Treaty Fisheries Publication

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Treaty Fisheries Technicians
INTRODUCTION

Fish populations can fluctuate due to natural forces like weather, predation or competition; management actions like stocking, regulations or habitat improvement; habitat loss and harvest impacts. Wisconsin Department of Natural Resources fisheries crews regularly conduct fishery surveys on 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, measuring such parameters as species composition, population size, reproductive success, size and age distribution and growth rates. The other key component of the fishery that we often need to measure is 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. The survey is conducted 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 estimate catch and harvest of each species, catch and harvest rates, and fishing effort by month, as well as for the year in total. Keep in mind that these are 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 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 few minutes 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. Numbers of fish caught and harvested
4. Catch and harvest rates

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

GENERAL LAKE INFORMATION

Location
Range Line Lake is located in Forest County near the town of Wabeno.

Physical Characteristics
Range Line Lake is an 82-acre lake with a maximum depth of 11 feet. Littoral substrate consists primarily of muck, gravel, rubble, with lesser amounts of boulders and sand. Range Line Lake contains hard, slightly alkaline, clear water of low transparency.

Seasons Surveyed
The period referred to in this report as the 2018 fishing season ran from May 5, 2018 through October 31, 2018. This creel survey was only conducted during the open water period due to expected low fishing pressure during winter months.

Weather
Ice-out on Range Line Lake was around May 2, 2018.

Fishing Regulations
The following seasons, daily bag limits, and length limits were in place on Range Line Lake during the 2018-19 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>5/5-3/3</td>
<td>5</td>
<td>14&quot;</td>
</tr>
<tr>
<td>Smallmouth Bass</td>
<td>5/5-6/15</td>
<td>Catch&amp;Release</td>
<td></td>
</tr>
<tr>
<td>Musky</td>
<td>5/26-11/30</td>
<td>1</td>
<td>40&quot;</td>
</tr>
<tr>
<td>Northern Pike</td>
<td>5/5-3/3</td>
<td>5</td>
<td>none</td>
</tr>
<tr>
<td>Walleye</td>
<td>5/5-3/3</td>
<td>3</td>
<td>15&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20&quot;-24&quot; Protected Slot, 1&gt;24&quot;</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 1-8. Information presented about species whose fishing season extends beyond March 3 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 CATCH AND HARVEST
Calculated number of fish of the indicated species caught or harvested by all anglers, regardless of targeted species.

3. 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
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 fish measured by the creel survey clerk are reported.

CREEL SURVEY RESULTS AND DISCUSSION

Survey Logistics
We encountered no unusual problems conducting the survey or calculating the projections contained in the report. This was the first time the Department conducted a creel survey on Range Line Lake.

General Angler Information
Anglers spent 1,831 hours, or 22.3 hours per acre, fishing Range Line Lake during the 2018 open water season (Table 1). That was more than the Forest County average of 21.1 hours per acre. May was the most heavily fished month (747 hours), and fishing effort was lightest in October (56 hours). The creel clerks were able to conduct 135 interviews throughout the survey.

RESULTS BY SPECIES

Walleye (Table 2, Figure 1)
Walleye received the most fishing effort of any gamefish species during the season. Anglers spent 946 hours targeting Walleye. The greatest fishing effort for Walleye was in May (430 hours). October had the least amount of Walleye fishing effort (48 hours). Total catch of Walleye was 327 fish, with a harvest of 85. Highest catch (156 fish) and harvest (55 fish) occurred in May. Anglers fished an average of 2.9 hours to catch, and 11.1 hours to harvest, a Walleye during the survey. The mean length of harvested Walleye was 17.1 inches, and the largest measured was a 21.2-inch fish.

Northern Pike (Table 2, Figure 2)
Fishing effort directed at Northern Pike was 190 hours during the season. Northern Pike fishing effort was greatest in May (73 hours). Total catch of Northern Pike was 256 fish, with a harvest of 60. Anglers fished an average of 3.0 hours to catch a Northern Pike during the survey. The mean length of harvested Northern Pike was 23.2 inches, and the largest measured was a 31.1-inch fish.

Largemouth Bass (Table 2, Figure 3)
Fishing effort directed at Largemouth Bass was 318 hours during the season. Largemouth Bass fishing effort was greatest in July (164 hours). Total catch of Largemouth Bass was 490 fish, with a harvest of 17. Highest catch (183 fish) occurred in July. Anglers fished an average of 1.1 hours to catch a Largemouth Bass during the survey. The mean length of harvested Largemouth Bass was 15.9 inches, and the largest measured was a 16.4-inch fish.

Panfish (Table 2, Figures 4-7)
Yellow Perch received 224 hours of directed fishing effort. Total catch of Yellow Perch was 74 fish, with 10 harvested. The mean length of Yellow Perch harvested was 7.8 inches.
Bluegill were the most sought after panfish species during the survey. Fishing effort directed at Bluegill was 537 hours. Total catch of Bluegill was 1,215 fish, with 195 harvested. The mean length of Bluegill harvested was 6.8 inches.

Black Crappie received 358 hours of directed fishing effort. Anglers caught 316 Black Crappie and harvested 66. The mean length of Black Crappie harvested was 8.5 inches.

Pumpkinseed were also caught during the season in very low numbers and no harvest was documented.

