WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CREEL SURVEY REPORT

LAURA LAKE
VILAS COUNTY

2016-17

Treaty Fisheries Publication

Compiled by Jeff Blonski &
Jason Halverson
Treaty Fisheries Technicians
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INTRODUCTION

Fish populations can fluctuate due to natural forces (weather, predation, competition), management actions (stocking, regulations, habitat improvement), inappropriate development (habitat degradation), and harvest impacts. Wisconsin Department of Natural Resources fisheries crews regularly conduct fishery surveys on area lakes and reservoirs to gather the information needed to monitor changes, identify concerns, evaluate past management actions, and to prescribe fishery management strategies. Netting and electrofishing surveys are used to gather data on the status of fish populations and communities (species composition, population size, reproductive success, size/age distribution, and growth rates). The other key component of the fishery that we often need to measure is the harvest.

On many lakes in the Ceded Territory of northern Wisconsin, harvest of fish is divided between sport anglers and the six Chippewa tribes who harvest fish under rights granted by federal treaties. The tribes harvest fish mostly using a highly efficient method, spearing, during a relatively short time period in the spring. Every fish in the spear harvest is counted – a complete “census” of the harvest.

We also measure the sport angler harvest to assess its impact on the fishery. However, it would be highly impractical and very costly to conduct a complete census of every angler who fishes on a lake. Therefore, we conduct creel surveys.

A creel survey is an assessment tool used to sample the fishing activities of anglers on a body of water and make projections, or estimates, of harvest and other fishery parameters. Creel survey clerks work on randomly-selected days and shifts, forty hours per week, during the open season for gamefish from the first Saturday in May through the first Sunday in March. Creel surveys are not conducted in November when fishing effort is low and ice conditions are often unsafe. The survey is run during daylight hours, and shift times change from month to month as day length changes.

Creel survey clerks travel their lakes using a boat or snowmobile to count the number of anglers at predetermined times, and to interview anglers who have completed their fishing trip. Data is collected on what species they fished for, catch, harvest, lengths of fish harvested, marks (fin clips or tags), and hours of fishing effort. Collecting completed-trip data provides the most accurate assessment of angling activities, and it avoids the need to disturb anglers while they are fishing.

A computer program is used to make estimates of total catch and harvest of each species, catch and harvest rates, and total fishing effort by month, as well as for the year in total. Keep in mind that these are only estimates based on the best information available, and not a complete accounting of effort, catch, and harvest. Accurate estimates require that we sample a sufficient and representative portion of the angling activity on a lake. The accuracy of creel survey results, therefore, depends on good cooperation and truthful responses by anglers when a creel clerk interviews them.

You may have encountered a DNR creel survey clerk on a recent fishing trip. We appreciate your cooperation during an interview. The survey only takes a moment of your time, and it gives the Department valuable information needed for management of the fishery.
This report provides estimates of:
1. Overall fishing effort (pressure)
2. Fishing effort directed at each species
3. Catch and harvest rates
4. Numbers of fish caught and harvested

Also included are a physical description of Laura Lake; discussion of results of the survey; and detailed summaries, by species, of fishing effort, catch and harvest.

GENERAL LAKE INFORMATION

Location
Laura Lake is located in Vilas County near the town of Sayner.

Physical Characteristics
Laura Lake is a 599 acre seepage lake with a maximum depth of 43 feet. Littoral substrate consists primarily of sand, with some gravel, rock and muck. Laura Lake contains alkaline, clear water of very high transparency.

Seasons Surveyed
The period referred to in this report as the 2016-17 fishing season ran from May 7, 2016 through March 5, 2017. The open water creel survey ran from May 7 through October 31, 2016, and the ice fishing creel survey ran from December 1, 2016 through March 5, 2017.

Weather
Ice-out on Laura Lake was around April 20, 2016. Fishable ice formed on Laura Lake in mid December.

Fishing Regulations
The following seasons, daily bag limits, and length limits were in place on Laura Lake during the 2016-17 fishing season:

<table>
<thead>
<tr>
<th>Species</th>
<th>Season</th>
<th>Bag Limit</th>
<th>Min. Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Largemouth Bass</td>
<td>5/7-3/5</td>
<td>5</td>
<td>14&quot;</td>
</tr>
<tr>
<td>Smallmouth Bass</td>
<td>5/7-6/17</td>
<td>Catch&amp;Release</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6/18-3/5</td>
<td>5</td>
<td>14&quot;</td>
</tr>
<tr>
<td>Musky</td>
<td>5/28-11/30</td>
<td>1</td>
<td>40&quot;</td>
</tr>
<tr>
<td>Northern Pike</td>
<td>5/7-3/5</td>
<td>5</td>
<td>none</td>
</tr>
<tr>
<td>Walleye</td>
<td>5/7-3/5</td>
<td>3</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Minimum, 1&gt;14&quot;</td>
<td></td>
</tr>
<tr>
<td>Panfish</td>
<td>year round</td>
<td>25</td>
<td>none</td>
</tr>
<tr>
<td>Rock Bass</td>
<td>year round</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

SPECIES CATCH AND HARVEST INFORMATION

Angling effort, catch, and harvest information is summarized for each species in Table 2 and Figures 1-10. Table 2 also includes a comparison of these statistics with the previous creel survey. Information presented about species whose fishing season extends beyond March 5 should be considered minimum estimates. Each species page has up to five graphs depicting the following:

1. ESTIMATED FISHING EFFORT
   Total calculated number of hours during each month that anglers spent fishing for a species.

