

1986

STURGEON

FISHERIES

REPORT

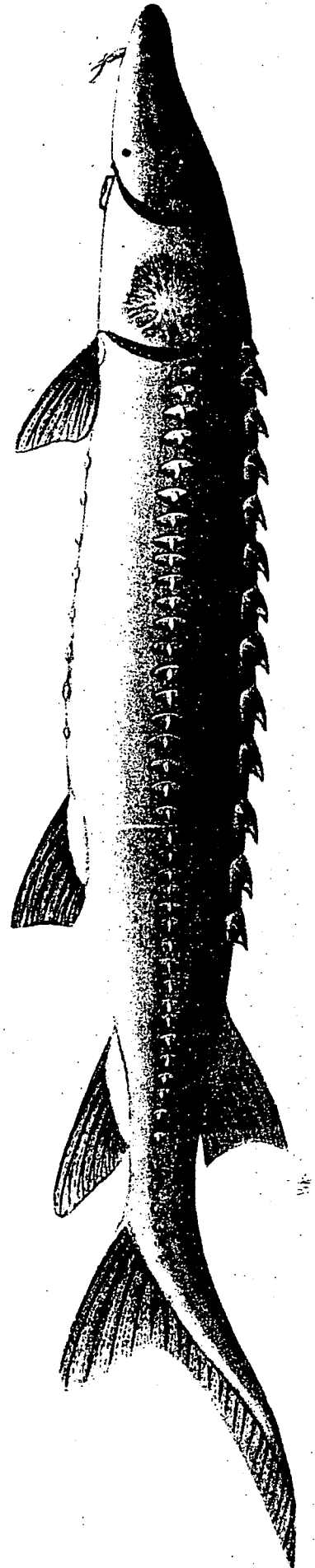
Prepared By

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KETTLE FALLS DISTRICT

COULEE DAM NATIONAL RECREATION AREA

NATIONAL PARK SERVICE





FINAL  
STURGEON FISHERIES REPORT

1986

In 1986, the Kettle Falls District staff conducted the third season of informal, non-scientific sturgeon fisheries surveys to continue gathering baseline data on this unique resource. We began conducting surveys on March 4, 1986 and continued them through October 25, 1986. Surveys were conducted on an intermittent basis with efforts made to contact anglers on weekends and times when shore-based fishermen were observed in traditional sturgeon fishing areas. The number of survey days was increased from 67 in 1985 to 145 in 1986 which provides us with more complete and reliable data. However, information collected is provided voluntarily and is often not verifiable by us. Therefore it cannot be considered to be scientifically accurate or complete.

The following information is based on the field observations and survey notes of National Park Service rangers patrolling primarily in the Marcus Island area. Some data was collected at other locations such as Bossburg and Snag Cove when fishermen were observed in those areas (see attached map).

During the 145 days that surveys were conducted 894 anglers were contacted. Actual pole hours of fishing was 10,181 for an average of 11.39 hours per fisherman. These people reported catching 54 sturgeon on the days surveyed for an average of 1 fish caught for each 188.5 hours fished as compared to 1985 when anglers were catching one sturgeon per 55.8 hours fished. Of the reported sturgeon caught this year, 34 were of legal size (4' to 6') and kept and 20 were released. Fourteen of the released fish were under the legal length, three were over the legal length, one was of legal length, and two were of unknown lengths. This data is summarized by month and compared to the 1985 survey results in the following table:

SUMMARY AND COMPARISON OF SURVEY DATA

| MONTH     | ANGLERS |       | TOTAL POLE HOURS |       | STURGEON KEPT |       | STURGEON RELEASED |       | SURVEY DAYS |       |
|-----------|---------|-------|------------------|-------|---------------|-------|-------------------|-------|-------------|-------|
|           | '85     | '86   | '85              | '86   | '85           | '86   | '85               | '86   | '85         | '86   |
|           | -----   | ----- | -----            | ----- | -----         | ----- | -----             | ----- | -----       | ----- |
| March     | 50      | 97    | 278              | 859   | 4             | 2     | 0                 | 0     | 3           | 15    |
| April     | 158     | 143   | 1690             | 1143  | 20            | 4     | 8                 | 4     | 17          | 22    |
| May       | 78      | 138   | 549              | 1513  | 6             | 7     | 1                 | 1     | 14          | 21    |
| June      | 29      | 15    | 129              | 171   | 3             | 0     | 0                 | 0     | 9           | 3     |
| July      | 79      | 139   | 396              | 1885  | 6             | 5     | 9                 | 4     | 20          | 20    |
| August    | 15      | 155   | 44               | 2069  | 0             | 8     | 0                 | 3     | 2           | 29    |
| September | 10      | 174   | 122              | 2182  | 0             | 8     | 2                 | 8     | 2           | 24    |
| October   | 7       | 33    | 86               | 362   | 0             | 0     | 0                 | 0     | 1           | 11    |
| TOTALS    | 1242    | 894   | 13293            | 10181 | 39            | 34    | 20                | 20    | 67          | 145   |

