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FISHERIES DIVISION**

**Fisheries Technical Report 2001-4  
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**Gerald P. Rakoczy  
and  
Donna Wesander-Russell**



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## **Charter Boat Catch and Effort from the Michigan Waters of the Great Lakes, 1998**

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*Abstract.*—Legislation enacted in 1992 by the State of Michigan requires all charter boat operators to report sportfishing catch and effort to the Michigan Department of Natural Resources. The objective of the catch and activity reporting system is to obtain a continuous annual record of the number, type, and location of fish harvested by charter boat clients in Michigan.

Ninety-eight percent of approximately 500 charter fishing operators complied with the law by returning their completed catch reporting forms in 1998. These operators reported making 18,171 charter fishing excursions during April through October. The total number of charter excursions increased by 14% in 1998 compared to 1997. Approximately 495,000 angler hours were spent fishing by some 82,600 charter clients. The distribution of charter fishing excursions was: 68% Lake Michigan, 18% Lake Huron, 9% Lake Erie, 3% Lake Superior, and 2% Lake St. Clair. Over 243,000 fish were reported harvested. The harvest was composed of about 64,300 yellow perch, 54,000 walleye, 45,900 lake trout, 39,800 chinook salmon, 17,300 coho salmon, 15,100 rainbow trout, and 2,600 brown trout.

Michigan's charter boat industry increased from 250 operations in 1979 to nearly 900 in 1989. Since the late 1980s, the number of charter boats used for sport fishing excursions on Michigan's Great Lakes waters has declined to approximately 500 in 1998. The charter fishing industry provides Michigan's economy with significant economic benefits each year. For example, 239,000 clients spent an estimated \$21 million in addition to charter fees in 1985, and the total statewide investment by charter boat firms in the same year was estimated to exceed \$30 million (Mahoney et al. 1986).

The Michigan Legislature in 1992 passed Act 115, Public Acts of 1992. This legislation re-authorized and strengthened the law, first

enacted during 1989 (Act 22, Public Acts of 1989), which requires the reporting of sport catch and effort by the charter fishing industry. The legislation was supported by the Michigan Charter Boat Association (MCBA), an industry representative, and the Michigan Department of Natural Resources (MDNR). Among other provisions, the law provides more stringent penalties for charter fishing operators who are delinquent by more than 60 days with their catch reports. Also, the law requires that all operators maintain (on board) an up-to-date daily log of their catch and fishing activity.

The objective of the MDNR, Fisheries Division's catch reporting system is to obtain a continuous annual record of fishing effort and

the number, type, and location of fish harvested by charter boat anglers in Michigan. These data will aid the MDNR's Great Lakes fishery management efforts by providing valuable trend information about charter harvest and catch rates, which reflect the status of fish stocks important to the industry. The data will also allow the MCBA to monitor the health and welfare of its industry.

## **Methods**

The Michigan Charter Boat Daily Catch Report Form (PR8206) was developed in 1989 by a committee made up of two members each from the MDNR and the MCBA (Figure 1). Forms and grid maps of the Great Lakes are mailed annually to all known charter operators during March. Charter operators were identified from previous years' lists of reporting operators and from Sport Trolling Licenses purchased from Law Enforcement Division. Charter operators who used their vessels for fishing were informed that they were required by law to complete the form each time they fished. A form was to be mailed by the tenth of each month following the month of fishing to the MDNR, Charlevoix Fisheries Station.

The data form requires the following information: an assigned identification number for each charter boat, lake, date fished, port, grid fished, hours fished, number of resident and nonresident anglers, catch (number) of major species, and number of sea lamprey seen attached to chinook salmon or lake trout. Space was also provided on the form for comments or observations.

Completed data forms returned to the Charlevoix Fisheries Station were logged, coded by port, and entered on computer. Incomplete forms were logged then returned to the charter operator with a letter stating why the report was returned.

Each month (June through October), postcard notices were sent to charter operators who had not filed a report for the previous month. Two notices were sent each month, the first after an operator was delinquent for 10 days and the second after 30 days.

In December 1998, operators who had not filed reports for one or more months during the

period May through September were sent letters via certified mail. These letters informed the operator that this would be the last notice he or she would receive. If the recipient did not respond in writing within 14 days of receipt of this notice, his or her name was submitted to the MDNR, Law Enforcement Division recommending non-issuance of an inspection certificate for the 1999 season.

Three measures of fishing effort were summarized: angler hours, angler trips, and charter excursions. Angler hours were based upon total hours fished (dock to dock) by each angler. An angler trip was one completed fishing outing by one individual. A charter excursion was one completed boat trip. For example, if a charter operator took four anglers fishing for 6 hours, total fishing effort would be 24 angler hours, 4 angler trips, and 1 charter excursion. Tables summarizing catch and effort for selected ports around the Great Lakes are contained in the appendices.

Data regarding number of sea lamprey observed by charter operators were collected at request of the U.S. Fish and Wildlife Service's (USFWS) Sea Lamprey Control Station at Marquette, Michigan. These data are used by the USFWS as an index of sea lamprey abundance.

## **Results**

### *Compliance*

During the 1998 fishing season, an average of 66% of all charter boat operators complied with the law by submitting their catch reports by the due date, while 85% submitted reports within 30 days of the due date. Monthly rate of compliance in 1998 was virtually the same as compared to 1997. By the end of 1998, 98% of all charter operators had complied with the law, which was the same as 1997 (Rakoczy and Wesander-Russell 1998).

### *Catch and effort*

Charter operators submitted reports on 18,171 charter excursions during April through October, 1998 on lakes Michigan, Huron, Erie,

Superior, and St. Clair (Tables 1 through 5). The total number of charter excursions in 1998 increased by 14% compared to 1997 (Rakoczy and Wesander-Russell 1998). Increases in the number of charter excursions in 1998 as compared to 1997 occurred on lakes Michigan (+16%), Huron (+20%), Superior (+4%), and St. Clair (+10%); but declined slightly (-3%) on Lake Erie. The distribution of charter fishing effort (excursions) by lake was: 68% Lake Michigan, 18% Lake Huron, 9% Lake Erie, 3% Lake Superior, and 2% Lake St. Clair. This distribution of charter fishing effort by lake in 1998 was very similar to previous years.

A total of 494,662 hours were spent fishing by 82,553 charter anglers in Michigan's waters and tributaries of the Great Lakes (Tables 1 through 5). The total number of charter anglers in 1998 increased by 13% compared to 1997. Twenty-nine percent of all charter clients were not residents of Michigan. Lake Superior charter operators had the greatest percentage of nonresident clients (52%; Table 4), while Lake St. Clair charter captains had the lowest percentage (7%; Table 5). The main reason Lake Superior has always had a large percentage of non-resident charter anglers can be attributed to the active charter fishery in the vicinity of Isle Royale National Park. The majority of these charter trips originate in Minnesota.

A total of 243,000 fish were reported harvested in all lakes. Lake Michigan accounted for 51% of all fish harvested, while lakes Erie and Huron accounted for 33% and 10%, respectively, of the total harvest. The most numerous species in the harvest was yellow perch (64,300) which accounted for 26% of the total harvest. Numbers of other species harvested were: 54,000 walleye (22%), 45,900 lake trout (19%), 39,800 chinook salmon (16%), 17,300 coho salmon (7%), 15,100 rainbow trout (6%), and 2,600 brown trout (1%). The "other" species category was approximately 2% of the total reported catch. Since other species are not identified on the catch reporting form, the actual composition of this category is unknown.

In general, the overall numbers of salmonines harvested from Michigan's Great Lakes waters increased during 1998 compared to 1997. The harvest of coho salmon (+40%) and lake trout (+38%) increased compared to the previous year. The numbers of chinook salmon

and rainbow trout decreased slightly, while the number of brown trout harvested declined by 48%.

Most of the 1997-98 increase in total salmonine harvest came from lakes Michigan and Huron. In Lake Michigan, harvest increased 48% (+10,700 fish) for lake trout and 41% (+4,900) for coho salmon. Harvest decreased 4% (-1,200 fish) for chinook salmon, 5% (-800) for rainbow trout, and 4% (-2,600) for brown trout. In Lake Huron, harvest increased 57% (+3,000 fish) for lake trout, 7% (+800) for chinook salmon, and 100% (+198) for brown trout. The harvest of rainbow trout decreased 20% (-213).

The number of walleye harvested in 1998, compared to 1997, increased by 12,000 fish (+29%), while the yellow perch harvest decreased by nearly 25,000 fish (-28%). The majority of walleye harvested by charter anglers in Michigan waters of the Great Lakes come from Lake Erie. The Lake Erie walleye harvest increased by 40% in 1998. Forty-nine percent of the total yellow perch harvest during 1998 came from Lake Erie, while 41% came from Lake Michigan. Harvest of yellow perch decreased 7% in Lake Erie and 40% in Lake Michigan.

Catch rates (fish per 100 angler hours) for Lake Michigan charter anglers in 1998, compared to 1997, increased for coho salmon (+26%) and lake trout (+31%), while rates declined for chinook salmon (-16%), rainbow trout (-17%), and brown trout (-60%) (Table 6). On Lake Huron, catch rates increased for coho salmon (+100%), brown trout (+50%), and lake trout (+29%). Lake trout catch rates were the highest recorded over the nine year data series and have been trending upward since 1994. Catch rates declined for chinook salmon (-13%) and rainbow trout (-35%) on Lake Huron. Lake trout are the most important salmonine in the charter catch from Lake Superior and catch rates for lake trout have been virtually unchanged during the past nine seasons.

Walleye play an important role in charter fisheries on lakes Erie, Huron, and St. Clair. Catch rates for walleye by charter anglers increased on all three lakes by approximately 23-27% during 1998, compared to 1997 (Table 7).

Most charter excursions which took place on Michigan's Great Lakes waters during 1998 were aimed at the various species of salmonines. The total catch per charter excursion for all five species of salmonines combined increased during 1998 compared to the 1990-97 mean catch rate at the Lake Michigan ports of St. Joseph/Benton Harbor, Grand Haven, Manistee, and Frankfort/Elberta (Table 8). The ports of Ludington and Leland had slight (<10%) declines compared to the mean. Catch rates for salmonines increased in 1998 compared to the eight year mean at all five selected Lake Huron ports. Salmonine catch rates in 1998 at Oscoda, Grindstone City, and Harbor Beach were more than 50% greater than the previous eight year average, indicating that the 1998 fishery on Lake Huron was one of the best on record. On Lake Superior, salmonine catch rates decreased compared to the 1990-97 mean, at Marquette and Black River Harbor, but increased at Ontonagon.

As has been the case in previous years (1990-97), numbers of sea lamprey attached to chinook salmon and lake trout were much higher on Lake Huron than on the other Great Lakes (Table 9). Numbers of sea lamprey attached per

100 lake trout harvested from Lake Huron in 1998 was 2.1, as compared to 1.1 for Lake Michigan and 0.5 for Lake Superior. Charter captains also reported 5.2 lamprey per 100 chinook salmon harvested on Lake Huron during 1998, compared to 0.4 for Lake Michigan and zero for Lake Superior. In general, the numbers of sea lamprey observed during 1998, compared to 1997, increased on Lakes Michigan and Huron for chinook salmon, but remained virtually unchanged for lake trout. However, since the early 1990s sea lamprey attachments have declined approximately 70% on Lake Huron for both chinook salmon and lake trout.

### **Acknowledgments**

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES - FISHERIES DIVISION

### MICHIGAN CHARTER BOAT DAILY CATCH REPORT

Submission of this information is required by authority of Section 44508 of Part 445 of Act 451, P. A. of 1994, as amended. Failure to comply with the provisions of this Act will prohibit issuance of an Inspection Certificate for the following season.

