

AOC 4 2017 Fall Monitoring Program Update

Former DuPont Waynesboro Site, Virginia

Area of Concern (AOC) 4



September 27, 2017

AECOM

Agenda

- Objectives
- Status of reports/datasets
- Preliminary data review
 - STM
 - LTM
- Observations & path forward
- Integration with models



Objectives

- Review first “Post-IM” monitoring data
- Further inform model development
- Begin discussion of future of monitoring program

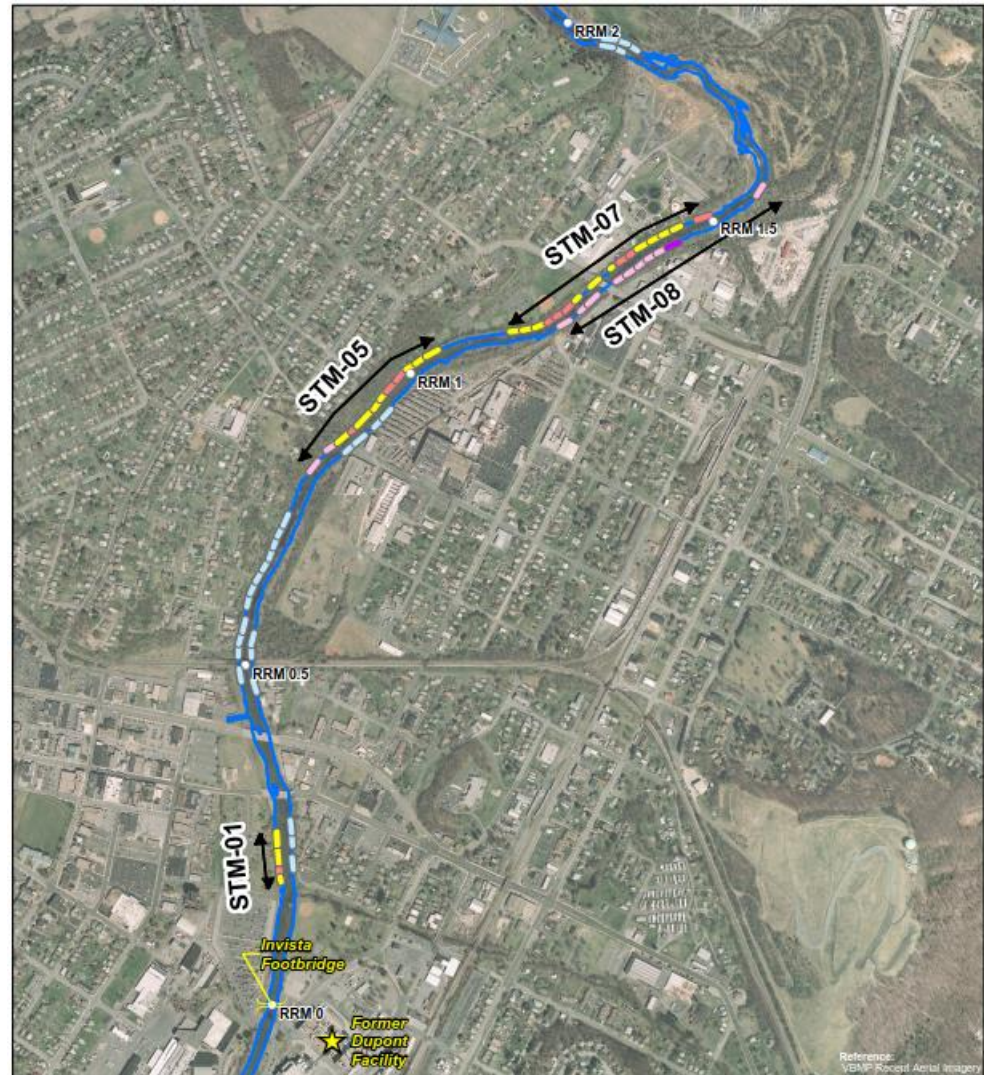


Short-term Monitoring

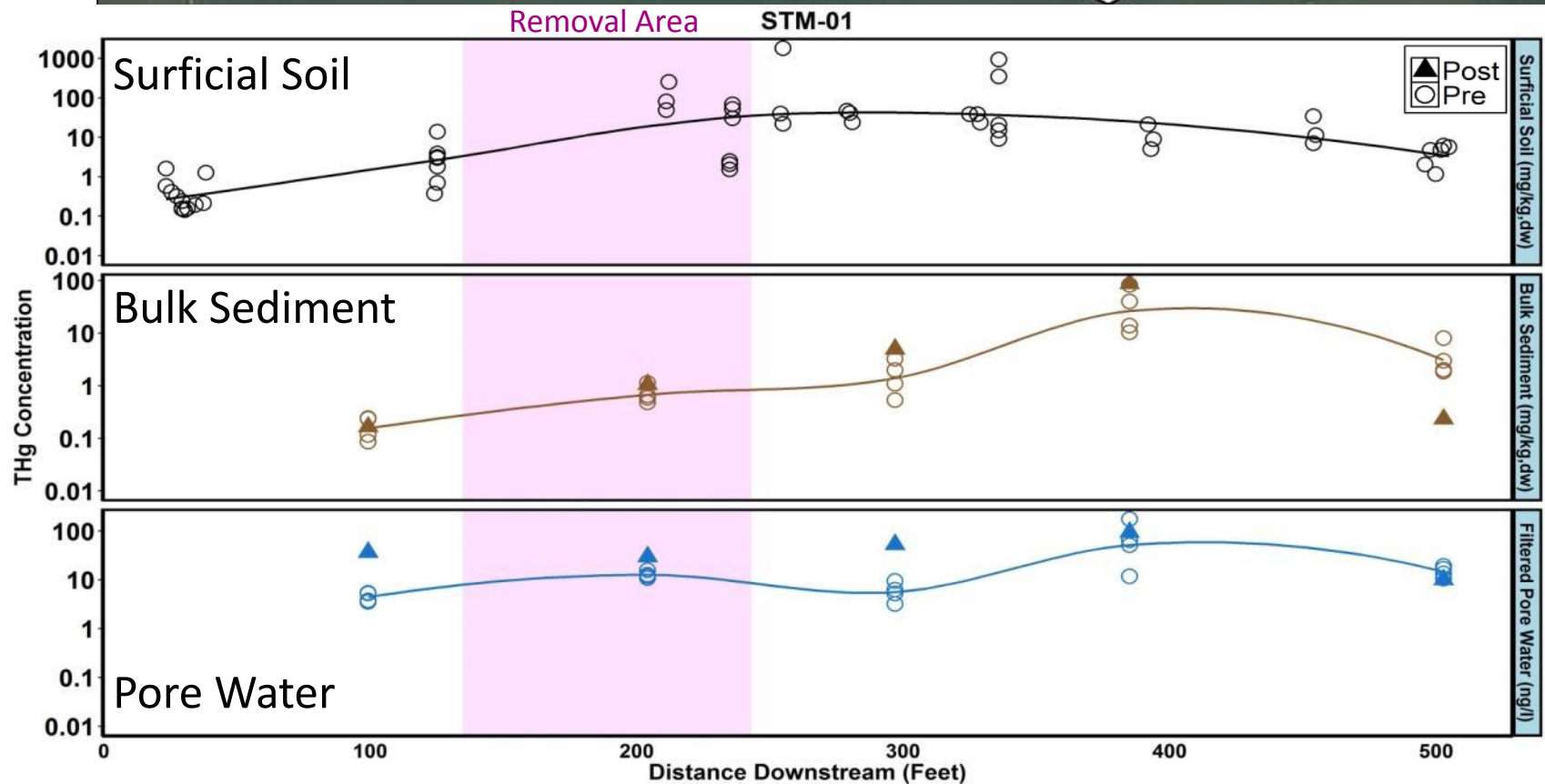
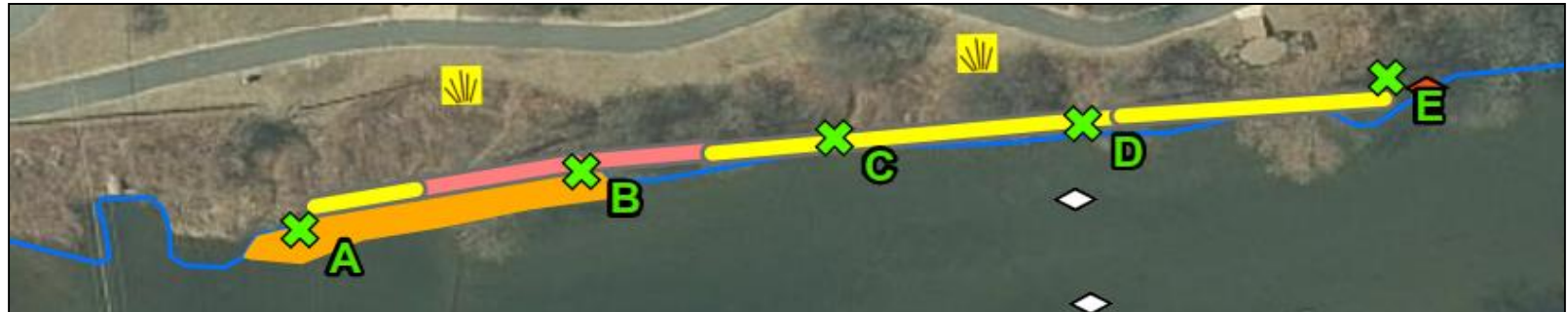
- Monitoring locations
- Data review
- Path forward

