Survey Method

- All streams are sampled according to WDNR wadeable streams monitoring protocols. Miller Creek is on a 12 year rotation schedule with six sites identified for the segment of stream in Shawano County.
- All sampling stations are electrofished with either a towed barge shocker (pictured below) or backpack shocker.
- Sampling distance is at least 35 times the mean stream width or a minimum of 330 feet (100 meters).
- All trout and other gamefish are measured for length and examined for fin-clips.
- In at least one stream segment (if multiple stations are being sampled) all fish species are collected and counted for calculation of an Index of Biotic Integrity (IBI).

Metric Descriptions

- **Catch per unit effort (CPUE)** is an indirect method of measuring fish population relative abundance. For all trout surveys we typically quantify CPUE by the number and size of trout captured per mile of stream. CPUE indexes are compared to statewide streams by percentile (PCTL). For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state. CPUE percentiles can also be used to categorize trout abundance by 33rd (low density), 66th (moderate), 90th (high), and 95th (very high) benchmarks.

- **Index of Biotic Integrity (IBI)** is a rating of environmental quality based on fish assemblage. Scores of 90-100 would indicate excellent quality while scores less than 30 would indicate poor quality. Our analysis utilizes the IBI for Wisconsin coldwater streams (max. daily mean water temp. usually <22°C). A coolwater stream IBI may also be reported when applicable.

- Metrics used to describe trout populations include average length, catch per unit effort (CPUE) and length frequency distribution.

### Survey Information

<table>
<thead>
<tr>
<th>Station</th>
<th>Survey Date</th>
<th>Station Length</th>
<th>Temperature (°F)</th>
<th>MSW</th>
<th>GPS (Start/Finish)</th>
<th>Gear</th>
<th>Dippers</th>
<th>IBI</th>
</tr>
</thead>
<tbody>
<tr>
<td>East of Mader Hill Rd.</td>
<td>08/16/2016</td>
<td>448 ft</td>
<td>69</td>
<td>12.8 ft</td>
<td>44.90472, -88.80111</td>
<td>Tow-Barge Shocker</td>
<td>3</td>
<td>NO</td>
</tr>
<tr>
<td>HWY – G</td>
<td>09/06/2016</td>
<td>623 ft</td>
<td>65</td>
<td>17.8 ft</td>
<td>44.86918, -88.78333</td>
<td>Tow-Barge Shocker</td>
<td>3</td>
<td>NO</td>
</tr>
<tr>
<td>Big Lake Rd.</td>
<td>08/22/2016</td>
<td>620 ft</td>
<td>64</td>
<td>17.7 ft</td>
<td>44.8718, -88.7869</td>
<td>Tow-Barge Shocker</td>
<td>3</td>
<td>NO</td>
</tr>
<tr>
<td>Railroad Grade- North of Townhall Rd.</td>
<td>08/16/2016</td>
<td>431 ft</td>
<td>69</td>
<td>12.3 ft</td>
<td>44.92500, -88.83694</td>
<td>Tow-Barge Shocker</td>
<td>3</td>
<td>YES</td>
</tr>
<tr>
<td>Townhall Rd.</td>
<td>08/22/2016</td>
<td>739 ft</td>
<td>64</td>
<td>21.1 ft</td>
<td>44.8826, -88.7940</td>
<td>Tow-Barge Shocker</td>
<td>3</td>
<td>NO</td>
</tr>
<tr>
<td>Railroad Grade - North of Anderson Rd.</td>
<td>08/16/2016</td>
<td>330 ft</td>
<td>70</td>
<td>6.0 ft</td>
<td>44.93611, -88.83194</td>
<td>Tow-Barge Shocker</td>
<td>3</td>
<td>YES</td>
</tr>
</tbody>
</table>
Overall, Miller Creek had very low brook trout density levels with 5+ inch trout in the 30th, 33rd, and 9th percentiles at stations where present.

Larger sized brook trout were not observed in this survey.

Young of year (YOY) and yearling brook trout were not observed in this survey.

The IBI value indicated fair overall environmental quality from the fish assemblage sampled in the Miller Creek.

This was the first time sampling on many of these sites. We are hopeful recent habitat work done by Stockbridge Munsee Conservation Department will increase trout numbers in years to come.

Beaver activity has also been an issue on this stream, creating silt and warmer water temperatures, both not conducive to trout habitat.

The Stockbridge Munsee Conservation department has removed beaver and beaver dams in recent years. They also returned a section of stream back to its natural channel, which had been rerouted years ago because of the railroad grade. It is hoped that these habitat improvements will provide more suitable trout habitat, improving the population in the future.

Northern Redbelly Dace (pictured left) is a small nongame species commonly found in headwater streams or beaver ponds. They prefer silt or detritus material. This fish typically appears in water too warm for trout.