## SAMPLE METHODS

The sampling methods this season, although not the best, were far more consistent and reliable than the surveys conducted in past years and therefore the information generated should reflect more accurately actual numbers of anglers, hours, and sturgeon harvested. Some points need to be considered when analysing the data. The number of anglers is only that of the anglers present at the time of the survey. Many locals fish many hours before or after work and parties of fishermen could arrive or depart without ever being counted since the sampling was done as chance encounters.

This year more information was gathered to include the sizes of fish caught, day of the week so use trends could be established, and lake level to see if any correlation between catch and water level existed. Any additional data that would be of value could, upon request, be collected and incorporated in the 1987 survey.

The calculation of total pole hours is rough. This is due to inaccurate estimates of starting and ending times, persons who fish illegally at night for sturgeon claiming to be fishing for burbot, persons who report illegal night catches but don't report their illegal pole hours, groups that stay for prolonged periods yet may have only been sampled once during their stay, and again the dependency upon the fishermen to provide us with honest information. Most of the anglers contacted were very willing to cooperate with our efforts and show off their catch although there were some who seemed to resent our intrusion and inquiries. On a few occasions the rangers felt that there was something "fishy" or not quite right when talking to a group but there is very little that can be done to verify or substantiate suspicions that the truth was not being told.

Most of the sturgeon fishermen contacted for our survey purposes were shore-based and were using a small boat to set their lines. However there are increasing numbers of anglers who are using larger craft and modern technology to enhance their fishing success. The use of electronic depth finders to 'see' the fish and locate deep holes is common. There were also reports this year of people using underwater video cameras to locate the great fish. Because of their increased mobility survey data is rarely collected from these groups who would be expected to have a fairly high catch rate.

## SURVEY RESULTS

From the data collected this season it can be seen that September had the most anglers and the most sturgeon caught as compared to April of last year when the greatest catch and numbers of fishermen were recorded. Next in numbers was August followed closely by July, May and April. Unfortunately, only a few days were sampled in June due to schedule conflicts. Using only months in which 20 days or more were sampled, an average number of 150 fisherman per month and an average catch of 10.4 sturgeon per month can be calculated.

The lake level this year was not as low nor for as long as it was in 1985. Consequently fishing from the drawdown areas at Marcus was limited to the months of April and May. However the lake level did not seem to influence the number of sturgeon fishermen in any significant way as there were similar numbers of fishermen in May when the lake was at its lowest and in July when the lake was near full pool. The lake level also did not seem to affect the sturgeon catch in any measurable way.

As in past years, weekends consistently saw the greatest numbers of sturgeon fishermen at Marcus with Saturday generally being the busiest day although there often would be many people fishing mid-week as well.

One observation made by the rangers this year was that there appears to be a shift in the type of fishermen using the Marcus area. Some known users no longer fish at Marcus but were said to be fishing further north on Lake Roosevelt. Many first-time sturgeon fishermen and experienced fishermen from out-of-state are now using the Marcus area. Perhaps the local fishermen and illegal fishermen grew tired of our surveys or the influx of new fishermen and have sought out some of the lesser known and more inaccessible fishing spots. Whatever the reason, it appears that the fishing pressure has shifted northward on Lake Roosevelt.

