South River Science Team

September 27, 2017

Meeting Notes

Mercury in Birds of the South River: *Greg Shriver, Univ. Delaware*

- Carolina Wrens were sampled at 9 locations along the South River and South Fork Shenandoah for the past 3 years (2015-2017). Downward trend seen at RRM 11.8 and 22 and appears to be unrelated to remediation efforts. No trends seen at other locations. The same can be said when comparing baseline (2015-2016) and post (2017) remediation results to historic results (pre-2015).
- Interesting facts about Carolina wrens: strongly philopatric (maintains territory, doesn't migrate), forms very strong pair bonds, eats insects and spiders and populations are highly effected (negatively) by days of snow cover and freezing temperatures.

Status of the NRD Settlement Restoration Programs: *Anne Condon, USFWS*

- NRD settlement is currently in the process of accepting proposals for 3 categories of the settlement. These include: Land protection, property acquisition, and recreational and wildlife enhancements ($19.5 million), Projects to improve water quality and fish habitat ($10 million) and Neotropical migratory songbird full life cycle restoration ($2.5 million). Information on how to submit projects can be found at http://naturalresources.virginia.gov/initiatives/dupont-settlements-grants Applications are due Monday October 9, 2017.

Status of TMDLs in the South River watershed area*: Tara Sieber, DEQ*

- An overview of the TMDL process in Virginia was given along with elements of what the Valley DEQ office has found to make a successful TMDL.

Renovation of the Front Royal Fish Hatchery: *Paul Bugas, DGIF*

- Working with DuPont to finalize plans for Front Royal Hatchery renovations. The work is being done to satisfy part of NRD settlement to produce smallmouth bass for supplemental stockings to the South and South Fork Shenandoah Rivers. Hopefully renovations will be complete in 2019.

Short and Long-term monitoring results: *Josh Collins, AECOM*

- STM Summary:
    - Increased Hg loading to South River not observed
    - Localized fluctuations in near-bank pore water THg at Constitution Park.
    - STM biota data consistent with baseline
    - Post-IM data a limited snapshot
    - Fall data collections in progress

- LTM Summary:
  - Inferences from new data may be premature
  - Localized fluctuations in some datasets such as pore water and smallmouth bass
  - LTM biota data consistent with baseline
- Path Forward:
  - Integrate fall datasets as available
  - Potential monitoring program modifications
  - Reduce frequency
  - Minimize media redundancy
  - Develop predictive regressions
  - Formalize recommendations Q1 2018
  - Graphs of data not presented at meeting but were added to end of presentation for those interesting in viewing the data results.

Proposed bank areas for remediation, status of designs: *Josh Collins and Cameron Dixon, AECOM*

- BMA Status: Constitution Park completed, City Shops in progress, and Allied Ready Mix, Shiloh Baptist Church and North Park in design phase.
- Constitution Park experienced some minor damage after high water event (vegetation was not established yet). Damage was repaired. Currently combatting invasive Japanese Knot Weed.
- City Shops mobilization and site preparation underway with anticipated completion data Dec. 2017/Jan 2018.
- Allied Ready Mix BMA approximately 600-700 feet long and will involve mostly capping but will have two removal areas. 30% design package submitted to DEQ. Final design submittal end of 2017. Hoping to begin construction following the completion of City Shops.
- Shiloh Baptist Church includes about 1300 feet of banks to be addressed with two potential soil removal areas. The removal area behind the church will be challenging and may require capping instead due to questionable stability of parking lot behind the church. Another challenge is the Greenway which needs to run behind the church and designed into project.

Results from EAM and RRM runs with post-remedial data: *Sagar Thakali, AECOM*

- General Objectives include identifying critical variables for a system, understand the system response to perturbations, keeping in mind that a model is a reasonable representation of the reality but is not the same as the reality.
- Statistical Models Summary
  - Limitations (temporal) and uncertainties remain on the modeled system response – one of several tools
  - Inferences about the IRM based on the preliminary Post-IM data are premature
  - Modeled predict declines in fish tissue THg in response to the progressive completion of IRM within 0-2 miles
  - Greatest response in fish tissue THg is predicted within or immediately downstream of 0-2 miles
- Relative Risk Model (RRM) Summary

- o Relative risk lower in Region 1 than in downstream Regions 2-5
  - o Premature to evaluate preliminary Post-IM data
  - o Simulations predict insufficient decrease in RR scores in downstream regions to reach Region 1 levels
  - o Relative risks based on background similar among regions but vary, reflecting risk contributions from non-mercury factors.
- Enhanced Adaptive Management (EAM) Spreadsheet Model
  - o Simulations were run looking at Natural Recovery, IRM Approach and Complete Bank Control and Post-IM CP (based on preliminary "post-remediation data") using uniform weighted criteria and average weight criteria. Results show which criteria are driving the scores and how the criteria are weighted matters.
- Path Forward
  - o Preliminary model applications complete
  - o EAM criteria and weights critical
  - o Post-IM data premature for evaluation
  - o Model integrations in progress
  - o Update calculations as more data become available
  - o Update/refine models as necessary
  - o Structure
  - o Criteria
  - o Develop/enhance predictive capability
- Ralph presented the question of how to present this data to the public causing lots of discussion. Could there be a role for the Regulatory Advisory Panel (RAP) to help figure out how to package for public presentations?

Next SRST Meeting January 24, 2018

Next ROPs meeting November 8, 2017

Next RAP meeting Dec 5-7, 2017 (one of those dates)