Please reference instructions on reverse side.

|                       |      |
|-----------------------|------|
| IDENTIFICATION NUMBER |      |
| LAKE                  |      |
| MONTH                 | YEAR |

| Date | Port Fished | Grid Fished | Hours Fished<br>(Dock to Dock) | No. of Anglers |          | Daily Catch |     |     |     |     |     |     |     | No. of Lamprey<br>Seen On |     |  |  |
|------|-------------|-------------|--------------------------------|----------------|----------|-------------|-----|-----|-----|-----|-----|-----|-----|---------------------------|-----|--|--|
|      |             |             |                                | Res.           | Non-Res. | COH         | CHS | RBT | BNT | LAT | YEP | WAE | OTH | CHS                       | LAT |  |  |
| 1    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 2    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 3    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 4    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 5    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 6    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 7    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 8    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 9    |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 10   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 11   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 12   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 13   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 14   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 15   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 16   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 17   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 18   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 19   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 20   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 21   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 22   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 23   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 24   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 25   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 26   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 27   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 28   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 29   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 30   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |
| 31   |             |             |                                |                |          |             |     |     |     |     |     |     |     |                           |     |  |  |

Comments:  
 .....  
 .....  
 .....

Signature \_\_\_\_\_ Date \_\_\_\_\_

DISTRIBUTION: White - Charlevox; Canary - Charter Captain

PR 8206 (Rev. 02/26/98)

Figure 1.-Michigan charter boat daily catch report form.

Table 1.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake Michigan, 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month  |        |        |        |         |        |       | Season  |
|---------------------|-------------------------|------------------------------|--------|--------|--------|--------|---------|--------|-------|---------|
|                     |                         |                              | Apr    | May    | Jun    | Jul    | Aug     | Sep    | Oct   |         |
| Coho salmon         | 0.048                   | 1.367                        | 1,967  | 5,566  | 1,929  | 1,981  | 3,268   | 2,027  | 124   | 16,862  |
| Chinook salmon      | 0.081                   | 2.336                        | 287    | 4,920  | 3,294  | 7,556  | 9,710   | 2,900  | 144   | 28,811  |
| Rainbow trout       | 0.040                   | 1.147                        | 783    | 1,815  | 3,235  | 3,136  | 3,211   | 1,235  | 733   | 14,148  |
| Brown trout         | 0.006                   | 0.176                        | 484    | 428    | 264    | 524    | 335     | 95     | 42    | 2,172   |
| Lake trout          | 0.094                   | 2.688                        | 99     | 5,601  | 6,439  | 9,258  | 10,175  | 1,583  | 1     | 33,156  |
| Yellow perch        | 0.074                   | 2.114                        | 4,137  | 11,475 | 2,294  | 3,904  | 2,820   | 1,441  | 0     | 26,071  |
| Walleye             | 0.005                   | 0.137                        | 0      | 246    | 318    | 200    | 312     | 320    | 298   | 1,694   |
| Other               | 0.001                   | 0.015                        | 15     | 12     | 45     | 37     | 36      | 19     | 22    | 186     |
| Lamprey on:         |                         |                              |        |        |        |        |         |        |       |         |
| Chinook salmon      |                         |                              | 3      | 16     | 9      | 26     | 54      | 9      | 0     | 117     |
| Lake trout          |                         |                              | 0      | 98     | 62     | 71     | 110     | 16     | 0     | 357     |
| Angler hours        |                         |                              | 14,606 | 51,498 | 54,499 | 78,881 | 109,974 | 37,440 | 7,168 | 354,065 |
| Angler trips        |                         |                              | 2,460  | 8,345  | 9,067  | 13,248 | 17,888  | 6,322  | 1,039 | 58,369  |
| Resident anglers    |                         |                              | 1,285  | 4,788  | 5,763  | 8,764  | 12,098  | 4,393  | 535   | 37,626  |
| Nonresident anglers |                         |                              | 1,175  | 3,557  | 3,308  | 4,484  | 3,936   | 1,486  | 292   | 12,333  |
| Charter excursions  |                         |                              | 389    | 1,590  | 1,845  | 2,795  | 3,936   | 1,486  | 292   | 12,333  |

Table 2.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake Huron, 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |        |        |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|--------|--------|-------|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul    | Aug    | Sep   | Oct |        |
| Coho salmon         | 0.004                   | 0.090                        | 9     | 45    | 34    | 54     | 93     | 14    | 40  | 289    |
| Chinook salmon      | 0.161                   | 3.385                        | 90    | 1,120 | 900   | 3,241  | 4,434  | 1,065 | 17  | 10,867 |
| Rainbow trout       | 0.013                   | 0.274                        | 139   | 125   | 157   | 228    | 170    | 39    | 21  | 879    |
| Brown trout         | 0.006                   | 0.123                        | 13    | 67    | 188   | 59     | 61     | 5     | 3   | 396    |
| Lake trout          | 0.126                   | 2.639                        | 56    | 1,519 | 2,277 | 2,049  | 2,318  | 251   | 0   | 8,470  |
| Yellow perch        | 0.025                   | 0.518                        | 0     | 59    | 0     | 451    | 326    | 812   | 16  | 1,664  |
| Walleye             | 0.037                   | 0.784                        | 17    | 105   | 267   | 1,440  | 647    | 40    | 0   | 2,516  |
| Other               | 0.005                   | 0.106                        | 0     | 18    | 57    | 162    | 91     | 10    | 1   | 339    |
| Lamprey on:         |                         |                              |       |       |       |        |        |       |     |        |
| Chinook salmon      |                         |                              | 3     | 56    | 45    | 147    | 278    | 39    | 0   | 568    |
| Lake trout          |                         |                              | 0     | 21    | 57    | 52     | 36     | 9     | 0   | 175    |
| Angler hours        |                         |                              | 1,443 | 8,039 | 9,232 | 19,058 | 23,176 | 6,032 | 447 | 67,426 |
| Angler trips        |                         |                              | 228   | 1,388 | 1,639 | 3,415  | 4,084  | 1,087 | 65  | 11,906 |
| Resident anglers    |                         |                              | 208   | 1,288 | 1,478 | 3,027  | 3,535  | 979   | 55  | 10,567 |
| Nonresident anglers |                         |                              | 20    | 100   | 161   | 391    | 608    | 111   | 10  | 1,401  |
| Charter excursions  |                         |                              | 80    | 364   | 457   | 885    | 1,098  | 297   | 29  | 3,210  |



Table 3.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake Erie, 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |        |        |        |        |       | Season |
|---------------------|-------------------------|------------------------------|-------|-------|--------|--------|--------|--------|-------|--------|
|                     |                         |                              | Apr   | May   | Jun    | Jul    | Aug    | Sep    | Oct   |        |
| Coho salmon         | 0.000                   | 0.001                        | 0     | 0     | 1      | 0      | 0      | 0      | 0     | 1      |
| Chinook salmon      | 0.000                   | 0.001                        | 0     | 0     | 1      | 0      | 0      | 0      | 0     | 1      |
| Rainbow trout       | 0.000                   | 0.010                        | 0     | 10    | 6      | 1      | 0      | 0      | 0     | 17     |
| Brown trout         | 0.000                   | 0.000                        | 0     | 0     | 0      | 0      | 0      | 0      | 0     | 0      |
| Lake trout          | 0.000                   | 0.000                        | 0     | 0     | 0      | 0      | 0      | 0      | 0     | 0      |
| Yellow perch        | 0.704                   | 18.880                       | 0     | 185   | 300    | 2,380  | 11,485 | 13,370 | 3,979 | 31,699 |
| Walleye             | 1.067                   | 28.610                       | 298   | 7,392 | 28,127 | 10,646 | 69     | 1,415  | 90    | 48,037 |
| Other               | 0.018                   | 0.485                        | 11    | 130   | 388    | 137    | 15     | 69     | 64    | 814    |
| Lamprey on:         |                         |                              |       |       |        |        |        |        |       |        |
| Chinook salmon      |                         |                              | 0     | 0     | 0      | 0      | 0      | 0      | 0     | 0      |
| Lake trout          |                         |                              | 0     | 0     | 0      | 0      | 0      | 0      | 0     | 0      |
| Angler hours        |                         |                              | 435   | 8,785 | 21,105 | 8,898  | 2,415  | 2,635  | 758   | 45,031 |
| Angler trips        |                         |                              | 79    | 1,507 | 3,798  | 1,620  | 489    | 524    | 150   | 8,167  |
| Resident anglers    |                         |                              | 58    | 1,413 | 3,438  | 1,510  | 473    | 487    | 148   | 7,527  |
| Nonresident anglers |                         |                              | 21    | 94    | 360    | 157    | 16     | 37     | 2     | 687    |
| Charter excursions  |                         |                              | 20    | 311   | 750    | 348    | 103    | 114    | 33    | 1,679  |

Table 4.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake Superior, 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |       |       |       |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-------|-------|-------|-------|-----|--------|
|                     |                         |                              | Apr   | May | Jun   | Jul   | Aug   | Sep   | Oct |        |
| Coho salmon         | 0.007                   | 0.234                        | 0     | 14  | 21    | 28    | 46    | 12    | 0   | 121    |
| Chinook salmon      | 0.007                   | 0.232                        | 0     | 0   | 1     | 7     | 37    | 75    | 0   | 120    |
| Rainbow trout       | 0.002                   | 0.075                        | 0     | 1   | 2     | 10    | 22    | 4     | 0   | 39     |
| Brown trout         | 0.000                   | 0.004                        | 0     | 0   | 0     | 2     | 0     | 0     | 0   | 2      |
| Lake trout          | 0.252                   | 8.172                        | 0     | 97  | 680   | 1,656 | 1,572 | 214   | 6   | 4,225  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0     | 0     | 0     | 0     | 0   | 0      |
| Walleye             | 0.000                   | 0.002                        | 0     | 1   | 0     | 0     | 0     | 0     | 0   | 1      |
| Other               | 0.001                   | 0.046                        | 0     | 0   | 14    | 6     | 4     | 0     | 0   | 24     |
| Lamprey on:         |                         |                              |       |     |       |       |       |       |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0     | 0     | 0     | 0     | 0   | 0      |
| Lake trout          |                         |                              | 0     | 1   | 4     | 8     | 5     | 1     | 0   | 19     |
| Angler hours        |                         |                              | 0     | 400 | 2,857 | 6,324 | 6,027 | 1,105 | 28  | 16,740 |
| Angler trips        |                         |                              | 0     | 70  | 371   | 850   | 818   | 190   | 4   | 2,303  |
| Resident anglers    |                         |                              | 0     | 55  | 179   | 377   | 342   | 143   | 4   | 1,100  |
| Nonresident anglers |                         |                              | 0     | 15  | 192   | 473   | 476   | 47    | 0   | 1,203  |
| Charter excursions  |                         |                              | 0     | 18  | 83    | 184   | 176   | 55    | 1   | 517    |

Table 5.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake St. Clair, and the St. Clair River, 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |       |       |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct |        |
| Coho salmon         | 0.001                   | 0.014                        | 0     | 0     | 0     | 0     | 0     | 0     | 6   | 6      |
| Chinook salmon      | 0.000                   | 0.007                        | 0     | 0     | 1     | 0     | 2     | 0     | 0   | 3      |
| Rainbow trout       | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 0      |
| Brown trout         | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 0      |
| Lake trout          | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 0      |
| Yellow perch        | 0.429                   | 11.324                       | 0     | 44    | 687   | 661   | 1,643 | 1,009 | 848 | 4,892  |
| Walleye             | 0.161                   | 4.243                        | 42    | 228   | 262   | 895   | 340   | 66    | 0   | 1,833  |
| Other               | 0.254                   | 6.692                        | 0     | 56    | 635   | 884   | 850   | 448   | 18  | 2,891  |
| Lamprey on:         |                         |                              |       |       |       |       |       |       |     |        |
| Chinook salmon      |                         |                              | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 0      |
| Angler hours        |                         |                              | 94    | 1,111 | 2,176 | 3,293 | 2,649 | 1,585 | 492 | 11,400 |
| Angler trips        |                         |                              | 17    | 212   | 339   | 520   | 409   | 233   | 78  | 1,808  |
| Resident anglers    |                         |                              | 13    | 205   | 325   | 469   | 374   | 224   | 78  | 1,688  |
| Nonresident anglers |                         |                              | 4     | 7     | 14    | 51    | 35    | 9     | 0   | 120    |
| Charter excursions  |                         |                              | 6     | 45    | 85    | 123   | 99    | 57    | 17  | 432    |