Common Carp (Table 2, Figure 8)

Common Carp are widespread in southern Wisconsin, but Range Line is one of just a handful of waters in the north with a Carp population. Fishing effort directed at Common Carp was 150 hours during the season. Common Carp fishing effort was greatest in May (112 hours). Total catch of Common Carp was 29 fish, with a harvest of 15 (mean length of 28.8 inches). Highest catch (27 fish) occurred in May. Anglers fished an average of 8.6 hours to catch a Common Carp during the survey.

ACKNOWLEDGMENTS

The Department would like to 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.

We also thank our cooperator, Duwayne Brockman, who generously allowed the Department to keep a boat on his property during this survey.

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, Bob Consolo, Greg Matzke, and Katie Renschen. Creel clerks on Range Line Lake during the survey period were Angelica Komarek, Shannon Morrell, David Ushakow, and Aaron Schiller.

This creel report was reviewed by John Kubisiak, Lawrence Eslinger, and Greg Matzke of the Wisconsin Department of Natural Resources.

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/trtycrlsrvys.html
Table 1. Sportfishing effort summary, Range Line Lake, 2018 season; compared with Forest County and Ceded Territory averages.

<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>Forest County Average Hours/Acre</th>
<th>Ceded Territory Average Hours/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>31</td>
<td>747</td>
<td>9.1</td>
<td>3.8</td>
<td>5.0</td>
</tr>
<tr>
<td>June</td>
<td>24</td>
<td>232</td>
<td>2.8</td>
<td>4.5</td>
<td>6.4</td>
</tr>
<tr>
<td>July</td>
<td>44</td>
<td>441</td>
<td>5.4</td>
<td>5.3</td>
<td>6.8</td>
</tr>
<tr>
<td>August</td>
<td>16</td>
<td>150</td>
<td>1.8</td>
<td>4.3</td>
<td>5.5</td>
</tr>
<tr>
<td>September</td>
<td>16</td>
<td>205</td>
<td>2.5</td>
<td>2.4</td>
<td>3.3</td>
</tr>
<tr>
<td>October</td>
<td>4</td>
<td>56</td>
<td>0.7</td>
<td>0.8</td>
<td>1.5</td>
</tr>
<tr>
<td>Grand Total</td>
<td>135</td>
<td>1831</td>
<td>22.3</td>
<td>21.1</td>
<td>28.5</td>
</tr>
</tbody>
</table>

**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 Range Line 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 Range Line Lake to other lakes.

**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 Range Line Lake to other lakes in northern Wisconsin.
Table 2. Creel survey synopsis, Range Line Lake, 2018 fishing season.

CREEL YEAR: 2018

<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>946</td>
<td>34.3%</td>
<td>327</td>
<td>2.9</td>
<td>85</td>
<td>11.1</td>
<td>17.1</td>
</tr>
<tr>
<td>Northern Pike</td>
<td>190</td>
<td>6.9%</td>
<td>256</td>
<td>3.0</td>
<td>60</td>
<td>11.1</td>
<td>23.2</td>
</tr>
<tr>
<td>Largemouth Bass</td>
<td>318</td>
<td>11.5%</td>
<td>490</td>
<td>1.1</td>
<td>17</td>
<td>43.7</td>
<td>15.9</td>
</tr>
<tr>
<td>Yellow Perch</td>
<td>224</td>
<td>8.1%</td>
<td>74</td>
<td>4.5</td>
<td>10</td>
<td>23.2</td>
<td>7.8</td>
</tr>
<tr>
<td>Bluegill</td>
<td>537</td>
<td>19.4%</td>
<td>1215</td>
<td>0.5</td>
<td>195</td>
<td>3.2</td>
<td>6.8</td>
</tr>
<tr>
<td>Black Crappie</td>
<td>358</td>
<td>13.0%</td>
<td>316</td>
<td>1.8</td>
<td>66</td>
<td>5.6</td>
<td>8.5</td>
</tr>
<tr>
<td>Pumpkinseed</td>
<td>38</td>
<td>1.4%</td>
<td>7</td>
<td>5.3</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common Carp</td>
<td>150</td>
<td>5.4%</td>
<td>29</td>
<td>8.6</td>
<td>15</td>
<td>9.7</td>
<td>28.8</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.
** A blank cell in this column indicates that no fish of a given species were harvested by anglers who specifically targeted that species.
Figure 1. Walleye sportfishing effort, catch, harvest, and length distribution, Range Line Lake, 2018.
Figure 2. Northern Pike sportfishing effort, catch, harvest, and length distribution, Range Line Lake, 2018.
Figure 3. Largemouth Bass sportfishing effort, catch, harvest, and length distribution, Range Line Lake, 2018.
Figure 4. Yellow Perch sportfishing effort, catch, harvest, and length distribution, Range Line Lake, 2018.
Figure 5. Bluegill sportfishing effort, catch, harvest, and length distribution, Range Line Lake, 2018.
Figure 6. Black Crappie sportfishing effort, catch, harvest, and length distribution, Range Line Lake, 2018.
Figure 7. Pumpkinseed sportfishing effort, catch, harvest, and length distribution, Range Line Lake, 2018.
Figure 8. Common Carp sportfishing effort, catch, harvest, and length distribution, Range Line Lake, 2018.