As always where there is fishing there are rumors. As in the past, we often heard unconfirmed reports of sturgeon catches especially when the numbers or the fish were large. In March there were reports of one group catching 11 fish on the 16th and 12 more on the 17th, location unknown. Many reports were received of people successfully sturgeon fishing in areas north of China Bar, near the Little Dalles, and north of the Recreation Area from Onion Creek to Waneta. Stories such as 'taking them out by the pick-up loads' and of 'great catches' were not infrequent but actual numbers are not available. Another report was of a group of 11 people fishing continuously for three weeks north of Onion Creek with a lot of fish being removed. For the first time a sturgeon (7 foot) was reported to have been caught at Gifford.

It was again noted that numbers of anglers would increase markedly at times when rumors would spread about the fishing being really good. Many people came from Spokane when they heard the fish were hitting. Often they would stop to fish at Marcus on their way north towards Onion Creek where the 'good' fishing was. Many first time sturgeon fishermen were contacted this season and some were successful which will only draw more interested folks in.

Sizes of the reported sturgeon caught were recorded this year and are included in this report. The largest sturgeon reported was 12' 6" caught, photographed, and released near China Bar from a boat. Based upon data gathered the average sturgeon caught was 54.1" in length. The average size of sturgeon kept was 58.6".

The decision was made not to have another public meeting in 1986 as there was little new information generated in 1985. A public meeting to provide information on the sturgeon fishery is being planned by the Kettle Falls District of Coulee Dam National Recreation Area to be held in late spring in the Colville/Kettle Falls, Washington area. The general response and mood of the local communities seems to support efforts that will ensure the continuation of sturgeon in Lake Roosevelt.

#### SUMMARY

In summary, the data generated this year is more complete, based on an increased number of actual surveys and as last year, includes only information taken during the surveys. Although the numbers of anglers and the total pole hours are over three times those recorded for last year the number of sturgeon reported caught is slightly less than last year.

The fact that the primary survey area was Marcus Island and did not expand to include those new areas that the more experienced local fishermen were moving into could help explain the decrease. So too could the possibility that the sturgeon population has been illegally and too heavily harvested in the Marcus area in recent years. Very little enforcement of sturgeon fishing regulations by the state combined with the fact that a license is not required to fish for sturgeon, and of course the thrill of landing a large fish have added to the growing numbers of sturgeon fishing enthusiasts.

Sturgeon fishing is recognized as an important recreational activity on the Kettle Falls District and is still growing in popularity. The National Park Service, in keeping with their policies, will continue to assist with research efforts, to support sturgeon fishing as a viable recreational activity and to support and improve this use by providing information to the public.

| MONTH/<br>DATE | DOW | LAKE<br>LEVEL | LOC.<br>CODE | NUM.<br>ANG. | POLE<br>HOURS | STURG.<br>KEPT | STURG.<br>RELEASE | LENGTH<br>IN INCHES |
|----------------|-----|---------------|--------------|--------------|---------------|----------------|-------------------|---------------------|
| MARCH 4        | 3   | 1286          | M            | 6            | 24            | 0              | 0                 |                     |
| 8              | 7   | 1285          | M            | 5            | 50            | 0              | 0                 |                     |
| 9              | 1   | 1286          | M            | 5            | 50            | 0              | 0                 |                     |
| 13             | 5   | 1286          | M            | 8            | 80            | 0              | 0                 |                     |
| 14             | 6   | 1286          | M            | 8            | 80            | 0              | 0                 |                     |
| 15             | 7   | 1286          | M            | 10           | 88            | 1              | 0                 | 56                  |
| 15             | 7   | 1286          | B            | 4            | 32            | 0              | 0                 |                     |
| 16             | 1   | 1286          | M            | 10           | 88            | 0              | 0                 |                     |
| 16             | 1   | 1286          | B            | 4            | 32            | 0              | 0                 |                     |
| 19             | 4   | 1285          | M            | 0            | 0             | 0              | 0                 |                     |
| 22             | 7   | 1285          | M            | 12           | 96            | 0              | 0                 |                     |
| 25             | 3   | 1285          | M            | 2            | 17            | 0              | 0                 |                     |
| 26             | 4   | 1285          | M            | 1            | 9             | 0              | 0                 |                     |
| 27             | 5   | 1285          | M            | 2            | 16            | 0              | 0                 |                     |
| 29             | 7   | 1285          | M            | 12           | 117.5         | 1              | 0                 | 63                  |
| 30             | 1   | 1283          | M            | 6            | 64            | 0              | 0                 |                     |
| 30             | 1   | 1283          | B            | 0            | 0             | 0              | 0                 |                     |
| 31             | 2   | 1282          | M            | 2            | 15            | 0              | 0                 |                     |
| 31             | 2   | 1282          | B            | 0            | 0             | 0              | 0                 |                     |