Table 6.—Catch rates (fish per 100 angler hours) by charter anglers for salmonines on lakes Michigan, Huron, and Superior during 1990-98.

| Species        | Year |      |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|------|------|
|                | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
| Michigan       |      |      |      |      |      |      |      |      |      |
| Coho salmon    | 3.9  | 2.8  | 3.4  | 4.5  | 2.6  | 2.2  | 2.9  | 3.8  | 4.8  |
| Chinook salmon | 7.4  | 7.0  | 4.9  | 4.0  | 4.0  | 5.0  | 9.0  | 9.6  | 8.1  |
| Rainbow trout  | 4.0  | 7.2  | 6.5  | 5.0  | 5.2  | 3.0  | 6.3  | 4.8  | 4.0  |
| Brown trout    | 0.6  | 0.8  | 0.4  | 0.7  | 1.1  | 0.7  | 1.1  | 1.5  | 0.6  |
| Lake trout     | 8.4  | 8.7  | 7.6  | 9.7  | 10.4 | 10.2 | 7.5  | 7.2  | 9.4  |
| Huron          |      |      |      |      |      |      |      |      |      |
| Coho salmon    | 0.2  | 0.2  | 0.2  | 0.3  | 0.3  | 0.1  | 0.4  | 0.2  | 0.4  |
| Chinook salmon | 6.0  | 6.4  | 6.4  | 7.2  | 8.3  | 11.7 | 11.8 | 18.5 | 16.1 |
| Rainbow trout  | 0.3  | 0.6  | 0.7  | 1.4  | 1.3  | 2.6  | 2.6  | 2.0  | 1.3  |
| Brown trout    | 0.1  | 0.2  | 0.7  | 1.7  | 2.1  | 1.9  | 0.8  | 0.4  | 0.6  |
| Lake trout     | 9.8  | 7.9  | 6.6  | 4.3  | 6.3  | 6.6  | 9.4  | 9.8  | 12.6 |
| Superior       |      |      |      |      |      |      |      |      |      |
| Coho salmon    | 1.2  | 3.2  | 1.3  | 1.0  | 1.6  | 1.7  | 1.9  | 1.1  | 0.7  |
| Chinook salmon | 0.3  | 0.4  | 0.3  | 0.3  | 0.1  | 0.2  | 0.3  | 0.1  | 0.7  |
| Rainbow trout  | 0.3  | 0.3  | 0.1  | 0.2  | 0.3  | 0.3  | 0.3  | 0.3  | 0.2  |
| Brown trout    | 0.1  | 0.2  | 0.1  | 0.0  | 0.1  | <0.1 | <0.1 | 0.1  | <0.1 |
| Lake trout     | 28.5 | 27.9 | 25.5 | 28.2 | 25.3 | 26.2 | 28.5 | 26.9 | 25.2 |

Table 7.—Catch rates (fish per 100 angler hours) by charter anglers for yellow perch and walleye on lakes Huron, St. Clair, and Erie during 1990-98.

| Species      | Year |      |      |      |      |      |       |       |       |
|--------------|------|------|------|------|------|------|-------|-------|-------|
|              | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996  | 1997  | 1998  |
| Huron        |      |      |      |      |      |      |       |       |       |
| Yellow perch | 9.2  | 7.4  | 6.3  | 4.0  | 4.9  | 3.7  | 2.8   | 1.6   | 2.5   |
| Walleye      | 5.1  | 7.1  | 6.7  | 7.4  | 6.7  | 3.5  | 3.4   | 3.0   | 3.7   |
| St. Clair    |      |      |      |      |      |      |       |       |       |
| Yellow perch | 13.8 | 16.8 | 15.1 | 40.4 | 85.5 | 66.9 | 100.3 | 103.3 | 42.9  |
| Walleye      | 32.4 | 20.4 | 12.5 | 18.4 | 12.3 | 15.5 | 12.3  | 13.1  | 16.1  |
| Erie         |      |      |      |      |      |      |       |       |       |
| Yellow perch | 29.4 | 34.1 | 43.3 | 43.9 | 28.7 | 51.7 | 78.4  | 74.6  | 70.4  |
| Walleye      | 74.5 | 62.8 | 78.5 | 81.4 | 69.6 | 82.4 | 82.2  | 83.9  | 106.7 |

Table 8.—Total and mean (1990-97) catch per excursion for all salmonines combined by charter anglers at various ports on lakes Michigan, Huron, and Superior 1990-98.

| Port                     | Year |      |      |      |      |      |      |      |      | Mean |
|--------------------------|------|------|------|------|------|------|------|------|------|------|
|                          | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |      |
| Lake Michigan            |      |      |      |      |      |      |      |      |      |      |
| St. Joseph/Benton Harbor | 7.3  | 8.7  | 7.3  | 8.1  | 7.7  | 7.7  | 10.0 | 9.8  | 9.3  | 8.3  |
| Grand Haven              | 5.0  | 5.5  | 4.7  | 5.3  | 5.0  | 5.2  | 6.1  | 6.7  | 6.7  | 5.4  |
| Ludington                | 9.3  | 11.1 | 8.4  | 8.8  | 7.4  | 7.2  | 10.8 | 8.4  | 8.1  | 8.9  |
| Manistee                 | 6.2  | 8.0  | 5.7  | 6.2  | 5.8  | 6.9  | 10.3 | 8.8  | 8.2  | 7.2  |
| Frankfort/Elberta        | 7.1  | 7.5  | 5.8  | 6.6  | 6.2  | 6.7  | 8.8  | 7.6  | 8.2  | 7.0  |
| Leland                   | 7.2  | 9.5  | 9.0  | 6.9  | 9.1  | 8.6  | 9.4  | 9.1  | 8.1  | 8.6  |
| Lake Huron               |      |      |      |      |      |      |      |      |      |      |
| Rogers City              | 3.2  | 3.3  | 2.5  | 3.9  | 5.2  | 6.6  | 5.9  | 8.2  | 5.4  | 4.9  |
| Alpena                   | 3.4  | 3.5  | 4.7  | 4.9  | 4.7  | 5.1  | 5.2  | 6.4  | 6.6  | 4.7  |
| Oscoda                   | 4.0  | 4.0  | 3.6  | 3.0  | 3.2  | 5.2  | 6.2  | 7.1  | 7.1  | 4.5  |
| Grindstone City          | 5.6  | 6.1  | 5.9  | 4.7  | 5.5  | 7.0  | 8.0  | 9.3  | 10.7 | 6.5  |
| Harbor Beach             | 3.6  | 2.9  | 3.2  | 2.8  | 3.5  | 4.9  | 6.6  | 6.5  | 6.7  | 4.3  |
| Lake Superior            |      |      |      |      |      |      |      |      |      |      |
| Marquette                | 10.9 | 10.9 | 11.4 | 10.9 | 8.3  | 11.2 | 13.0 | 11.9 | 7.0  | 11.1 |
| Ontonagon                | 12.5 | 11.5 | 14.1 | 14.0 | 10.1 | 11.1 | 15.9 | 11.9 | 13.7 | 12.6 |
| Black River Harbor       | 12.0 | 12.9 | 10.6 | 13.5 | 14.1 | 12.6 | 14.0 | 13.1 | 10.7 | 12.9 |

Table 9.—Sea lamprey incidence (lamprey per 100 fish) for chinook salmon and lake trout harvested by the charter fishery in the Michigan waters of the Great Lakes, 1990-98.

| Species/Year          | Lake     |       |          |
|-----------------------|----------|-------|----------|
|                       | Michigan | Huron | Superior |
| <b>Chinook salmon</b> |          |       |          |
| 1990                  | 0.5      | 18.6  | 0.0      |
| 1991                  | 0.3      | 13.9  | 8.0      |
| 1992                  | 0.2      | 13.6  | 0.0      |
| 1993                  | 0.1      | 7.6   | 0.0      |
| 1994                  | 0.3      | 7.1   | 0.0      |
| 1995                  | 0.3      | 6.2   | 3.0      |
| 1996                  | 0.1      | 3.9   | 0.0      |
| 1997                  | 0.2      | 4.7   | 0.0      |
| 1998                  | 0.4      | 5.2   | 0.0      |
| <b>Lake trout</b>     |          |       |          |
| 1990                  | 1.8      | 6.6   | 1.8      |
| 1991                  | 1.2      | 5.7   | 1.6      |
| 1992                  | 0.8      | 4.6   | 0.8      |
| 1993                  | 0.6      | 2.1   | 0.5      |
| 1994                  | 0.6      | 3.3   | 1.1      |
| 1995                  | 1.0      | 2.7   | 0.7      |
| 1996                  | 0.7      | 1.9   | 1.0      |
| 1997                  | 1.1      | 3.0   | 0.6      |
| 1998                  | 1.1      | 2.1   | 0.5      |

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Appendix 1.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Michigan City, Indiana (Lake Michigan, Michigan waters only) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |       |       |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct |        |
| Coho salmon         | 0.238                   | 8.384                        | 730   | 3,287 | 1,026 | 695   | 96    | 1     | 0   | 5,835  |
| Chinook salmon      | 0.013                   | 0.474                        | 27    | 136   | 36    | 81    | 35    | 14    | 1   | 330    |
| Rainbow trout       | 0.062                   | 2.170                        | 300   | 697   | 235   | 234   | 41    | 3     | 0   | 1,510  |
| Brown trout         | 0.004                   | 0.128                        | 2     | 44    | 19    | 15    | 8     | 1     | 0   | 89     |
| Lake trout          | 0.133                   | 4.697                        | 0     | 806   | 456   | 481   | 1,258 | 268   | 0   | 3,269  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0     | 0   | 0      |
| Lamprey on:         |                         |                              |       |       |       |       |       |       |     |        |
| Chinook salmon      |                         |                              | 0     | 2     | 0     | 0     | 0     | 0     | 0   | 2      |
| Lake trout          |                         |                              | 0     | 19    | 8     | 3     | 11    | 3     | 0   | 44     |
| Angler hours        |                         |                              | 1,642 | 8,906 | 3,936 | 3,951 | 5,018 | 1,021 | 54  | 24,528 |
| Angler trips        |                         |                              | 265   | 1,293 | 603   | 596   | 792   | 146   | 9   | 3,704  |
| Resident anglers    |                         |                              | 11    | 41    | 3     | 18    | 14    | 11    | 0   | 98     |
| Nonresident anglers |                         |                              | 254   | 1,252 | 600   | 578   | 778   | 135   | 9   | 3,606  |
| Charter excursions  |                         |                              | 49    | 232   | 115   | 120   | 151   | 27    | 2   | 696    |

Appendix 2.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at New Buffalo, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |     |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-----|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul | Aug | Sep | Oct |        |
| Coho salmon         | 0.175                   | 6.192                        | 134   | 150 | 21  | 13  | 4   | 0   | 0   | 322    |
| Chinook salmon      | 0.027                   | 0.962                        | 10    | 24  | 3   | 10  | 3   | 0   | 0   | 50     |
| Rainbow trout       | 0.049                   | 1.750                        | 37    | 26  | 8   | 15  | 5   | 0   | 0   | 91     |
| Brown trout         | 0.007                   | 0.231                        | 0     | 6   | 6   | 0   | 0   | 0   | 0   | 12     |
| Lake trout          | 0.037                   | 1.308                        | 0     | 22  | 11  | 2   | 31  | 2   | 0   | 68     |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |     |     |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Angler hours        |                         |                              | 311   | 493 | 356 | 358 | 294 | 30  | 0   | 1,842  |
| Angler trips        |                         |                              | 54    | 64  | 45  | 46  | 36  | 5   | 0   | 250    |
| Resident anglers    |                         |                              | 0     | 0   | 11  | 0   | 0   | 0   | 0   | 11     |
| Nonresident anglers |                         |                              | 54    | 64  | 34  | 46  | 36  | 5   | 0   | 239    |
| Charter excursions  |                         |                              | 12    | 15  | 7   | 9   | 8   | 1   | 0   | 52     |

