Susquehanna River update
Mid-Atlantic Smallmouth Bass health assessment
Harpers Ferry, WV
August 8, 2019

Mission: To protect, conserve, and enhance the Commonwealth’s aquatic resources and provide fishing and boating opportunities
Overview

- Study area
- **Update on adult abundance**
  - Adult abundance
  - Changes in age structure
- Regulatory changes
- Current fish health concerns
- On-going and current research
Update of abundance/population characteristics

- Annual, index period surveys
  - Middle Susquehanna – Juniata: mid-September to early October
  - Lower Susquehanna: October – early November
- Single pass, night boat electrofishing
- Standardize flow, seasonality, water temperature, and clarity
  - Make most comparable data set
Boat electrofishing catch per unit effort (cpue) of adult Smallmouth Bass at the middle Susquehanna River from 1990 to 2018
Proportion of young-of-year Smallmouth Bass with signs of disease captured during directed surveys at the middle Susquehanna River
Catch per unit effort (CPUE; fish/h) at age of adult Smallmouth Bass during boat electrofishing surveys at middle Susquehanna River during 1990 – 2012 surveys
Catch per unit effort (CPUE; fish/h) at age of adult Smallmouth Bass during boat electrofishing surveys at middle Susquehanna River during 1990 – 2017 surveys.
Discharge of the Susquehanna River at Harrisburg during period critical to YOY Smallmouth Bass survival for 2017-2019 compared to the median for the period of record.
Regulatory changes

- Adaptive management approach to regulations approved (July 2018)
  - Pro-actively strengthens/ weakens regulations based on monitoring data
  - Three metrics (CPUE ≥ age 1, CPUE ≥ 375 mm, PSD)
  - Had to achieve thresholds 3 of 5 most recent surveys

*Remove “Closed Season” during spring for 2019 season*
### 2018 data relative to recommendation

<table>
<thead>
<tr>
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<th>middle Susquehanna River</th>
<th>lower Susquehanna River</th>
<th>lower Juniata River</th>
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<tbody>
<tr>
<td>CPUE (≥ age -1)</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>CPUE (≥ 375 mm)</td>
<td>4</td>
<td>5</td>
<td>4</td>
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<tr>
<td>PSD</td>
<td>4</td>
<td>3</td>
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Lesions on adult bass

- Lesions observed on adult bass during October surveys
  - Middle Susquehanna: 2% (<0.3% - 7.5%)
  - Lower Susquehanna: 23% (one site)
- Appear similar to what was observed in fall/ winter 2011
- Angler reports from Mahantango to Brunner Island
- Submitted fish for analysis in October (Dock St.) and December (Brunner Island) to USFWS NE Fishery Center; April to USGS Leetown Science Ctr
Ongoing surveys and research

- Routine adult black bass surveys (Sept, Oct)
- Routine YOY black bass histopathology analysis
- Seasonal prevalence of melanistic activity (with USGS)
- YOY and adult Smallmouth Bass immune function (USGS-lead project)
Questions

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