STM – Station Locations

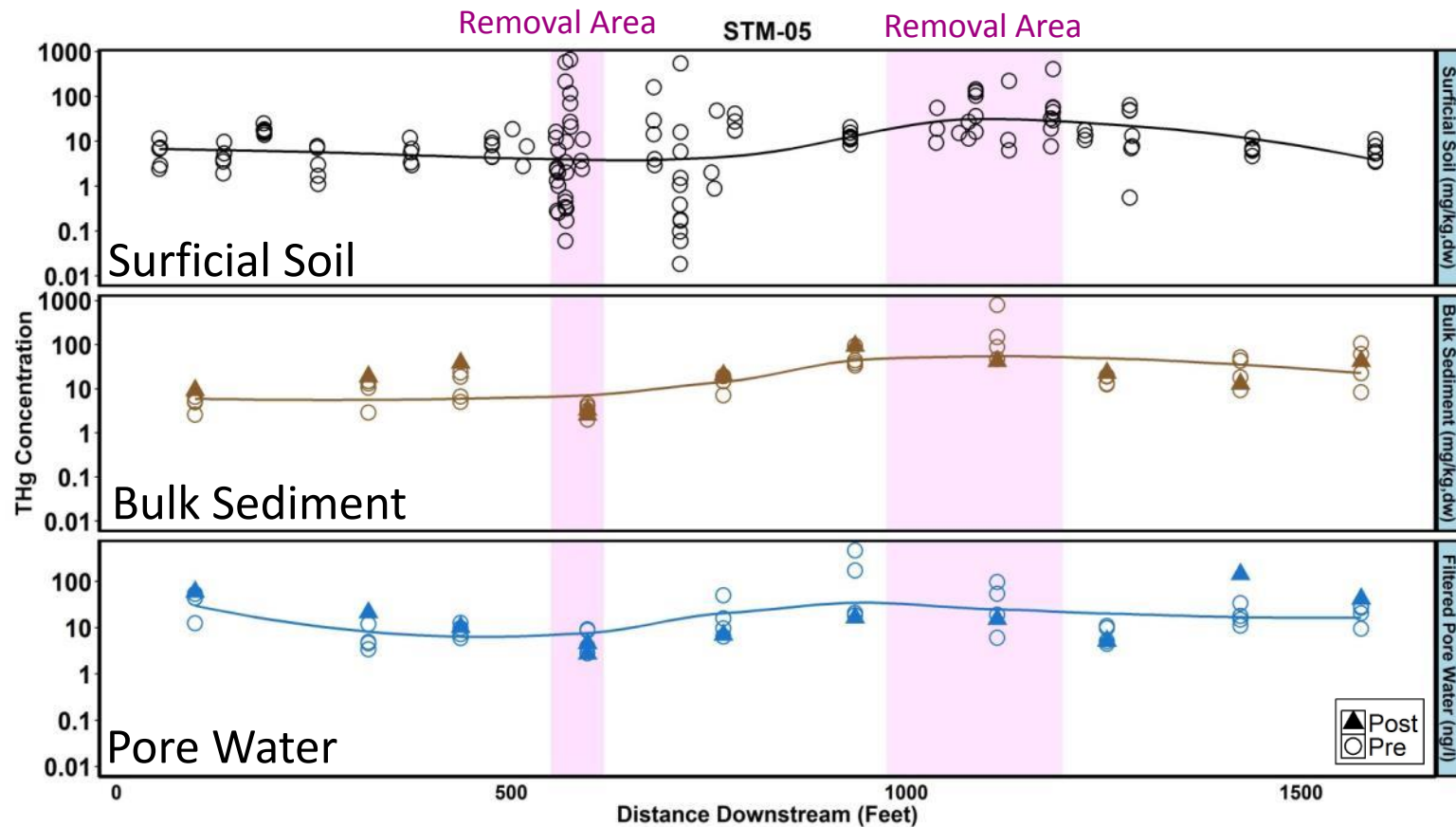
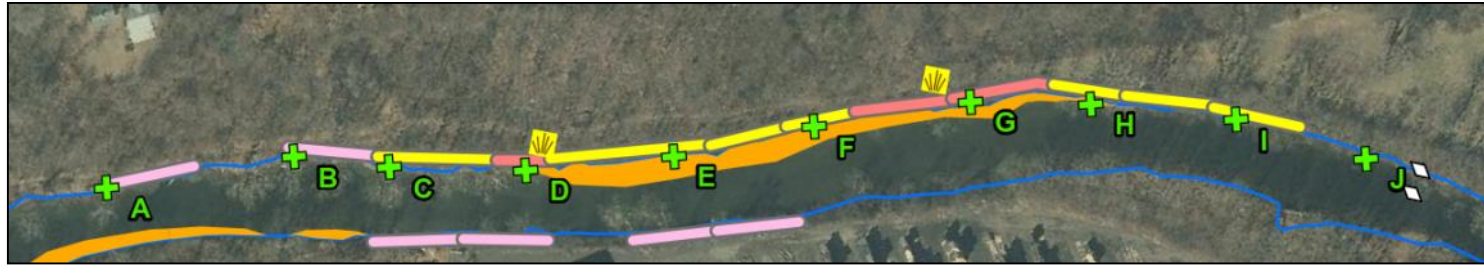
- STM-01
 - Constitution Park
 - RRM 0.2
- STM-05
 - North Park
 - RRM 0.8 – 1.3
- STM-07
 - Wastewater Treatment Plant
 - RRM 1.3 - 1.5
- STM-08
 - Allied Ready Mix
 - RRM 1.3 - 1.5