2. ESTIMATED SPECIFIC CATCH AND HARVEST RATES
   Calculated number of hours it takes an angler to catch or harvest a fish of the indicated species. Only information from anglers who were specifically targeting that species is reported.
3. **ESTIMATED CATCH AND HARVEST**
   Calculated number of fish of the indicated species caught or harvested by all anglers, regardless of targeted species.

4. **LENGTH DISTRIBUTION OF HARVESTED FISH**
   All fish of a species that were measured by the clerk during the entire creel survey season.

5. **LARGEST AND AVERAGE LENGTH OF HARVESTED FISH**
   Monthly largest and average length of harvested fish of a species. Only those fish measured by the creel survey clerk are reported.

**CREEL SURVEY RESULTS AND DISCUSSION**

**Survey Logistics**
   The creel survey went well. We encountered no unusual problems conducting the survey or calculating the projections contained in the report. This was the fifth time the Department conducted a creel survey on Laura Lake. The last creel survey took place in 1998-99.

**General Angler Information**
   Anglers spent 5,819 hours, or 9.7 hours per acre, fishing Laura Lake during the 2016-17 season (Table 1). That was less than the Vilas County average of 35.2 hours per acre, and less than the fishing effort documented during the 1998-99 creel survey (12.0 hours per acre). July was the most heavily fished month (1,455 hours). Fishing effort was lightest in December (140 hours). The creel clerks were able to conduct 233 interviews throughout the survey.

**RESULTS BY SPECIES**

**Walleye** (Table 2, Figure 1)
   Anglers spent 1,665 hours targeting walleye during the 2016-17 season. The greatest fishing effort for walleyes was in July (456 hours). June had the least amount of walleye fishing effort (98 hours).

   Total catch of walleyes was 125 fish with a harvest of 89 fish. Highest catch (69 fish) and highest harvest (47 fish) occurred in July. Anglers fished an average of 13.6 hours to catch, and 18.6 hours to harvest, a walleye during the survey. The mean length of harvested walleyes was 15.0 inches, and the largest walleye measured was a 19.3-inch fish.

**Northern Pike** (Table 2, Figure 2)
   Fishing effort directed at northern pike was 11 hours during the 2016-17 season. Northern pike fishing effort occurred only in July. Total catch of northern pike was 10 fish with no documented harvest.

**Muskellunge** (Table 2, Figure 3)
   Muskellunge received the most fishing effort of any gamefish species during the 2016-17 season. Anglers spent 2,883 hours targeting muskellunge. Muskellunge fishing effort was greatest in October (956 hours). Total catch of muskellunge was 142 fish, and the highest catch (56 fish) occurred in June. Anglers fished 25.5 hours to catch a muskellunge, and there was no documented harvest during the survey.

**Smallmouth Bass** (Table 2, Figure 4)
   Fishing effort targeted at smallmouth bass was 1,353 hours during the 2016-17 season. This was a dramatic increase over the 1998-99 survey, when only 102 hours were spent targeting Smallmouth Bass. Smallmouth bass fishing effort was greatest in July (741 hours). Total catch of
smallmouth bass was 829 fish, with 56 harvested. Highest catch (273 fish) occurred in July. Anglers fished an average of 1.8 hours to catch a smallmouth bass during the survey. The mean length of harvested smallmouth bass was 16.0 inches, and the largest measured was a 21.5-inch fish.

Largemouth Bass (Table 2, Figure 5)
Fishing effort directed at largemouth bass was 67 hours during the 2016-17 season. Largemouth bass fishing effort was greatest in October (30 hours). Total catch of largemouth bass was 15 fish, with a harvest of 3 fish. Highest catch (7 fish) occurred in August. Anglers fished an average of 42.2 hours to catch a largemouth bass during the survey.

Panfish (Table 2, Figures 6-10)

Yellow perch were the most sought after panfish species during the survey. Fishing effort directed at yellow perch was 1,391 hours. Total catch of yellow perch was 3,600 fish, with 302 being harvested. The mean length of yellow perch harvested was 8.2 inches.

Bluegills received 612 hours of directed fishing effort. Total catch of bluegills was 1,082 fish, with 109 harvested. The mean length of bluegills harvested was 6.9 inches.