Appendix 3.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at St. Joseph/Benton Harbor, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |        |       |       |       |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|--------|-------|-------|-------|-------|-----|--------|
|                     |                         |                              | Apr   | May    | Jun   | Jul   | Aug   | Sep   | Oct |        |
| Coho salmon         | 0.087                   | 2.926                        | 976   | 1,466  | 495   | 262   | 196   | 49    | 0   | 3,444  |
| Chinook salmon      | 0.054                   | 1.803                        | 63    | 772    | 205   | 459   | 419   | 204   | 0   | 2,122  |
| Rainbow trout       | 0.075                   | 2.519                        | 271   | 423    | 1,140 | 687   | 349   | 95    | 0   | 2,965  |
| Brown trout         | 0.006                   | 0.216                        | 11    | 90     | 74    | 46    | 24    | 8     | 1   | 254    |
| Lake trout          | 0.056                   | 1.872                        | 26    | 1,401  | 328   | 169   | 232   | 47    | 0   | 2,203  |
| Yellow perch        | 0.010                   | 0.325                        | 0     | 0      | 24    | 200   | 116   | 43    | 0   | 383    |
| Walleye             | 0.000                   | 0.000                        | 0     | 0      | 0     | 0     | 0     | 0     | 0   | 0      |
| Other               | 0.000                   | 0.003                        | 0     | 0      | 1     | 0     | 2     | 0     | 0   | 3      |
| Lamprey on:         |                         |                              |       |        |       |       |       |       |     |        |
| Chinook salmon      |                         |                              | 0     | 3      | 0     | 3     | 0     | 0     | 0   | 6      |
| Lake trout          |                         |                              | 0     | 25     | 3     | 1     | 1     | 0     | 0   | 30     |
| Angler hours        |                         |                              | 3,569 | 10,961 | 8,460 | 6,320 | 6,994 | 3,051 | 49  | 39,404 |
| Angler trips        |                         |                              | 517   | 1,468  | 1,185 | 923   | 1,027 | 440   | 7   | 5,567  |
| Resident anglers    |                         |                              | 273   | 639    | 398   | 372   | 368   | 167   | 1   | 2,218  |
| Nonresident anglers |                         |                              | 244   | 829    | 787   | 551   | 659   | 273   | 6   | 3,349  |
| Charter excursions  |                         |                              | 108   | 303    | 247   | 197   | 223   | 97    | 2   | 1,177  |

Appendix 4.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on the St. Joseph River, Michigan during 1998.

| Species             | Total catch per hour | Total catch per excursion | Month |       |       |       |     |     |     |     |       |       |       |       | Dec    | Season |     |
|---------------------|----------------------|---------------------------|-------|-------|-------|-------|-----|-----|-----|-----|-------|-------|-------|-------|--------|--------|-----|
|                     |                      |                           | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep   | Oct   | Nov   |       |        |        |     |
| Coho salmon         | 0.0073               | 0.2016                    | 0     | 0     | 30    | 0     | 0   | 0   | 0   | 0   | 0     | 0     | 44    | 74    | 4      | 0      | 152 |
| Chinook salmon      | 0.0067               | 0.1844                    | 5     | 0     | 2     | 2     | 0   | 0   | 0   | 0   | 0     | 0     | 78    | 51    | 1      | 0      | 139 |
| Rainbow trout       | 0.1233               | 3.3992                    | 110   | 355   | 351   | 113   | 0   | 16  | 2   | 6   | 45    | 576   | 231   | 758   | 231    | 2,563  |     |
| Brown trout         | 0.0166               | 0.4576                    | 5     | 47    | 190   | 51    | 0   | 0   | 0   | 0   | 2     | 33    | 15    | 2     | 345    |        |     |
| Lake trout          | 0.0000               | 0.0013                    | 0     | 0     | 1     | 0     | 0   | 0   | 0   | 0   | 0     | 0     | 0     | 0     | 0      | 0      | 1   |
| Yellow perch        | 0.0000               | 0.0000                    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0     | 0     | 0     | 0     | 0      | 0      | 0   |
| Walleye             | 0.0159               | 0.4377                    | 9     | 11    | 1     | 0     | 25  | 109 | 52  | 81  | 14    | 2     | 12    | 14    | 14     | 330    |     |
| Other               | 0.0054               | 0.1485                    | 0     | 1     | 8     | 9     | 4   | 38  | 5   | 13  | 6     | 20    | 8     | 112   |        |        |     |
| Angler hours        |                      |                           | 673   | 2,128 | 3,099 | 1,454 | 156 | 662 | 428 | 401 | 1,781 | 4,620 | 4,312 | 1,070 | 20,784 |        |     |
| Angler trips        |                      |                           | 91    | 300   | 422   | 201   | 17  | 78  | 54  | 54  | 247   | 645   | 611   | 152   | 2,872  |        |     |
| Resident anglers    |                      |                           | 37    | 103   | 161   | 85    | 4   | 26  | 13  | 21  | 81    | 225   | 244   | 72    | 1,072  |        |     |
| Nonresident anglers |                      |                           | 54    | 197   | 261   | 116   | 13  | 52  | 41  | 33  | 166   | 420   | 367   | 80    | 1,800  |        |     |
| Charter excursions  |                      |                           | 26    | 71    | 111   | 52    | 4   | 23  | 17  | 16  | 73    | 169   | 153   | 39    | 754    |        |     |



Appendix 5.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at South Haven, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |        |       |        |        |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|--------|-------|--------|--------|-------|-----|--------|
|                     |                         |                              | Apr   | May    | Jun   | Jul    | Aug    | Sep   | Oct |        |
| Coho salmon         | 0.010                   | 0.550                        | 75    | 97     | 22    | 69     | 136    | 40    | 5   | 444    |
| Chinook salmon      | 0.029                   | 1.635                        | 3     | 61     | 108   | 374    | 686    | 85    | 4   | 1,321  |
| Rainbow trout       | 0.009                   | 0.519                        | 14    | 51     | 86    | 146    | 98     | 18    | 6   | 419    |
| Brown trout         | 0.001                   | 0.038                        | 1     | 4      | 1     | 6      | 17     | 1     | 1   | 31     |
| Lake trout          | 0.037                   | 2.101                        | 8     | 120    | 134   | 472    | 939    | 25    | 0   | 1,698  |
| Yellow perch        | 0.557                   | 31.563                       | 4,137 | 11,475 | 2,147 | 3,692  | 2,668  | 1,384 | 0   | 25,503 |
| Walleye             | 0.000                   | 0.000                        | 0     | 0      | 0     | 0      | 0      | 0     | 0   | 0      |
| Other               | 0.000                   | 0.022                        | 3     | 0      | 0     | 13     | 0      | 2     | 0   | 18     |
| Lamprey on:         |                         |                              |       |        |       |        |        |       |     |        |
| Chinook salmon      |                         |                              | 0     | 0      | 0     | 1      | 0      | 0     | 0   | 1      |
| Lake trout          |                         |                              | 0     | 1      | 1     | 10     | 9      | 0     | 0   | 21     |
| Angler hours        |                         |                              | 4,940 | 8,810  | 6,736 | 10,154 | 12,873 | 2,193 | 78  | 45,784 |
| Angler trips        |                         |                              | 999   | 1,755  | 1,490 | 1,979  | 2,377  | 432   | 12  | 9,044  |
| Resident            |                         |                              | 533   | 1,011  | 806   | 1,092  | 1,414  | 253   | 12  | 5,121  |
| Nonresident anglers |                         |                              | 466   | 744    | 684   | 887    | 963    | 179   | 0   | 3,923  |
| Charter excursions  |                         |                              | 52    | 116    | 112   | 183    | 301    | 42    | 2   | 808    |

Appendix 6.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Saugatuck, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |       |       |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct |        |
| Coho salmon         | 0.035                   | 0.985                        | 26    | 292   | 67    | 110   | 73    | 78    | 2   | 648    |
| Chinook salmon      | 0.168                   | 4.804                        | 67    | 1,105 | 665   | 751   | 329   | 242   | 2   | 3,161  |
| Rainbow trout       | 0.037                   | 1.067                        | 11    | 236   | 176   | 201   | 32    | 33    | 13  | 702    |
| Brown trout         | 0.009                   | 0.264                        | 43    | 104   | 8     | 8     | 3     | 8     | 0   | 174    |
| Lake trout          | 0.148                   | 4.228                        | 0     | 775   | 733   | 810   | 394   | 69    | 1   | 2,782  |
| Yellow perch        | 0.002                   | 0.059                        | 0     | 0     | 39    | 0     | 0     | 0     | 0   | 39     |
| Walleye             | 0.000                   | 0.002                        | 0     | 1     | 0     | 0     | 0     | 0     | 0   | 1      |
| Other               | 0.000                   | 0.005                        | 0     | 0     | 0     | 0     | 1     | 1     | 1   | 3      |
| Lamprey on:         |                         |                              |       |       |       |       |       |       |     |        |
| Chinook salmon      |                         |                              | 0     | 4     | 3     | 0     | 2     | 0     | 0   | 9      |
| Lake trout          |                         |                              | 0     | 10    | 4     | 7     | 4     | 0     | 0   | 25     |
| Angler hours        |                         |                              | 463   | 5,520 | 4,295 | 4,170 | 2,559 | 1,706 | 58  | 18,771 |
| Angler trips        |                         |                              | 62    | 829   | 663   | 673   | 400   | 268   | 10  | 2,905  |
| Resident anglers    |                         |                              | 56    | 620   | 479   | 504   | 274   | 189   | 10  | 2,132  |
| Nonresident anglers |                         |                              | 6     | 209   | 184   | 169   | 126   | 79    | 0   | 773    |
| Charter excursions  |                         |                              | 15    | 179   | 152   | 148   | 93    | 68    | 3   | 658    |

Appendix 7.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Holland, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.022                   | 0.522                        | 4     | 21  | 8   | 33    | 20    | 26  | 8   | 120    |
| Chinook salmon      | 0.094                   | 2.243                        | 6     | 61  | 88  | 159   | 163   | 38  | 1   | 516    |
| Rainbow trout       | 0.020                   | 0.487                        | 0     | 3   | 7   | 59    | 29    | 6   | 8   | 112    |
| Brown trout         | 0.005                   | 0.117                        | 2     | 5   | 7   | 0     | 10    | 1   | 2   | 27     |
| Lake trout          | 0.115                   | 2.743                        | 0     | 72  | 116 | 189   | 217   | 37  | 0   | 631    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0     | 1     | 0   | 0   | 1      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 0     | 5     | 0   | 0   | 5      |
| Angler hours        |                         |                              | 71    | 594 | 877 | 1,389 | 1,810 | 605 | 120 | 5,466  |
| Angler trips        |                         |                              | 16    | 108 | 148 | 232   | 295   | 103 | 21  | 923    |
| Resident anglers    |                         |                              | 14    | 75  | 98  | 162   | 148   | 66  | 17  | 580    |
| Nonresident anglers |                         |                              | 2     | 33  | 50  | 70    | 147   | 37  | 4   | 343    |
| Charter excursion   |                         |                              | 5     | 27  | 35  | 55    | 77    | 25  | 6   | 230    |

Appendix 8.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Grand Haven, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |       |        |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-------|--------|-------|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul   | Aug    | Sep   | Oct |        |
| Coho salmon         | 0.024                   | 0.583                        | 16    | 137   | 25    | 171   | 335    | 384   | 0   | 1,068  |
| Chinook salmon      | 0.129                   | 3.096                        | 91    | 1,470 | 573   | 1,222 | 1,434  | 836   | 49  | 5,675  |
| Rainbow trout       | 0.018                   | 0.427                        | 8     | 109   | 80    | 253   | 109    | 186   | 38  | 783    |
| Brown trout         | 0.007                   | 0.161                        | 29    | 34    | 21    | 159   | 27     | 22    | 3   | 295    |
| Lake trout          | 0.102                   | 2.450                        | 0     | 682   | 626   | 1,228 | 1,777  | 178   | 0   | 4,491  |
| Yellow perch        | 0.002                   | 0.043                        | 0     | 0     | 67    | 12    | 0      | 0     | 0   | 79     |
| Walleye             | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0      | 0     | 0   | 0      |
| Other               | 0.000                   | 0.002                        | 0     | 0     | 0     | 0     | 1      | 3     | 0   | 4      |
| Lamprey on:         |                         |                              |       |       |       |       |        |       |     |        |
| Chinook salmon      |                         |                              | 3     | 4     | 0     | 1     | 5      | 4     | 0   | 17     |
| Lake trout          |                         |                              | 0     | 10    | 9     | 5     | 10     | 1     | 0   | 35     |
| Angler hours        |                         |                              | 548   | 7,222 | 5,836 | 8,901 | 14,095 | 7,136 | 248 | 43,986 |
| Angler trips        |                         |                              | 100   | 1,261 | 1,027 | 1,584 | 2,520  | 1,277 | 48  | 7,817  |
| Resident anglers    |                         |                              | 91    | 1,110 | 868   | 1,290 | 2,061  | 1,128 | 43  | 6,591  |
| Nonresident anglers |                         |                              | 9     | 151   | 159   | 294   | 459    | 149   | 5   | 1,226  |
| Charter excursions  |                         |                              | 26    | 308   | 237   | 372   | 589    | 290   | 11  | 1,833  |