TOTALS FOR MONTH

# DAYS SURVEYED 15

|         |   |      |     |    |       |   |   |       |
|---------|---|------|-----|----|-------|---|---|-------|
| APRIL 1 | 3 | 1281 | M   | 2  | 15    | 0 | 0 |       |
| 2       | 4 | 1280 | M   | 4  | 36    | 1 | 0 | 59    |
| 3       | 5 | 1279 | M   | 2  | 15    | 1 | 0 | 72    |
| 4       | 6 | 1277 | M   | 1  | 10    | 0 | 0 |       |
| 5       | 7 | 1276 | M   | 18 | 203   | 0 | 0 |       |
| 6       | 1 | 1276 | M   | 8  | 79    | 0 | 0 |       |
| 6       | 1 | 1276 | B   | 0  | 0     | 0 | 0 |       |
| 8       | 3 | 1274 | M   | 6  | 44    | 0 | 0 |       |
| 9       | 4 | 1273 | M   | 24 | 65    | 0 | 0 |       |
| 11      | 6 | 1272 | M   | 6  | 73    | 1 | 0 | 54    |
| 12      | 7 | 1271 | M   | 19 | 136.5 | 0 | 1 | 36    |
| 13      | 1 | 1270 | M   | 6  | 42    | 0 | 0 |       |
| 13      | 1 | 1270 | O   | 1  | 8     | 1 | 0 | 68    |
| 14      | 2 | 1268 | M   | 4  | 29    | 0 | 0 |       |
| 15      | 3 | 1267 | M   | 1  | 8     | 0 | 0 |       |
| 15      | 3 | 1267 | B   | 0  | 0     | 0 | 0 |       |
| 16      | 4 | 1266 | M,B | 0  | 0     | 0 | 0 |       |
| 19      | 7 | 1265 | M   | 9  | 88    | 0 | 0 |       |
| 19      | 7 | 1265 | B   | 3  | 17    | 0 | 0 |       |
| 20      | 1 | 1265 | M   | 6  | 51    | 0 | 0 |       |
| 20      | 1 | 1265 | B   | 0  | 0     | 0 | 0 |       |
| 21      | 2 | 1265 | M   | 0  | 0     | 0 | 0 |       |
| 22      | 3 | 1264 | M   | 2  | 22    | 0 | 0 |       |
| 23      | 4 | 1262 | M   | 3  | 31    | 0 | 0 |       |
| 26      | 7 | 1259 | M   | 3  | 37    | 0 | 0 |       |
| 27      | 1 | 1258 | M   | 10 | 94    | 0 | 2 | 20 35 |
| 28      | 2 | 1258 | M   | 5  | 39    | 0 | 1 | 37    |

