Approaches to Monitoring Fish Passage Restoration Projects in an Urban Setting

Icthyoplankton, Trapping, and Electrofishing: Lessons Learned and Future Recommendations

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Woodrow Wilson Bridge History

- Built in 1961
- Crosses the Potomac River between Maryland and Virginia (I-495)
- 6 Lanes
- Unable to meet the needs of the public
- Impacts to wetlands, waters, and SAV
Comprehensive Watershed Approach

- Mitigation Projects
  - Wetland creation
  - SAV restoration
  - Shoreline stabilization
  - Fish passage restoration
- $55 million program
Fish Passage Restoration

- 30 miles of historic spawning habitat
- 23 fish blockages
  - Rock Creek
  - Northwest Branch
  - Sligo Creek
  - Indian Creek
  - Little Paint Branch
- Target species
  - Alewife
  - American Shad
  - American Eel
  - Blueback Herring
  - Striped Bass
  - White Perch
Types of Blockages

Man Made: Utility Lines, Concrete Fords, Dams, Grade Control Structures
Fish Passage Restoration

- riffle grade controls
  - Coastal Plain
  - Constructed in 4 sections
  - Mimic natural stream riffle
- Flow constrictor / step pool
  - Piedmont
  - Linear with multiple rock weirs
  - Steps within structures for flow variation
First Approach – Visual Surveys

- Required by permit
- Combined with electrofishing
  - Within riffle grade controls and step pools
- Problems
  - Number of people needed
  - Condition dependent
    - Flow
    - Water clarity
First Approach – Visual Surveys

- Electrofishing
  - Crews of 9 people
  - 3 days
  - 216 hours total
- Results
  - 1 rainbow trout
  - No migratory fish
Second Approach - Trapping

- Fyke nets with orange construction fence as a funnel
- Problems
  - Installing nets
  - Fish mortality
  - Turtles, ducks, etc.
  - Multiple trips
  - Weekends
  - Storms
Deployed traps from late March to early May
- Crews of 2
- 3 - 2hr visits per day
- 504 total hours

Results
- Alewife and blueback herring
Second Approach - Trapping

Figure 2: Northwest Branch Fish Passage Improvements
Third Approach - Ichthyoplankton

- Custom ichthyo net from Wildco
- Transect approach
Third Approach - Icthyoplankton
Third Approach - Icthyoplankton

Sampling conducted from late March to early May

- Field
  - Crews of 2
  - 3 – 2 hr trips per week
  - 72 total hours of field work

- Lab work
  - 40 hours total
Third Approach - Icthyoplankton

Figure 2: Northwest Branch Fish Passage Improvements
Urban Issues
Recommendations

- Go with icthyo!
- Survey for adults
- Have an expert
- Migratory fish listserve
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