Appendix 9.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Muskegon, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-------|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep   | Oct |        |
| Coho salmon         | 0.049                   | 1.278                        | 0     | 33  | 9   | 49    | 263   | 74    | 0   | 428    |
| Chinook salmon      | 0.087                   | 2.301                        | 0     | 35  | 36  | 239   | 381   | 80    | 0   | 771    |
| Rainbow trout       | 0.051                   | 1.343                        | 0     | 12  | 9   | 93    | 252   | 84    | 0   | 450    |
| Brown trout         | 0.003                   | 0.075                        | 0     | 1   | 2   | 8     | 12    | 2     | 0   | 25     |
| Lake trout          | 0.037                   | 0.973                        | 0     | 37  | 18  | 85    | 172   | 14    | 0   | 326    |
| Yellow perch        | 0.000                   | 0.003                        | 0     | 0   | 0   | 0     | 1     | 0     | 0   | 1      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0     | 0   | 0      |
| Other               | 0.000                   | 0.003                        | 0     | 0   | 0   | 0     | 1     | 0     | 0   | 1      |
| Lamprey on:         |                         |                              |       |     |     |       |       |       |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0     | 0     | 0     | 0   | 0      |
| Lake trout          |                         |                              | 0     | 1   | 0   | 1     | 0     | 0     | 0   | 2      |
| Angler hours        |                         |                              | 0     | 343 | 450 | 2,209 | 4,815 | 1,002 | 0   | 8,818  |
| Angler trips        |                         |                              | 0     | 71  | 92  | 340   | 733   | 186   | 0   | 1,422  |
| Resident anglers    |                         |                              | 0     | 65  | 90  | 265   | 516   | 133   | 0   | 1,069  |
| Nonresident anglers |                         |                              | 0     | 6   | 2   | 75    | 217   | 53    | 0   | 353    |
| Charter excursions  |                         |                              | 0     | 18  | 22  | 82    | 161   | 52    | 0   | 335    |

Appendix 10.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Whitehall/Montague, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.043                   | 1.229                        | 1     | 16  | 6   | 55    | 83    | 53  | 6   | 220    |
| Chinook salmon      | 0.093                   | 2.687                        | 5     | 118 | 36  | 171   | 124   | 27  | 0   | 481    |
| Rainbow trout       | 0.046                   | 1.318                        | 11    | 15  | 5   | 64    | 85    | 52  | 4   | 236    |
| Brown trout         | 0.004                   | 0.106                        | 0     | 5   | 0   | 5     | 5     | 4   | 0   | 19     |
| Lake trout          | 0.027                   | 0.771                        | 0     | 37  | 17  | 34    | 33    | 17  | 0   | 138    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0     | 1     | 0   | 0   | 1      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Angler hours        |                         |                              | 92    | 558 | 496 | 1,589 | 1,635 | 743 | 41  | 5,154  |
| Angler trips        |                         |                              | 12    | 93  | 86  | 225   | 263   | 117 | 8   | 804    |
| Resident anglers    |                         |                              | 12    | 65  | 61  | 101   | 174   | 78  | 5   | 496    |
| Nonresident anglers |                         |                              | 0     | 28  | 25  | 124   | 89    | 39  | 3   | 308    |
| Charter excursions  |                         |                              | 6     | 22  | 17  | 47    | 62    | 23  | 2   | 179    |

Appendix 11.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Pentwater, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.036                   | 0.735                        | 0     | 19  | 18  | 45    | 131   | 17  | 0   | 230    |
| Chinook salmon      | 0.151                   | 3.048                        | 2     | 177 | 111 | 349   | 297   | 18  | 0   | 954    |
| Rainbow trout       | 0.076                   | 1.527                        | 0     | 11  | 46  | 131   | 249   | 41  | 0   | 478    |
| Brown trout         | 0.010                   | 0.195                        | 27    | 5   | 8   | 13    | 7     | 1   | 0   | 61     |
| Lake trout          | 0.074                   | 1.505                        | 3     | 91  | 121 | 150   | 102   | 4   | 0   | 471    |
| Yellow perch        | 0.003                   | 0.054                        | 0     | 0   | 17  | 0     | 0     | 0   | 0   | 17     |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 1   | 0     | 0     | 0   | 0   | 1      |
| Lake trout          |                         |                              | 0     | 1   | 1   | 1     | 1     | 0   | 0   | 4      |
| Angler hours        |                         |                              | 73    | 430 | 997 | 1,849 | 2,661 | 317 | 0   | 6,325  |
| Angler trips        |                         |                              | 14    | 74  | 162 | 315   | 435   | 60  | 0   | 1,060  |
| Resident anglers    |                         |                              | 14    | 63  | 152 | 251   | 301   | 54  | 0   | 835    |
| Nonresident anglers |                         |                              | 0     | 11  | 10  | 64    | 134   | 6   | 0   | 225    |
| Charter excursions  |                         |                              | 6     | 26  | 47  | 93    | 122   | 19  | 0   | 313    |

Appendix 12.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Ludington, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |       |        |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-------|--------|-------|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul   | Aug    | Sep   | Oct |        |
| Coho salmon         | 0.037                   | 1.094                        | 5     | 23    | 85    | 265   | 848    | 302   | 14  | 1,542  |
| Chinook salmon      | 0.110                   | 3.226                        | 3     | 494   | 513   | 1,266 | 1,827  | 429   | 16  | 4,548  |
| Rainbow trout       | 0.067                   | 1.972                        | 1     | 88    | 468   | 619   | 1,168  | 415   | 22  | 2,781  |
| Brown trout         | 0.007                   | 0.219                        | 106   | 25    | 26    | 63    | 80     | 8     | 1   | 309    |
| Lake trout          | 0.054                   | 1.577                        | 0     | 286   | 487   | 654   | 707    | 90    | 0   | 2,224  |
| Yellow perch        | 0.000                   | 0.001                        | 0     | 0     | 0     | 0     | 2      | 0     | 0   | 2      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0      | 0     | 0   | 0      |
| Other               | 0.000                   | 0.006                        | 0     | 2     | 0     | 2     | 4      | 0     | 1   | 9      |
| Lamprey on:         |                         |                              |       |       |       |       |        |       |     |        |
| Chinook salmon      |                         |                              | 0     | 0     | 3     | 11    | 12     | 3     | 0   | 29     |
| Lake trout          |                         |                              | 0     | 2     | 4     | 12    | 8      | 0     | 0   | 26     |
| Angler hours        |                         |                              | 326   | 2,055 | 5,796 | 9,927 | 17,880 | 5,156 | 246 | 41,384 |
| Angler trips        |                         |                              | 50    | 315   | 821   | 1,437 | 2,454  | 726   | 41  | 5,844  |
| Resident anglers    |                         |                              | 50    | 273   | 665   | 1,209 | 1,897  | 561   | 38  | 4,693  |
| Nonresident anglers |                         |                              | 0     | 42    | 156   | 228   | 557    | 165   | 3   | 1,151  |
| Charter excursions  |                         |                              | 13    | 81    | 197   | 337   | 600    | 172   | 10  | 1,410  |

Appendix 13.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Manistee, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |       |        |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-------|--------|-------|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul   | Aug    | Sep   | Oct |        |
| Coho salmon         | 0.022                   | 0.630                        | 0     | 16    | 83    | 73    | 262    | 147   | 7   | 588    |
| Chinook salmon      | 0.127                   | 3.667                        | 7     | 333   | 323   | 734   | 1,718  | 298   | 12  | 3,425  |
| Rainbow trout       | 0.059                   | 1.712                        | 9     | 116   | 575   | 306   | 443    | 140   | 10  | 1,599  |
| Brown trout         | 0.015                   | 0.437                        | 200   | 21    | 58    | 47    | 64     | 18    | 0   | 408    |
| Lake trout          | 0.062                   | 1.785                        | 28    | 370   | 364   | 430   | 416    | 59    | 0   | 1,667  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0      | 0     | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0      | 0     | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0      | 0     | 0   | 0      |
| Lamprey on:         |                         |                              |       |       |       |       |        |       |     |        |
| Chinook salmon      |                         |                              | 0     | 3     | 1     | 7     | 25     | 1     | 0   | 37     |
| Lake trout          |                         |                              | 0     | 16    | 9     | 5     | 12     | 2     | 0   | 44     |
| Angler hours        |                         |                              | 704   | 2,083 | 4,427 | 5,841 | 11,134 | 2,727 | 107 | 27,023 |
| Angler trips        |                         |                              | 106   | 332   | 646   | 874   | 1,636  | 444   | 19  | 4,057  |
| Resident anglers    |                         |                              | 96    | 279   | 595   | 765   | 1,411  | 380   | 19  | 3,545  |
| Nonresident anglers |                         |                              | 10    | 53    | 55    | 109   | 225    | 64    | 0   | 516    |
| Charter excursions  |                         |                              | 27    | 76    | 140   | 203   | 375    | 108   | 5   | 934    |

Appendix 14.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Onekama, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.029                   | 0.846                        | 0     | 0   | 48  | 12    | 33    | 44  | 0   | 137    |
| Chinook salmon      | 0.123                   | 3.605                        | 0     | 0   | 56  | 225   | 273   | 30  | 0   | 584    |
| Rainbow trout       | 0.058                   | 1.716                        | 0     | 0   | 99  | 54    | 72    | 53  | 0   | 278    |
| Brown trout         | 0.005                   | 0.148                        | 0     | 0   | 0   | 9     | 13    | 2   | 0   | 24     |
| Lake trout          | 0.078                   | 2.290                        | 0     | 0   | 75  | 179   | 117   | 0   | 0   | 371    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Angler hours        |                         |                              | 0     | 0   | 660 | 1,699 | 1,715 | 683 | 0   | 4,757  |
| Angler trips        |                         |                              | 0     | 0   | 85  | 240   | 239   | 115 | 0   | 679    |
| Resident anglers    |                         |                              | 0     | 0   | 70  | 197   | 208   | 80  | 0   | 555    |
| Nonresident anglers |                         |                              | 0     | 0   | 15  | 43    | 31    | 35  | 0   | 124    |
| Charter excursions  |                         |                              | 0     | 0   | 21  | 54    | 59    | 28  | 0   | 162    |