TOTALS FOR MONTH

# DAYS SURVEYED 22

| MONTH/<br>DATE | DOW | LAKE<br>LEVEL | LOC.<br>CODE | NUM.<br>ANG. | POLE<br>HOURS | STURG.<br>KEPT | STURG.<br>RELEASE | LENGTH<br>IN INCHES |
|----------------|-----|---------------|--------------|--------------|---------------|----------------|-------------------|---------------------|
| MAY            | 2   | 6             | 1254         | M            | 3             | 18             | 0                 | 0                   |
|                | 3   | 7             | 1254         | M            | 6             | 67             | 0                 | 0                   |
|                | 3   | 7             | 1254         | O            | 2             | 22             | 1                 | 0                   |
|                | 4   | 1             | 1254         | M            | 3             | 38             | 0                 | 0                   |
|                | 5   | 2             | 1253         | M            | 2             | 16             | 0                 | 0                   |
|                | 6   | 3             | 1252         | M            | 4             | 53             | 0                 | 0                   |
|                | 9   | 6             | 1251         | M            | 2             | 12             | 0                 | 0                   |
|                | 9   | 6             | 1251         | B            | 0             | 0              | 0                 | 0                   |
|                | 10  | 7             | 1250         | M            | 6             | 58             | 1                 | 1                   |
|                | 11  | 1             | 1249         | M            | 6             | 51             | 0                 | 0                   |
|                | 12  | 2             | 1248         | M            | 2             | 13             | 0                 | 0                   |
|                | 13  | 3             | 1247         | M            | 0             | 0              | 0                 | 0                   |
|                | 14  | 4             | 1245         | M            | 0             | 0              | 0                 | 0                   |
|                | 15  | 5             | 1244         | M            | 0             | 0              | 0                 | 0                   |
|                | 17  | 7             | 1243         | M            | 8             | 95.5           | 1                 | 0                   |
|                | 18  | 1             | 1242         | M            | 10            | 122            | 1                 | 0                   |
|                | 19  | 2             | 1242         | M            | 10            | 106            | 0                 | 0                   |
|                | 21  | 4             | 1242         | M            | 8             | 76             | 0                 | 0                   |
|                | 22  | 5             | 1243         | M            | 4             | 40             | 0                 | 0                   |
|                | 23  | 6             | 1244         | O            | 2             | 6              | 2                 | 0                   |
|                | 23  | 6             | 1244         | M            | 8             | 86             | 0                 | 0                   |
|                | 24  | 7             | 1245         | M            | 21            | 281.5          | 1                 | 0                   |
|                | 25  | 1             | 1247         | M            | 31            | 352            | 0                 | 0                   |
|                | 29  | 5             | 1255         | M            | 0             | 0              | 0                 | 0                   |

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|                  |  |  |  |    |     |      |   |   |
|------------------|--|--|--|----|-----|------|---|---|
| TOTALS FOR MONTH |  |  |  |    | 138 | 1513 | 7 | 1 |
| # DAYS SURVEYED  |  |  |  | 21 |     |      |   |   |

|      |    |   |      |   |   |    |   |   |
|------|----|---|------|---|---|----|---|---|
| JUNE | 1  | 1 | 1265 | M | 0 | 0  | 0 | 0 |
|      | 1  | 1 | 1265 | B | 0 | 0  | 0 | 0 |
|      | 8  | 1 | 1277 | M | 9 | 91 | 0 | 0 |
|      | 14 | 7 | 1282 | M | 6 | 80 | 0 | 0 |

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|                  |  |  |  |   |    |     |   |   |
|------------------|--|--|--|---|----|-----|---|---|
| TOTALS FOR MONTH |  |  |  |   | 15 | 171 | 0 | 0 |
| # DAYS SURVEYED  |  |  |  | 3 |    |     |   |   |

| MONTH/<br>DATE | DOW | LAKE<br>LEVEL | LOC.<br>C | NUM.<br>ANG. | POLE<br>HOURS | STURG.<br>KEPT | STURG.<br>RELEASE | LENGTH<br>IN INCHES |       |
|----------------|-----|---------------|-----------|--------------|---------------|----------------|-------------------|---------------------|-------|
| JULY           | 7   | 2             | 1288      | M            | 2             | 31             | 1                 | 0                   | 69    |
|                | 8   | 3             | 1288      | M            | 3             | 31             | 0                 | 1                   | 69    |
|                | 9   | 4             | 1289      | M            | 15            | 223.5          | 1                 | 0                   | 50    |
|                | 11  | 6             | 1289      | M            | 16            | 213.5          | 0                 | 0                   |       |
|                | 13  | 1             | 1285      | M            | 14            | 179            | 1                 | 1                   | 53 43 |
|                | 14  | 2             | 1285      | M            | 11            | 141            | 0                 | 0                   |       |
|                | 15  | 3             | 1285      | M            | 9             | 135            | 0                 | 0                   |       |
|                | 16  | 4             | 1285      | M            | 8             | 128            | 0                 | 0                   |       |
|                | 17  | 5             | 1285      | M            | 5             | 60             | 0                 | 0                   |       |
|                | 18  | 6             | 1287      | M            | 10            | 147            | 0                 | 0                   |       |
|                | 19  | 7             | 1285      | M            | 10            | 150.5          | 1                 | 1                   | 57 36 |
|                | 20  | 1             | 1286      | M            | 8             | 105.5          | 0                 | 0                   |       |
|                | 21  | 2             | 1286      | M            | 6             | 84             | 0                 | 1                   | ?     |
|                | 22  | 3             | 1287      | M            | 2             | 17             | 0                 | 0                   |       |
|                | 24  | 5             | 1285      | M            | 4             | 54             | 0                 | 0                   |       |
|                | 25  | 6             | 1285      | M            | 1             | 12             | 0                 | 0                   |       |
|                | 26  | 7             | 1286      | M            | 7             | 100.5          | 1                 | 0                   | 57    |
|                | 27  | 1             | 1286      | M            | 7             | 58             | 0                 | 0                   |       |
|                | 28  | 2             | 1285      | M            | 0             | 0              | 0                 | 0                   |       |
|                | 29  | 3             | 1285      | M            | 1             | 14             | 0                 | 0                   |       |

