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 7 | 0.4 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.4 |
| | 1960 | 10 | 9 | 2 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 12 | 0.9 | 0.2 | 0.1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 1.2 |