Appendix 15.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Frankfort/Elberta, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |       |       |        |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-------|-------|--------|-------|-----|--------|
|                     |                         |                              | Apr   | May | Jun   | Jul   | Aug    | Sep   | Oct |        |
| Coho salmon         | 0.058                   | 1.524                        | 0     | 4   | 5     | 82    | 743    | 714   | 5   | 1,553  |
| Chinook salmon      | 0.062                   | 1.635                        | 0     | 89  | 183   | 331   | 914    | 145   | 4   | 1,666  |
| Rainbow trout       | 0.016                   | 0.429                        | 0     | 9   | 118   | 98    | 151    | 52    | 9   | 437    |
| Brown trout         | 0.004                   | 0.111                        | 4     | 15  | 8     | 49    | 28     | 9     | 0   | 113    |
| Lake trout          | 0.171                   | 4.494                        | 0     | 246 | 1,162 | 1,537 | 1,420  | 214   | 0   | 4,579  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0     | 0     | 0      | 0     | 0   | 0      |
| Walleye             | 0.000                   | 0.007                        | 0     | 0   | 0     | 7     | 0      | 0     | 0   | 7      |
| Other               | 0.000                   | 0.007                        | 0     | 0   | 1     | 3     | 2      | 1     | 0   | 7      |
| Lamprey on:         |                         |                              |       |     |       |       |        |       |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0     | 0     | 3      | 0     | 0   | 3      |
| Lake trout          |                         |                              | 0     | 1   | 8     | 3     | 8      | 0     | 0   | 20     |
| Angler hours        |                         |                              | 16    | 981 | 3,742 | 6,385 | 11,531 | 4,058 | 129 | 26,842 |
| Angler trips        |                         |                              | 2     | 171 | 608   | 1,045 | 1,834  | 677   | 28  | 4,365  |
| Resident anglers    |                         |                              | 2     | 160 | 501   | 822   | 1,489  | 556   | 15  | 3,545  |
| Nonresident anglers |                         |                              | 0     | 11  | 107   | 223   | 345    | 121   | 13  | 820    |
| Charter excursions  |                         |                              | 1     | 43  | 138   | 234   | 432    | 163   | 8   | 1,019  |

Appendix 16.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Leland, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.004                   | 0.095                        | 5     | 4     | 40    | 14    | 7     | 0   | 5   | 75     |
| Chinook salmon      | 0.115                   | 2.709                        | 22    | 296   | 966   | 778   | 66    | 0   | 4   | 2,132  |
| Rainbow trout       | 0.015                   | 0.355                        | 6     | 96    | 105   | 59    | 4     | 0   | 9   | 279    |
| Brown trout         | 0.006                   | 0.147                        | 60    | 10    | 29    | 16    | 1     | 0   | 0   | 116    |
| Lake trout          | 0.205                   | 4.839                        | 315   | 877   | 1,416 | 860   | 340   | 0   | 0   | 3,808  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0      |
| Other               | 0.001                   | 0.017                        | 1     | 1     | 4     | 6     | 1     | 0   | 0   | 13     |
| Lamprey on:         |                         |                              |       |       |       |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 1     | 3     | 2     | 0     | 0   | 0   | 6      |
| Lake trout          |                         |                              | 7     | 11    | 9     | 18    | 7     | 0   | 0   | 52     |
| Angler hours        |                         |                              | 968   | 3,136 | 7,280 | 5,577 | 1,352 | 90  | 129 | 18,532 |
| Angler trips        |                         |                              | 185   | 537   | 1,324 | 1,051 | 262   | 18  | 28  | 3,405  |
| Resident anglers    |                         |                              | 157   | 444   | 888   | 736   | 178   | 14  | 15  | 2,432  |
| Nonresident anglers |                         |                              | 28    | 93    | 436   | 315   | 84    | 4   | 13  | 973    |
| Charter excursions  |                         |                              | 45    | 118   | 298   | 252   | 62    | 4   | 8   | 787    |

Appendix 17.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on West Grand Traverse Bay (grids 715, 815, and 915), Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.004                   | 0.058                        | 0     | 0   | 0   | 0     | 6     | 10  | 0   | 16     |
| Chinook salmon      | 0.045                   | 0.748                        | 1     | 1   | 1   | 41    | 74    | 87  | 0   | 205    |
| Rainbow trout       | 0.006                   | 0.102                        | 0     | 2   | 7   | 14    | 5     | 0   | 0   | 28     |
| Brown trout         | 0.008                   | 0.128                        | 2     | 2   | 7   | 13    | 9     | 2   | 0   | 35     |
| Lake trout          | 0.264                   | 4.350                        | 34    | 114 | 297 | 425   | 258   | 64  | 0   | 1,192  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Other               | 0.004                   | 0.058                        | 0     | 3   | 1   | 4     | 7     | 1   | 0   | 16     |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 3   | 1   | 11    | 2     | 2   | 0   | 19     |
| Angler hours        |                         |                              | 66    | 224 | 675 | 1,462 | 1,115 | 977 | 0   | 4,519  |
| Angler trips        |                         |                              | 19    | 61  | 168 | 330   | 277   | 218 | 0   | 1,073  |
| Resident anglers    |                         |                              | 7     | 56  | 112 | 209   | 209   | 127 | 0   | 720    |
| Nonresident anglers |                         |                              | 12    | 5   | 56  | 121   | 68    | 91  | 0   | 353    |
| Charter excursions  |                         |                              | 5     | 15  | 42  | 84    | 75    | 53  | 0   | 274    |

Appendix 18.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on East Grand Traverse Bay (grids 716, 816, and 916), Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.001                   | 0.023                        | 0     | 0   | 0   | 0     | 1     | 5   | 0   | 6      |
| Chinook salmon      | 0.052                   | 0.807                        | 0     | 0   | 0   | 6     | 63    | 144 | 0   | 213    |
| Rainbow trout       | 0.003                   | 0.053                        | 0     | 2   | 2   | 6     | 4     | 0   | 0   | 14     |
| Brown trout         | 0.008                   | 0.129                        | 0     | 2   | 7   | 20    | 0     | 5   | 0   | 34     |
| Lake trout          | 0.214                   | 3.322                        | 0     | 104 | 199 | 233   | 287   | 54  | 0   | 877    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.002                   | 0.038                        | 0     | 0   | 0   | 0     | 10    | 0   | 0   | 10     |
| Other               | 0.001                   | 0.023                        | 0     | 0   | 3   | 0     | 0     | 3   | 0   | 6      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 2   | 0   | 0     | 0     | 0   | 0   | 2      |
| Angler hours        |                         |                              | 0     | 218 | 627 | 1,119 | 1,344 | 790 | 0   | 4,098  |
| Angler trips        |                         |                              | 0     | 61  | 168 | 285   | 335   | 197 | 0   | 1,046  |
| Resident anglers    |                         |                              | 0     | 45  | 136 | 176   | 215   | 148 | 0   | 720    |
| Nonresident anglers |                         |                              | 0     | 16  | 32  | 109   | 120   | 49  | 0   | 326    |
| Charter excursions  |                         |                              | 0     | 16  | 41  | 73    | 84    | 50  | 0   | 264    |

Appendix 19.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Charlevoix, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.001                   | 0.022                        | 0     | 0   | 3   | 1     | 3     | 0   | 0   | 7      |
| Chinook salmon      | 0.017                   | 0.387                        | 0     | 1   | 0   | 44    | 66    | 12  | 0   | 123    |
| Rainbow trout       | 0.002                   | 0.053                        | 0     | 0   | 6   | 5     | 6     | 0   | 0   | 17     |
| Brown trout         | 0.001                   | 0.019                        | 0     | 1   | 1   | 4     | 0     | 0   | 0   | 6      |
| Lake trout          | 0.230                   | 5.242                        | 0     | 57  | 203 | 536   | 800   | 71  | 0   | 1,667  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 4     | 14    | 0   | 0   | 18     |
| Angler hours        |                         |                              | 0     | 145 | 745 | 1,593 | 4,204 | 550 | 0   | 7,237  |
| Angler trips        |                         |                              | 0     | 36  | 161 | 399   | 768   | 131 | 0   | 1,495  |
| Resident anglers    |                         |                              | 0     | 26  | 65  | 208   | 435   | 83  | 0   | 817    |
| Nonresident anglers |                         |                              | 0     | 10  | 96  | 191   | 333   | 48  | 0   | 678    |
| Charter excursions  |                         |                              | 0     | 8   | 38  | 90    | 149   | 33  | 0   | 318    |

Appendix 20.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Petoskey/Harbor Springs, Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |     |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-----|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul | Aug | Sep | Oct |        |
| Coho salmon         | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Chinook salmon      | 0.057                   | 0.646                        | 0     | 1   | 0   | 8   | 22  | 20  | 0   | 51     |
| Rainbow trout       | 0.008                   | 0.089                        | 0     | 1   | 6   | 0   | 0   | 0   | 0   | 7      |
| Brown trout         | 0.004                   | 0.051                        | 0     | 1   | 0   | 2   | 1   | 0   | 0   | 4      |
| Lake trout          | 0.247                   | 2.797                        | 0     | 17  | 51  | 83  | 67  | 3   | 0   | 221    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Other               | 0.001                   | 0.013                        | 0     | 0   | 0   | 0   | 0   | 1   | 0   | 1      |
| Lamprey on:         |                         |                              |       |     |     |     |     |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0   | 2   | 1   | 0   | 3      |
| Lake trout          |                         |                              | 0     | 0   | 3   | 0   | 5   | 1   | 0   | 9      |
| Angler hours        |                         |                              | 0     | 46  | 168 | 249 | 280 | 152 | 0   | 895    |
| Angler trips        |                         |                              | 0     | 12  | 40  | 65  | 69  | 38  | 0   | 224    |
| Resident anglers    |                         |                              | 0     | 8   | 28  | 34  | 29  | 14  | 0   | 113    |
| Nonresident anglers |                         |                              | 0     | 4   | 12  | 31  | 40  | 24  | 0   | 111    |
| Charter excursions  |                         |                              | 0     | 6   | 16  | 21  | 21  | 15  | 0   | 79     |



Appendix 21.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Little Bay de Noc (grids 206 and 306), Michigan (Lake Michigan) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |     |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-----|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul | Aug | Sep | Oct |        |
| Coho salmon         | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Chinook salmon      | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Rainbow trout       | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Brown trout         | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lake trout          | 0.002                   | 0.026                        | 0     | 0   | 0   | 0   | 5   | 0   | 0   | 5      |
| Yellow perch        | 0.014                   | 0.221                        | 0     | 0   | 0   | 0   | 28  | 14  | 0   | 42     |
| Walleye             | 0.406                   | 6.300                        | 0     | 220 | 209 | 104 | 138 | 254 | 272 | 1,197  |
| Other               | 0.003                   | 0.042                        | 0     | 2   | 0   | 6   | 0   | 0   | 0   | 8      |
| Lamprey on:         |                         |                              |       |     |     |     |     |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Angler hours        |                         |                              | 0     | 580 | 623 | 280 | 402 | 527 | 533 | 2,945  |
| Angler trips        |                         |                              | 0     | 90  | 100 | 56  | 60  | 79  | 70  | 455    |
| Resident anglers    |                         |                              | 0     | 44  | 47  | 27  | 15  | 15  | 64  | 212    |
| Nonresident anglers |                         |                              | 0     | 46  | 53  | 29  | 45  | 64  | 6   | 243    |
| Charter excursions  |                         |                              | 0     | 36  | 40  | 19  | 26  | 37  | 32  | 190    |

Appendix 22.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Rogers City, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |     |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-----|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul | Aug | Sep | Oct |        |
| Coho salmon         | 0.008                   | 0.122                        | 0     | 0   | 0   | 0   | 17  | 0   | 0   | 17     |
| Chinook salmon      | 0.294                   | 4.439                        | 0     | 0   | 8   | 212 | 328 | 69  | 0   | 617    |
| Rainbow trout       | 0.008                   | 0.115                        | 0     | 0   | 2   | 7   | 7   | 0   | 0   | 16     |
| Brown trout         | 0.004                   | 0.058                        | 0     | 0   | 0   | 4   | 4   | 0   | 0   | 8      |
| Lake trout          | 0.045                   | 0.683                        | 0     | 0   | 5   | 79  | 11  | 0   | 0   | 95     |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Walleye             | 0.001                   | 0.014                        | 0     | 0   | 0   | 1   | 1   | 0   | 0   | 2      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |     |     |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 1   | 18  | 21  | 3   | 0   | 43     |
| Lake trout          |                         |                              | 0     | 0   | 0   | 10  | 1   | 0   | 0   | 11     |
| Angler hours        |                         |                              | 0     | 0   | 32  | 783 | 990 | 293 | 0   | 2,098  |
| Angler trips        |                         |                              | 0     | 0   | 8   | 180 | 223 | 68  | 0   | 479    |
| Resident anglers    |                         |                              | 0     | 0   | 8   | 135 | 134 | 48  | 0   | 325    |
| Nonresident anglers |                         |                              | 0     | 0   | 0   | 45  | 89  | 20  | 0   | 154    |
| Charter excursions  |                         |                              | 0     | 0   | 3   | 53  | 65  | 18  | 0   | 139    |