TOTALS FOR MONTH

# DAYS SURVEYED 20

|      |    |   |      |   |    |       |   |   |       |
|------|----|---|------|---|----|-------|---|---|-------|
| AUG. | 1  | 6 | 1285 | M | 9  | 121   | 0 | 0 |       |
|      | 2  | 7 | 1286 | M | 8  | 91    | 1 | 0 | 70    |
|      | 3  | 1 | 1285 | M | 4  | 42    | 0 | 0 |       |
|      | 3  | 1 | 1285 | O | 2  | 15    | 0 | 1 | 150   |
|      | 4  | 2 | 1286 | M | 0  | 0     | 0 | 0 |       |
|      | 5  | 3 | 1286 | M | 3  | 48    | 0 | 0 |       |
|      | 6  | 4 | 1286 | M | 3  | 42    | 0 | 1 | 77    |
|      | 7  | 5 | 1286 | M | 6  | 85.5  | 0 | 0 |       |
|      | 8  | 6 | 1287 | M | 10 | 130.5 | 1 | 0 | 65    |
|      | 9  | 7 | 1287 | M | 10 | 140.5 | 1 | 0 | 55    |
|      | 10 | 1 | 1287 | M | 8  | 89.5  | 1 | 0 | 50    |
|      | 11 | 2 | 1288 | M | 6  | 83    | 1 | 0 | 57    |
|      | 12 | 3 | 1288 | M | 4  | 46.5  | 1 | 1 | 57 26 |
|      | 13 | 4 | 1287 | M | 6  | 90    | 1 | 0 | 55    |
|      | 14 | 5 | 1288 | M | 3  | 45    | 1 | 0 | 56    |
|      | 15 | 6 | 1288 | M | 6  | 58.5  | 0 | 0 |       |
|      | 17 | 1 | 1287 | M | 0  | 0     | 0 | 0 |       |
|      | 18 | 2 | 1287 | M | 7  | 110   | 0 | 0 |       |
|      | 19 | 3 | 1286 | O | 6  | 90    | 0 | 0 |       |
|      | 19 | 3 | 1286 | M | 3  | 45    | 0 | 0 |       |
|      | 20 | 4 | 1286 | M | 5  | 71.5  | 0 | 0 |       |
|      | 21 | 5 | 1286 | M | 5  | 69    | 0 | 0 |       |
|      | 22 | 6 | 1285 | M | 3  | 41.5  | 0 | 0 |       |
|      | 23 | 7 | 1285 | M | 9  | 108   | 0 | 0 |       |
|      | 24 | 1 | 1285 | M | 4  | 56    | 0 | 0 |       |
|      | 25 | 2 | 1285 | M | 0  | 0     | 0 | 0 |       |
|      | 26 | 3 | 1284 | M | 2  | 29    | 0 | 0 |       |
|      | 27 | 4 | 1284 | M | 3  | 43.5  | 0 | 0 |       |
|      | 28 | 5 | 1284 | M | 5  | 72.5  | 0 | 0 |       |
|      | 29 | 6 | 1284 | M | 5  | 68.5  | 0 | 0 |       |
|      | 31 | 1 | 1284 | M | 10 | 136   | 0 | 0 |       |

