Five years (2011-2015) of sampling wild trout streams with the PFBC Unassessed Waters Initiative

Dr. Jonathan Niles and Michael Bilger

Abstract
Since 2011 Susquehanna University has been a partner of the Pennsylvania Fish and Boat Commission’s Unassessed Waters Initiative. This cooperative program between the PFBC and colleges and universities seeks to collect biological data on previously unsampled (unassessed) streams across Pennsylvania to determine their status as possible new Wild Trout streams. Prior to this program which began in 2010, only 8% of the 62,725 streams across Pennsylvania had been sampled for biological data by the PFBC. Since 2011, Susquehanna University faculty, staff and students have surveyed 617 previously unassessed waters as part of the program. Sample sites have been predominately across north central Pennsylvania including the following major watersheds: Loyalsock Creek, Schrader Creek, Lycoming Creek, Buffalo Creek, Penns Creek, White Deer Creek, First Fork Sinnemahoning Creek. We found wild trout (brook and brown trout) in 52% of the streams (320 of the 617). A portion (17%) of sampled sites were found to be seasonally dry during the sampling. Brook trout were found in 293 (47%) of the streams. While brown trout were found in 128 (21%) of the streams. The Unassessed Waters Initiative has led to the designation of over 500 new wild trout streams, with many more to be added in the future.

Introduction
Pennsylvania has vast amount of streams, approximately 62,725 streams with 8,011 being named tributaries and 54,714 being un-named tributaries. 92% of PA streams unassessed with no biological data prior to 2010. Presence of wild trout in streams signify high quality cold water resources. Unassessed Waters Initiative (UWI) started by PA Fish and Boat Commission (PFBC) to survey streams lacking biological data and determine correct use. UWI program joint collaboration between PFBC and PA colleges. Program used help correctly classify and protect high quality streams from environmental alterations and degradation. All streams of PA, have a designated use, which is determined by DEP. PFBC sets wild trout designations on streams. Wild trout waters receive greater protection under PA Code (Chapter 93). Wetlands of wild trout streams protected as Exceptional Value Wetlands.

Methodology
• Streams sampled at closest point to mouth with mainstem.
• 100 meter long study section sampled using backpack electrofishing.
• Fish identified to species.
• Total length (mm) and weight (g) taken of each trout species.
• Aquatic macroinvertebrates were collected using Pennsylvania DEP protocols.
• Water chemistry data was taken at each site.

Results

<table>
<thead>
<tr>
<th>Species of trout</th>
<th>N = 194 (67%)</th>
<th>N = 100 (33%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trout Present</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No trout</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Cumulative statistics of Unassessed waters sampled from 2011-2015 by PFBC & Susquehanna University.

Results

Conclusions
• Lack of assessment of un-named tributaries.
• Un-named tributaries are important habitat for brook trout.
• Prioritization tool needed to identify streams with high likelihood of trout presence.
• Trout presence positively related to watershed area (> 1 sq km).
• Trout presence positively related to forest cover.

References

Table 2. Policy outcomes of Unassessed waters sampled 2011-2015 by PFBC & Susquehanna University.

Sponsors and Support

R.E. Mellon Foundation, National Fish and Wildlife Foundation, PA Fish and Boat Commission, Degensheim Foundation, Foundation for PA Watersheds, Loyalsock Creek Watershed Association, Susquehanna River Heartland Coalition for Environmental Studies, Trout Unlimited, Potter and Sullivan County Conservation District, Lewis Lumber Company, Landowners in the watersheds we have worked.

Table 2. Policy outcomes of Unassessed waters sampled 2011-2015 by PFBC & Susquehanna University.

Figure 3. Distribution of trout species in unassessed waters sampled from 2011-2015.

Figure 4. Locations of trout species (brook and brown) found in unassessed waters sampled from 2011-2015.

Figure 5, 6, & 7. Susquehanna University’s Unassessed Waters sampling crews in 2011, 2014, & 2015.

Figure 6. Presence of trout in unassessed waters sampled from 2011-2015.

Figure 7. Table 1. Cumulative statistics of Unassessed waters sampled from 2011-2015 by PFBC & Susquehanna University.

Susquehanna University. 2015 is to date, another 150 streams expected from partners according to PFBC.

Step 1: Identification of streams as possible new Wild Trout streams. Prior to this program which began in 2010.

Step 2: Sampling of streams by PFBC and Susquehanna University

Step 3: Added as a Wild Trout stream by PFBC

By UWI partners

% Wild Trout
94% 59% 52% 38% 48% 42% 46%

Susquehanna University
65% 60% 67% 60% 65% 60% 65%