Appendix 23.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Rockport, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |     |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-----|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul | Aug   | Sep | Oct |        |
| Coho salmon         | 0.005                   | 0.125                        | 0     | 0   | 0   | 0   | 14    | 0   | 0   | 14     |
| Chinook salmon      | 0.219                   | 5.009                        | 0     | 2   | 21  | 97  | 441   | 0   | 0   | 561    |
| Rainbow trout       | 0.002                   | 0.045                        | 0     | 0   | 1   | 1   | 3     | 0   | 0   | 5      |
| Brown trout         | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0     | 0   | 0   | 0      |
| Lake trout          | 0.099                   | 2.250                        | 0     | 1   | 37  | 58  | 156   | 0   | 0   | 252    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0     | 0   | 0   | 0      |
| Walleye             | 0.001                   | 0.018                        | 0     | 0   | 0   | 1   | 1     | 0   | 0   | 2      |
| Other               | 0.000                   | 0.009                        | 0     | 0   | 1   | 0   | 0     | 0   | 0   | 1      |
| Lamprey on:         |                         |                              |       |     |     |     |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 6   | 11  | 50    | 0   | 0   | 67     |
| Lake trout          |                         |                              | 0     | 0   | 15  | 5   | 4     | 0   | 0   | 24     |
| Angler hours        |                         |                              | 0     | 18  | 120 | 494 | 1,926 | 0   | 0   | 2,558  |
| Angler trips        |                         |                              | 0     | 3   | 24  | 81  | 308   | 0   | 0   | 416    |
| Resident anglers    |                         |                              | 0     | 0   | 2   | 45  | 244   | 0   | 0   | 291    |
| Nonresident anglers |                         |                              | 0     | 3   | 22  | 36  | 64    | 0   | 0   | 125    |
| Charter excursions  |                         |                              | 0     | 1   | 7   | 22  | 82    | 0   | 0   | 112    |

Appendix 24.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Alpena, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Chinook salmon      | 0.226                   | 4.247                        | 0     | 0   | 24  | 243   | 377   | 44  | 0   | 688    |
| Rainbow trout       | 0.011                   | 0.198                        | 0     | 0   | 0   | 24    | 8     | 0   | 0   | 32     |
| Brown trout         | 0.015                   | 0.290                        | 0     | 8   | 0   | 28    | 6     | 3   | 2   | 47     |
| Lake trout          | 0.101                   | 1.889                        | 0     | 33  | 47  | 152   | 65    | 9   | 0   | 306    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.042                   | 0.790                        | 0     | 88  | 38  | 1     | 1     | 0   | 0   | 128    |
| Other               | 0.001                   | 0.019                        | 0     | 0   | 0   | 3     | 0     | 0   | 0   | 3      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 20    | 16    | 0   | 0   | 36     |
| Lake trout          |                         |                              | 0     | 0   | 1   | 5     | 1     | 0   | 0   | 7      |
| Angler hours        |                         |                              | 0     | 177 | 196 | 1,102 | 1,356 | 205 | 3   | 3,039  |
| Angler trips        |                         |                              | 0     | 41  | 39  | 178   | 234   | 40  | 1   | 533    |
| Resident anglers    |                         |                              | 0     | 35  | 32  | 168   | 178   | 35  | 1   | 449    |
| Nonresident anglers |                         |                              | 0     | 6   | 7   | 13    | 56    | 5   | 0   | 87     |
| Charter excursions  |                         |                              | 0     | 14  | 11  | 54    | 70    | 12  | 1   | 162    |

Appendix 25.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Harrisville, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.009                   | 0.151                        | 0     | 0   | 0   | 0     | 25    | 11  | 0   | 36     |
| Chinook salmon      | 0.145                   | 2.454                        | 0     | 29  | 65  | 156   | 283   | 51  | 0   | 584    |
| Rainbow trout       | 0.020                   | 0.345                        | 0     | 0   | 10  | 39    | 30    | 3   | 0   | 82     |
| Brown trout         | 0.022                   | 0.370                        | 0     | 0   | 63  | 1     | 24    | 0   | 0   | 88     |
| Lake trout          | 0.175                   | 2.954                        | 0     | 51  | 140 | 260   | 220   | 32  | 0   | 703    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.008                        | 0     | 0   | 0   | 0     | 2     | 0   | 0   | 2      |
| Other               | 0.002                   | 0.034                        | 0     | 2   | 0   | 0     | 6     | 0   | 0   | 8      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 1   | 3   | 7     | 10    | 3   | 0   | 24     |
| Lake trout          |                         |                              | 0     | 0   | 4   | 7     | 4     | 2   | 0   | 17     |
| Angler hours        |                         |                              | 0     | 186 | 515 | 1,114 | 1,890 | 324 | 0   | 4,029  |
| Angler trips        |                         |                              | 0     | 33  | 97  | 215   | 374   | 65  | 0   | 784    |
| Resident anglers    |                         |                              | 0     | 30  | 88  | 211   | 349   | 65  | 0   | 743    |
| Nonresident anglers |                         |                              | 0     | 3   | 9   | 4     | 25    | 0   | 0   | 41     |
| Charter excursions  |                         |                              | 0     | 10  | 35  | 70    | 104   | 19  | 0   | 238    |

Appendix 26.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Oscoda, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |       |       |       |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-------|-------|-------|-------|-----|--------|
|                     |                         |                              | Apr   | May | Jun   | Jul   | Aug   | Sep   | Oct |        |
| Coho salmon         | 0.004                   | 0.073                        | 0     | 0   | 0     | 2     | 5     | 0     | 40  | 47     |
| Chinook salmon      | 0.189                   | 3.511                        | 29    | 54  | 148   | 443   | 997   | 590   | 0   | 2,261  |
| Rainbow trout       | 0.016                   | 0.298                        | 1     | 4   | 32    | 61    | 69    | 23    | 2   | 192    |
| Brown trout         | 0.009                   | 0.165                        | 2     | 2   | 73    | 8     | 18    | 2     | 1   | 106    |
| Lake trout          | 0.164                   | 3.053                        | 54    | 119 | 554   | 619   | 595   | 25    | 0   | 1,966  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0     | 0     | 0     | 0     | 0   | 0      |
| Walleye             | 0.002                   | 0.037                        | 0     | 11  | 0     | 3     | 7     | 3     | 0   | 24     |
| Other               | 0.001                   | 0.011                        | 0     | 0   | 1     | 3     | 2     | 1     | 0   | 7      |
| Lamprey on:         |                         |                              |       |     |       |       |       |       |     |        |
| Chinook salmon      |                         |                              | 0     | 6   | 6     | 12    | 50    | 18    | 0   | 92     |
| Lake trout          |                         |                              | 0     | 3   | 9     | 7     | 9     | 1     | 0   | 29     |
| Angler hours        |                         |                              | 144   | 593 | 1,587 | 2,827 | 4,325 | 2,374 | 144 | 11,994 |
| Angler trips        |                         |                              | 24    | 99  | 271   | 501   | 737   | 401   | 24  | 2,057  |
| Resident anglers    |                         |                              | 20    | 88  | 242   | 455   | 659   | 359   | 20  | 1,843  |
| Nonresident anglers |                         |                              | 4     | 11  | 29    | 46    | 134   | 42    | 4   | 270    |
| Charter excursions  |                         |                              | 7     | 33  | 84    | 147   | 227   | 137   | 9   | 644    |

Appendix 27.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Saginaw Bay (Port Austin to Tawas), Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |       |       |       |       |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-------|-------|-------|-------|-----|--------|
|                     |                         |                              | Apr   | May | Jun   | Jul   | Aug   | Sep   | Oct |        |
| Coho salmon         | 0.001                   | 0.035                        | 0     | 9   | 0     | 7     | 0     | 0     | 0   | 16     |
| Chinook salmon      | 0.038                   | 1.070                        | 4     | 69  | 38    | 171   | 156   | 50    | 0   | 488    |
| Rainbow trout       | 0.006                   | 0.173                        | 6     | 17  | 8     | 25    | 15    | 8     | 0   | 79     |
| Brown trout         | 0.004                   | 0.110                        | 3     | 0   | 41    | 3     | 3     | 0     | 0   | 50     |
| Lake trout          | 0.027                   | 0.743                        | 0     | 108 | 79    | 40    | 97    | 15    | 0   | 339    |
| Yellow perch        | 0.130                   | 3.627                        | 0     | 49  | 0     | 451   | 326   | 812   | 16  | 1,654  |
| Walleye             | 0.179                   | 4.991                        | 2     | 2   | 228   | 1,414 | 596   | 34    | 0   | 2,276  |
| Other               | 0.018                   | 0.507                        | 0     | 0   | 46    | 139   | 46    | 0     | 0   | 231    |
| Lamprey on:         |                         |                              |       |     |       |       |       |       |     |        |
| Chinook salmon      |                         |                              | 1     | 5   | 3     | 6     | 6     | 1     | 0   | 22     |
| Lake trout          |                         |                              | 0     | 5   | 2     | 2     | 3     | 3     | 0   | 15     |
| Angler hours        |                         |                              | 36    | 706 | 1,336 | 5,914 | 3,425 | 1,258 | 20  | 12,694 |
| Angler trips        |                         |                              | 8     | 123 | 249   | 1,037 | 614   | 222   | 4   | 2,257  |
| Resident anglers    |                         |                              | 8     | 114 | 201   | 947   | 574   | 221   | 0   | 2,065  |
| Nonresident anglers |                         |                              | 0     | 9   | 48    | 90    | 40    | 1     | 4   | 192    |
| Charter excursions  |                         |                              | 4     | 33  | 65    | 201   | 126   | 26    | 1   | 456    |

Appendix 28.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Grindstone City, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.001                   | 0.025                        | 0     | 12    | 2     | 1     | 0     | 0   | 0   | 15     |
| Chinook salmon      | 0.209                   | 4.293                        | 1     | 503   | 220   | 1,115 | 726   | 58  | 0   | 2,623  |
| Rainbow trout       | 0.012                   | 0.241                        | 0     | 32    | 73    | 32    | 5     | 5   | 0   | 147    |
| Brown trout         | 0.004                   | 0.088                        | 0     | 47    | 4     | 3     | 0     | 0   | 0   | 54     |
| Lake trout          | 0.294                   | 6.039                        | 0     | 910   | 1,172 | 627   | 818   | 163 | 0   | 3,690  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.004                   | 0.077                        | 0     | 0     | 0     | 15    | 29    | 3   | 0   | 47     |
| Other               | 0.001                   | 0.028                        | 0     | 10    | 6     | 0     | 0     | 1   | 0   | 17     |
| Lamprey on:         |                         |                              |       |       |       |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 14    | 9     | 36    | 18    | 2   | 0   | 79     |
| Lake trout          |                         |                              | 0     | 7     | 17    | 11    | 3     | 3   | 0   | 41     |
| Angler hours        |                         |                              | 17    | 2,760 | 3,068 | 3,090 | 3,107 | 492 | 0   | 12,534 |
| Angler trips        |                         |                              | 5     | 481   | 533   | 576   | 558   | 85  | 0   | 2,238  |
| Resident anglers    |                         |                              | 5     | 423   | 520   | 547   | 512   | 84  | 0   | 2,091  |
| Nonresident anglers |                         |                              | 0     | 58    | 13    | 29    | 46    | 1   | 0   | 147    |
| Charter excursions  |                         |                              | 2     | 128   | 143   | 156   | 155   | 27  | 0   | 611    |