TOTALS FOR MONTH

# DAYS SURVEYED 29

| MONTH/<br>DATE   | DOW | LAKE<br>LEVEL | LOC.<br>CODE | NUM.<br>ANG. | POLE<br>HOURS | STURG.<br>KEPT | STURG.<br>RELEASE | LENGTH<br>IN INCHES |
|------------------|-----|---------------|--------------|--------------|---------------|----------------|-------------------|---------------------|
| SEPT. 1          | 2   | 1285          | M            | 6            | 81            | 0              | 0                 |                     |
| 2                | 3   | 1286          | M            | 7            | 80            | 0              | 0                 |                     |
| 3                | 4   | 1285          | M            | 3            | 52            | 0              | 0                 |                     |
| 5                | 6   | 1283          | M            | 5            | 64            | 0              | 0                 |                     |
| 6                | 7   | 1283          | M            | 7            | 90            | 0              | 0                 |                     |
| 8                | 2   | 1283          | M            | 4            | 56            | 2              | 2                 | 65 54 27 27         |
| 9                | 3   | 1283          | M            | 2            | 28            | 0              | 1                 | 24                  |
| 10               | 4   | 1285          | M            | 4            | 47            | 0              | 0                 |                     |
| 11               | 5   | 1286          | M            | 4            | 48            | 0              | 1                 | ?                   |
| 12               | 6   | 1286          | M            | 6            | 75            | 1              | 1                 | 51 23               |
| 13               | 7   | 1286          | M            | 9            | 114           | 0              | 0                 |                     |
| 14               | 1   | 1286          | M            | 11           | 122           | 1              | 1                 | 60 25               |
| 15               | 2   | 1287          | M            | 2            | 22            | 0              | 0                 |                     |
| 16               | 3   | 1287          | M            | 5            | 46            | 0              | 0                 |                     |
| 17               | 4   | 1287          | M            | 14           | 180           | 0              | 1                 | 43                  |
| 18               | 5   | 1287          | M            | 14           | 180           | 1              | 0                 | 52                  |
| 19               | 6   | 1287          | M            | 14           | 188           | 0              | 0                 |                     |
| 20               | 7   | 1287          | M            | 15           | 173           | 1              | 1                 | 56 32               |
| 21               | 1   | 1287          | M            | 10           | 107.5         | 1              | 0                 | 52                  |
| 22               | 2   | 1287          | M            | 2            | 30            | 0              | 0                 |                     |
| 24               | 4   | 1287          | M            | 5            | 65            | 0              | 0                 |                     |
| 25               | 5   | 1287          | M            | 7            | 91            | 0              | 0                 |                     |
| 27               | 7   | 1287          | M            | 10           | 145           | 1              | 0                 | 52                  |
| 28               | 1   | 1287          | M            | 8            | 97            | 0              | 0                 |                     |
| ~~~~~            |     |               |              |              |               |                |                   |                     |
| TOTALS FOR MONTH |     |               |              | 174          | 2181.5        | 8              | 8                 |                     |
| # DAYS SURVEYED  |     |               |              | 24           |               |                |                   |                     |

|                  |   |      |   |    |     |   |   |  |
|------------------|---|------|---|----|-----|---|---|--|
| OCT. 2           | 5 | 1288 | M | 5  | 53  | 0 | 0 |  |
| 4                | 7 | 1288 | M | 2  | 24  | 0 | 0 |  |
| 5                | 1 | 1289 | M | 4  | 69  | 0 | 0 |  |
| 8                | 4 | 1289 | M | 4  | 26  | 0 | 0 |  |
| 9                | 5 | 1289 | M | 4  | 48  | 0 | 0 |  |
| 10               | 6 | 1289 | M | 6  | 60  | 0 | 0 |  |
| 11               | 7 | 1289 | M | 6  | 70  | 0 | 0 |  |
| 17               | 6 | 1287 | M | 0  | 0   | 0 | 0 |  |
| 18               | 7 | 1287 | M | 2  | 12  | 0 | 0 |  |
| 24               | 6 | 1287 | M | 0  | 0   | 0 | 0 |  |
| 25               | 7 | 1288 | M | 0  | 0   | 0 | 0 |  |
| ~~~~~            |   |      |   |    |     |   |   |  |
| TOTALS FOR MONTH |   |      |   | 33 | 362 | 0 | 0 |  |
| # DAYS SURVEYED  |   |      |   | 11 |     |   |   |  |

|                 |  |  |  |      |        |    |    |  |
|-----------------|--|--|--|------|--------|----|----|--|
| TOTALS FOR YEAR |  |  |  | 1894 | 10181. | 34 | 20 |  |
| # DAYS SURVEYED |  |  |  | 145  |        |    |    |  |

M - Marcus  
 B - Bossburg  
 O - Other