Black crappies received 69 hours of directed fishing effort. Anglers caught 11 black crappies and harvested 3 fish. The one harvested black crappie observed by the creel clerk was 13.2 inches.

Pumpkinseeds were also caught during the 2016-17 season; however, anglers only caught 20 pumpkinseeds and none were harvested.

Rock bass received only 81 hours of directed fishing effort. Anglers caught 1,040 rock bass and harvested 29 fish. The mean length of rock bass harvested was 7.4 inches.

ACKNOWLEDGMENTS
Completion of this survey was possible because of the efforts of the following fisheries management and treaty fisheries staff: Lawrence Eslinger, Jeff Blonski, Joelle Underwood, Jason Halverson, John Kubisiak, Steve Timler, Tim Tobias, and Steve Gilbert. John Logan and Mike Rynski were the creel clerks on Laura Lake during the survey period.

We thank all the anglers who took the time to offer information about their fishing trip to the survey clerk. Without their cooperation the survey would not have been possible.

The Department thanks our cooperators, Bob and Laura Munson and Bob Jackson, who generously allowed the Department to keep a boat and/or snowmobile on their property during this survey.

This creel report was reviewed by John Kubisiak, Lawrence Eslinger, and Hadley Boehm of the Wisconsin Department of Natural Resources, Woodruff, Wisconsin.

Additional copies of this report, and those covering other local lakes, can be obtained from the Woodruff DNR or online at:
http://dnr.wi.gov/topic/Fishing/north/trtycrlsvrvys.html
Table 1. Sportfishing effort summary, Laura Lake, 2016-17 season.

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of Angler Party Interviews</th>
<th>Total Angler Hours</th>
<th>Total Angler Hours/Acre</th>
<th>1998-99 Total Angler Hours/Acre</th>
<th>Vilas County Average Hours/Acre</th>
<th>Ceded Territory Average Hours/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>14</td>
<td>202</td>
<td>0.3</td>
<td>1.4</td>
<td>5.3</td>
<td>4.9</td>
</tr>
<tr>
<td>June</td>
<td>33</td>
<td>968</td>
<td>1.6</td>
<td>2.2</td>
<td>6.9</td>
<td>6.3</td>
</tr>
<tr>
<td>July</td>
<td>61</td>
<td>1455</td>
<td>2.4</td>
<td>1.9</td>
<td>7.3</td>
<td>6.7</td>
</tr>
<tr>
<td>August</td>
<td>36</td>
<td>866</td>
<td>1.4</td>
<td>2.4</td>
<td>6.4</td>
<td>5.4</td>
</tr>
<tr>
<td>September</td>
<td>30</td>
<td>428</td>
<td>0.7</td>
<td>1.0</td>
<td>4.2</td>
<td>3.3</td>
</tr>
<tr>
<td>October</td>
<td>35</td>
<td>1054</td>
<td>1.8</td>
<td>0.9</td>
<td>2.0</td>
<td>1.5</td>
</tr>
<tr>
<td>December</td>
<td>4</td>
<td>140</td>
<td>0.2</td>
<td>0.2</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td>January</td>
<td>5</td>
<td>240</td>
<td>0.4</td>
<td>0.4</td>
<td>1.1</td>
<td>1.7</td>
</tr>
<tr>
<td>February</td>
<td>13</td>
<td>420</td>
<td>0.7</td>
<td>1.4</td>
<td>1.2</td>
<td>1.6</td>
</tr>
<tr>
<td>March</td>
<td>2</td>
<td>46</td>
<td>0.1</td>
<td>-</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>*Summer Total</td>
<td>209</td>
<td>4974</td>
<td>8.3</td>
<td>9.9</td>
<td>32.1</td>
<td>28.1</td>
</tr>
<tr>
<td>*Winter Total</td>
<td>24</td>
<td>846</td>
<td>1.4</td>
<td>2.1</td>
<td>3.1</td>
<td>4.6</td>
</tr>
<tr>
<td>Grand Total</td>
<td>233</td>
<td>5819</td>
<td>9.7</td>
<td>12.0</td>
<td>35.2</td>
<td>32.7</td>
</tr>
</tbody>
</table>

*"Summer" is May-October; "Winter" is December-March

**Number of Angler Party Interviews** is the number of groups of anglers interviewed by the creel clerk. A party is considered the members of a group who fish together in the same boat, ice shanty, or from shore. The clerk fills out one interview form for each group of anglers. The number of individual anglers actually contacted by the clerk is usually much greater than the number of groups listed in this table since most groups consist of more than one angler.

**Total Angler Hours** is the estimated total number of hours that anglers spent fishing on Laura Lake during each month surveyed.

**Total Angler Hours/Acre** is the total angler hours divided by the area of the lake in acres. This is useful in order to compare effort on Laura Lake to other lakes.