Appendix 29.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Harbor Beach, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |     |     |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-----|-----|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May   | Jun | Jul | Aug   | Sep | Oct |        |
| Coho salmon         | 0.004                   | 0.095                        | 0     | 17    | 1   | 0   | 3     | 0   | 0   | 21     |
| Chinook salmon      | 0.133                   | 3.231                        | 0     | 110   | 19  | 203 | 311   | 71  | 0   | 714    |
| Rainbow trout       | 0.010                   | 0.235                        | 0     | 18    | 3   | 15  | 16    | 0   | 0   | 52     |
| Brown trout         | 0.003                   | 0.068                        | 0     | 5     | 1   | 3   | 6     | 0   | 0   | 15     |
| Lake trout          | 0.127                   | 3.100                        | 0     | 202   | 87  | 91  | 302   | 3   | 0   | 685    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0     | 0   | 0   | 0     | 0   | 0   | 0      |
| Walleye             | 0.001                   | 0.032                        | 0     | 0     | 0   | 0   | 7     | 0   | 0   | 7      |
| Other               | 0.001                   | 0.023                        | 0     | 0     | 1   | 2   | 2     | 0   | 0   | 5      |
| Lamprey on:         |                         |                              |       |       |     |     |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 11    | 3   | 1   | 21    | 1   | 0   | 37     |
| Lake trout          |                         |                              | 0     | 2     | 5   | 0   | 11    | 0   | 0   | 18     |
| Angler hours        |                         |                              | 20    | 1,047 | 301 | 785 | 2,653 | 575 | 0   | 5,381  |
| Angler trips        |                         |                              | 4     | 186   | 59  | 134 | 423   | 105 | 0   | 911    |
| Resident anglers    |                         |                              | 4     | 185   | 58  | 121 | 395   | 91  | 0   | 854    |
| Nonresident anglers |                         |                              | 0     | 1     | 1   | 13  | 28    | 14  | 0   | 57     |
| Charter excursions  |                         |                              | 1     | 42    | 17  | 37  | 96    | 28  | 0   | 221    |

Appendix 30.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Port Sanilac, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |       |       |     |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-------|-------|-----|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May   | Jun   | Jul | Aug | Sep | Oct |        |
| Coho salmon         | 0.004                   | 0.104                        | 1     | 7     | 7     | 7   | 0   | 0   | 0   | 22     |
| Chinook salmon      | 0.144                   | 3.502                        | 14    | 335   | 267   | 102 | 20  | 1   | 0   | 739    |
| Rainbow trout       | 0.017                   | 0.417                        | 4     | 49    | 23    | 10  | 2   | 0   | 0   | 88     |
| Brown trout         | 0.003                   | 0.085                        | 2     | 5     | 6     | 5   | 0   | 0   | 0   | 18     |
| Lake trout          | 0.050                   | 1.218                        | 0     | 94    | 106   | 52  | 5   | 0   | 0   | 257    |
| Yellow perch        | 0.002                   | 0.047                        | 0     | 10    | 0     | 0   | 0   | 0   | 0   | 10     |
| Walleye             | 0.001                   | 0.033                        | 4     | 0     | 1     | 1   | 1   | 0   | 0   | 7      |
| Other               | 0.001                   | 0.033                        | 0     | 6     | 1     | 0   | 0   | 0   | 0   | 7      |
| Lamprey on:         |                         |                              |       |       |       |     |     |     |     |        |
| Chinook salmon      |                         |                              | 0     | 16    | 11    | 1   | 0   | 0   | 0   | 28     |
| Lake trout          |                         |                              | 0     | 4     | 3     | 0   | 0   | 0   | 0   | 7      |
| Angler hours        |                         |                              | 228   | 2,317 | 1,625 | 567 | 381 | 30  | 0   | 5,148  |
| Angler trips        |                         |                              | 38    | 372   | 265   | 101 | 58  | 6   | 0   | 840    |
| Resident anglers    |                         |                              | 36    | 363   | 250   | 92  | 58  | 3   | 0   | 802    |
| Nonresident anglers |                         |                              | 2     | 9     | 15    | 9   | 3   | 3   | 0   | 41     |
| Charter excursions  |                         |                              | 10    | 90    | 62    | 29  | 18  | 2   | 0   | 211    |

Appendix 31.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Lexington, Michigan (Lake Huron) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |     |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-----|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul | Aug | Sep | Oct |        |
| Coho salmon         | 0.014                   | 0.286                        | 8     | 0   | 0   | 1   | 3   | 0   | 0   | 12     |
| Chinook salmon      | 0.100                   | 2.000                        | 25    | 18  | 4   | 37  | 0   | 0   | 0   | 84     |
| Rainbow trout       | 0.011                   | 0.214                        | 2     | 4   | 0   | 3   | 0   | 0   | 0   | 9      |
| Brown trout         | 0.005                   | 0.095                        | 3     | 0   | 0   | 1   | 0   | 0   | 0   | 4      |
| Lake trout          | 0.025                   | 0.500                        | 1     | 1   | 0   | 18  | 1   | 0   | 0   | 21     |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Walleye             | 0.010                   | 0.190                        | 3     | 4   | 0   | 1   | 0   | 0   | 0   | 8      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |     |     |     |     |        |
| Chinook salmon      |                         |                              | 1     | 3   | 0   | 0   | 0   | 0   | 0   | 4      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Angler hours        |                         |                              | 298   | 211 | 12  | 290 | 25  | 0   | 0   | 836    |
| Angler trips        |                         |                              | 55    | 46  | 3   | 50  | 5   | 0   | 0   | 159    |
| Resident anglers    |                         |                              | 53    | 46  | 3   | 41  | 5   | 0   | 0   | 148    |
| Nonresident anglers |                         |                              | 2     | 0   | 0   | 9   | 0   | 0   | 0   | 11     |
| Charter excursions  |                         |                              | 14    | 12  | 1   | 14  | 1   | 0   | 0   | 42     |

Appendix 32.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Black River Harbor, Michigan (Lake Superior) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |       |       |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-------|-------|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun   | Jul   | Aug | Sep | Oct |        |
| Coho salmon         | 0.013                   | 0.630                        | 0     | 10  | 20    | 11    | 5   | 5   | 0   | 51     |
| Chinook salmon      | 0.002                   | 0.099                        | 0     | 0   | 1     | 2     | 3   | 2   | 0   | 8      |
| Rainbow trout       | 0.002                   | 0.074                        | 0     | 0   | 2     | 0     | 1   | 3   | 0   | 6      |
| Brown trout         | 0.000                   | 0.012                        | 0     | 0   | 0     | 1     | 0   | 0   | 0   | 1      |
| Lake trout          | 0.202                   | 9.889                        | 0     | 47  | 222   | 242   | 210 | 80  | 0   | 801    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0     | 0     | 0   | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0     | 0     | 0   | 0   | 0   | 0      |
| Other               | 0.000                   | 0.012                        | 0     | 0   | 0     | 1     | 0   | 0   | 0   | 1      |
| Lamprey on:         |                         |                              |       |     |       |       |     |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0     | 0     | 0   | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0   | 3     | 3     | 1   | 0   | 0   | 7      |
| Angler hours        |                         |                              | 0     | 202 | 1,298 | 1,348 | 836 | 276 | 0   | 3,960  |
| Angler trips        |                         |                              | 0     | 32  | 150   | 156   | 104 | 31  | 0   | 473    |
| Resident anglers    |                         |                              | 0     | 32  | 39    | 27    | 41  | 25  | 0   | 164    |
| Nonresident anglers |                         |                              | 0     | 0   | 111   | 129   | 63  | 6   | 0   | 309    |
| Charter excursions  |                         |                              | 0     | 6   | 25    | 26    | 18  | 6   | 0   | 81     |

Appendix 33.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Ontonagon, Michigan (Lake Superior) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |     |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-----|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul | Aug | Sep | Oct |        |
| Coho salmon         | 0.003                   | 0.108                        | 0     | 2   | 0   | 2   | 0   | 0   | 0   | 4      |
| Chinook salmon      | 0.001                   | 0.027                        | 0     | 0   | 0   | 1   | 0   | 0   | 0   | 1      |
| Rainbow trout       | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Brown trout         | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lake trout          | 0.339                   | 13.541                       | 0     | 10  | 79  | 202 | 210 | 0   | 0   | 501    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |     |     |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 1   | 0   | 0   | 0   | 1      |
| Angler hours        |                         |                              | 0     | 16  | 272 | 619 | 569 | 0   | 0   | 1,476  |
| Angler trips        |                         |                              | 0     | 4   | 34  | 86  | 76  | 0   | 0   | 200    |
| Resident anglers    |                         |                              | 0     | 0   | 9   | 28  | 29  | 0   | 0   | 66     |
| Nonresident anglers |                         |                              | 0     | 4   | 25  | 58  | 47  | 0   | 0   | 134    |
| Charter excursions  |                         |                              | 0     | 1   | 6   | 16  | 14  | 0   | 0   | 37     |

Appendix 34.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats at Marquette, Michigan (Lake Superior) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |     |     |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-----|-----|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul | Aug | Sep | Oct |        |
| Coho salmon         | 0.002                   | 0.051                        | 0     | 1   | 0   | 1   | 3   | 0   | 0   | 5      |
| Chinook salmon      | 0.001                   | 0.031                        | 0     | 0   | 0   | 1   | 1   | 1   | 0   | 3      |
| Rainbow trout       | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Brown trout         | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lake trout          | 0.252                   | 6.929                        | 0     | 23  | 112 | 223 | 230 | 85  | 6   | 679    |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Other               | 0.001                   | 0.041                        | 0     | 0   | 0   | 0   | 4   | 0   | 0   | 4      |
| Lamprey on:         |                         |                              |       |     |     |     |     |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 1   | 0   | 0   | 0   | 1      |
| Angler hours        |                         |                              | 0     | 98  | 340 | 928 | 981 | 315 | 28  | 2,690  |
| Angler trips        |                         |                              | 0     | 17  | 54  | 139 | 121 | 60  | 4   | 395    |
| Resident anglers    |                         |                              | 0     | 12  | 49  | 107 | 110 | 53  | 4   | 335    |
| Nonresident anglers |                         |                              | 0     | 8   | 8   | 32  | 11  | 7   | 0   | 60     |
| Charter excursions  |                         |                              | 0     | 5   | 18  | 29  | 27  | 18  | 1   | 98     |

Appendix 35.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats in the vicinity of Isle Royale National Park, Michigan (Lake Superior) during 1998.

| Species             | Total catch<br>per hour | Total catch<br>per excursion | Month |     |     |       |       |     |     | Season |
|---------------------|-------------------------|------------------------------|-------|-----|-----|-------|-------|-----|-----|--------|
|                     |                         |                              | Apr   | May | Jun | Jul   | Aug   | Sep | Oct |        |
| Coho salmon         | 0.011                   | 0.338                        | 0     | 0   | 0   | 8     | 35    | 1   | 0   | 44     |
| Chinook salmon      | 0.008                   | 0.269                        | 0     | 0   | 0   | 1     | 33    | 1   | 0   | 35     |
| Rainbow trout       | 0.006                   | 0.192                        | 0     | 0   | 0   | 9     | 16    | 0   | 0   | 25     |
| Brown trout         | 0.000                   | 0.008                        | 0     | 0   | 0   | 1     | 0     | 0   | 0   | 1      |
| Lake trout          | 0.262                   | 8.354                        | 0     | 0   | 11  | 484   | 587   | 4   | 0   | 1,086  |
| Yellow perch        | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Walleye             | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Other               | 0.000                   | 0.000                        | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lamprey on:         |                         |                              |       |     |     |       |       |     |     |        |
| Chinook salmon      |                         |                              | 0     | 0   | 0   | 0     | 0     | 0   | 0   | 0      |
| Lake trout          |                         |                              | 0     | 0   | 0   | 0     | 3     | 0   | 0   | 3      |
| Angler hours        |                         |                              | 0     | 0   | 24  | 1,659 | 2,436 | 28  | 0   | 4,147  |
| Angler trips        |                         |                              | 0     | 0   | 6   | 233   | 322   | 7   | 0   | 568    |
| Resident anglers    |                         |                              | 0     | 0   | 4   | 47    | 37    | 7   | 0   | 95     |
| Nonresident anglers |                         |                              | 0     | 0   | 2   | 186   | 285   | 0   | 0   | 473    |
| Charter excursions  |                         |                              | 0     | 0   | 3   | 55    | 69    | 3   | 0   | 130    |