**1998-99 Total Angler Hours/Acre** is the total angler hours divided by the area of the lake in acres. This is from the previous creel survey that took place on Laura Lake.

**County Average Hours/Acre** is the average angler effort in hours per acre for county lakes that have been surveyed since 1990. This value is useful for fishing pressure comparisons with other waters.

**Ceded Territory Average Hours/Acre** is the average angler effort in hours per acre for inland lakes in the Ceded Territory that have been surveyed since 1990. This value can be used to compare Laura Lake to other lakes in northern Wisconsin.
Table 2. Comparison of creel survey synopses, Laura Lake, 2016-17 and 1998-99 fishing seasons.

**CREEL YEAR: 2016-17**

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>DIRECTED EFFORT (Hours)</th>
<th>PERCENT OF TOTAL</th>
<th>TOTAL CATCH</th>
<th>SPECIFIC CATCH RATE (Hrs/Fish) *</th>
<th>TOTAL HARVEST</th>
<th>SPECIFIC HARVEST RATE (Hrs/Fish) **</th>
<th>MEAN LENGTH OF HARVESTED FISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walleye</td>
<td>1665</td>
<td>20.5%</td>
<td>125</td>
<td>13.6</td>
<td>89</td>
<td>18.6</td>
<td>15.0</td>
</tr>
<tr>
<td>Northern Pike</td>
<td>11</td>
<td>0.1%</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Muskellunge</td>
<td>2883</td>
<td>35.5%</td>
<td>142</td>
<td>25.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Smallmouth Bass</td>
<td>1353</td>
<td>16.6%</td>
<td>829</td>
<td>1.8</td>
<td>56</td>
<td>32.3</td>
<td>16.0</td>
</tr>
<tr>
<td>Largemouth Bass</td>
<td>67</td>
<td>0.8%</td>
<td>15</td>
<td>42.2</td>
<td>3</td>
<td>4.6</td>
<td>8.2</td>
</tr>
<tr>
<td>Yellow Perch</td>
<td>1391</td>
<td>17.1%</td>
<td>3600</td>
<td>0.5</td>
<td>302</td>
<td>4.6</td>
<td>8.2</td>
</tr>
<tr>
<td>Bluegill</td>
<td>612</td>
<td>7.5%</td>
<td>1082</td>
<td>0.8</td>
<td>109</td>
<td>5.8</td>
<td>6.9</td>
</tr>
<tr>
<td>Black Crappie</td>
<td>69</td>
<td>0.8%</td>
<td>11</td>
<td>3</td>
<td>3</td>
<td>13.2</td>
<td>6.9</td>
</tr>
<tr>
<td>Pumpkinseed</td>
<td>0</td>
<td>0.0%</td>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rock Bass</td>
<td>81</td>
<td>1.0%</td>
<td>1040</td>
<td>0.8</td>
<td>29</td>
<td>3.5</td>
<td>7.4</td>
</tr>
</tbody>
</table>

* A blank cell in this column indicates that no fish of a given species were caught by anglers who specifically targeted that species.

**CREEL YEAR: 1998-99**

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>DIRECTED EFFORT (Hours)</th>
<th>PERCENT OF TOTAL</th>
<th>TOTAL CATCH</th>
<th>SPECIFIC CATCH RATE (Hrs/Fish)</th>
<th>TOTAL HARVEST</th>
<th>SPECIFIC HARVEST RATE (Hrs/Fish)</th>
<th>MEAN LENGTH OF HARVESTED FISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walleye</td>
<td>3416</td>
<td>44.2%</td>
<td>1381</td>
<td>2.5</td>
<td>452</td>
<td>7.6</td>
<td>14.2</td>
</tr>
<tr>
<td>Muskellunge</td>
<td>2614</td>
<td>33.9%</td>
<td>22</td>
<td>172.4</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Smallmouth Bass</td>
<td>102</td>
<td>1.3%</td>
<td>40</td>
<td>4.4</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Largemouth Bass</td>
<td>0</td>
<td>0.0%</td>
<td>6</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Yellow Perch</td>
<td>1556</td>
<td>20.2%</td>
<td>3456</td>
<td>0.5</td>
<td>1702</td>
<td>0.9</td>
<td>8.8</td>
</tr>
<tr>
<td>Bluegill</td>
<td>34</td>
<td>0.4%</td>
<td>25</td>
<td>1.4</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Rock Bass</td>
<td>0</td>
<td>0.0%</td>
<td>761</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 2. Northern pike sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 3. Muskellunge sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 4. Smallmouth bass sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 5. Largemouth bass sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 6. Yellow perch sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 7. Bluegill sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 8. Black crappie sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 9. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.
Figure 10. Rock bass sportfishing effort, catch, harvest, and length distribution, Laura Lake, during 2016-17 season.