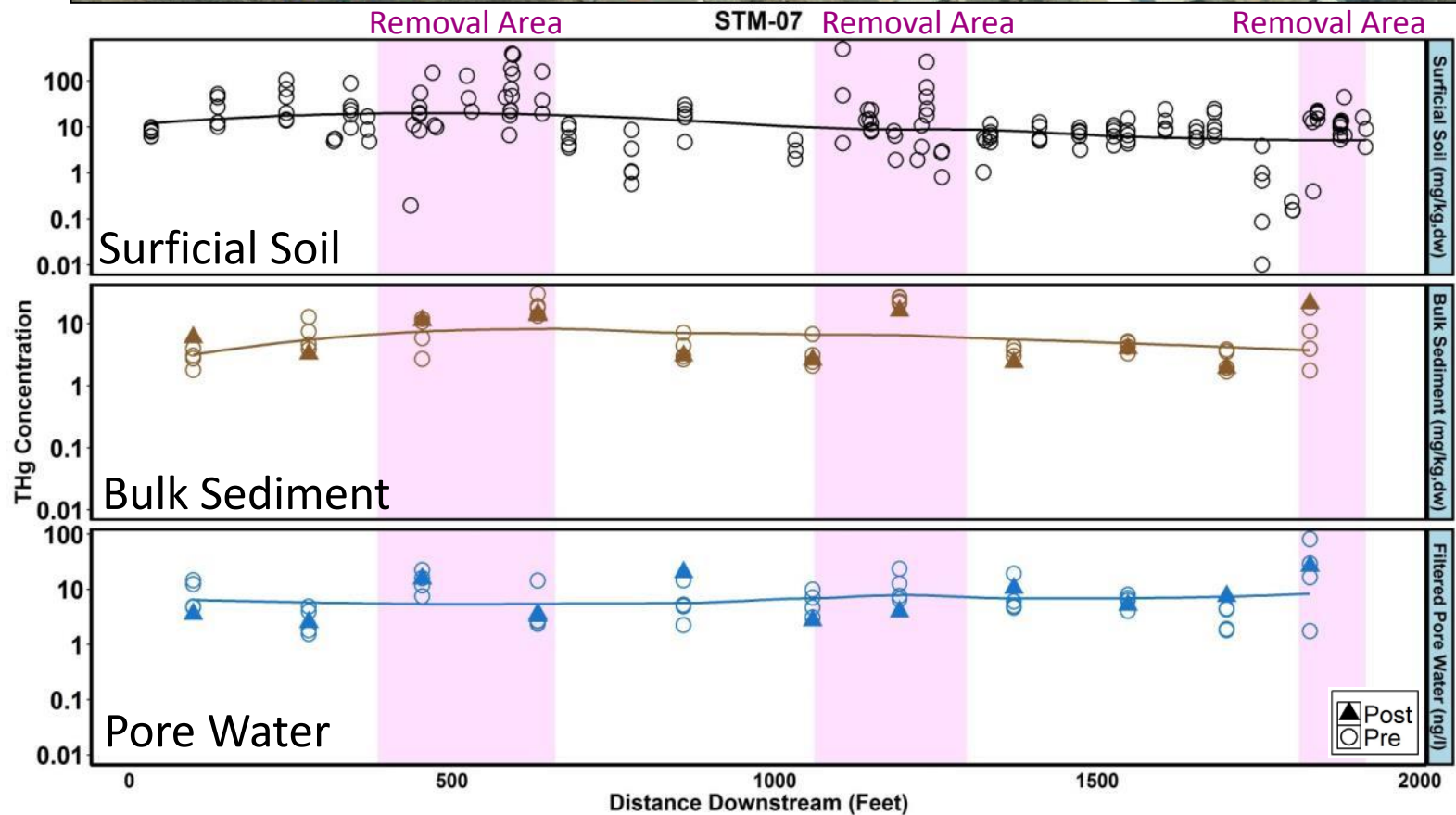
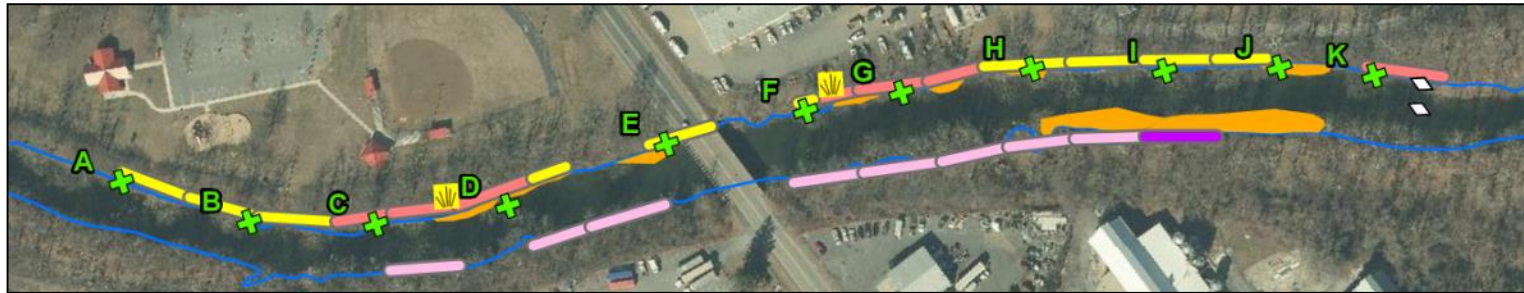
Post-IM Data – Constitution Park BMA



Baseline Data – STM-05 (North Park)



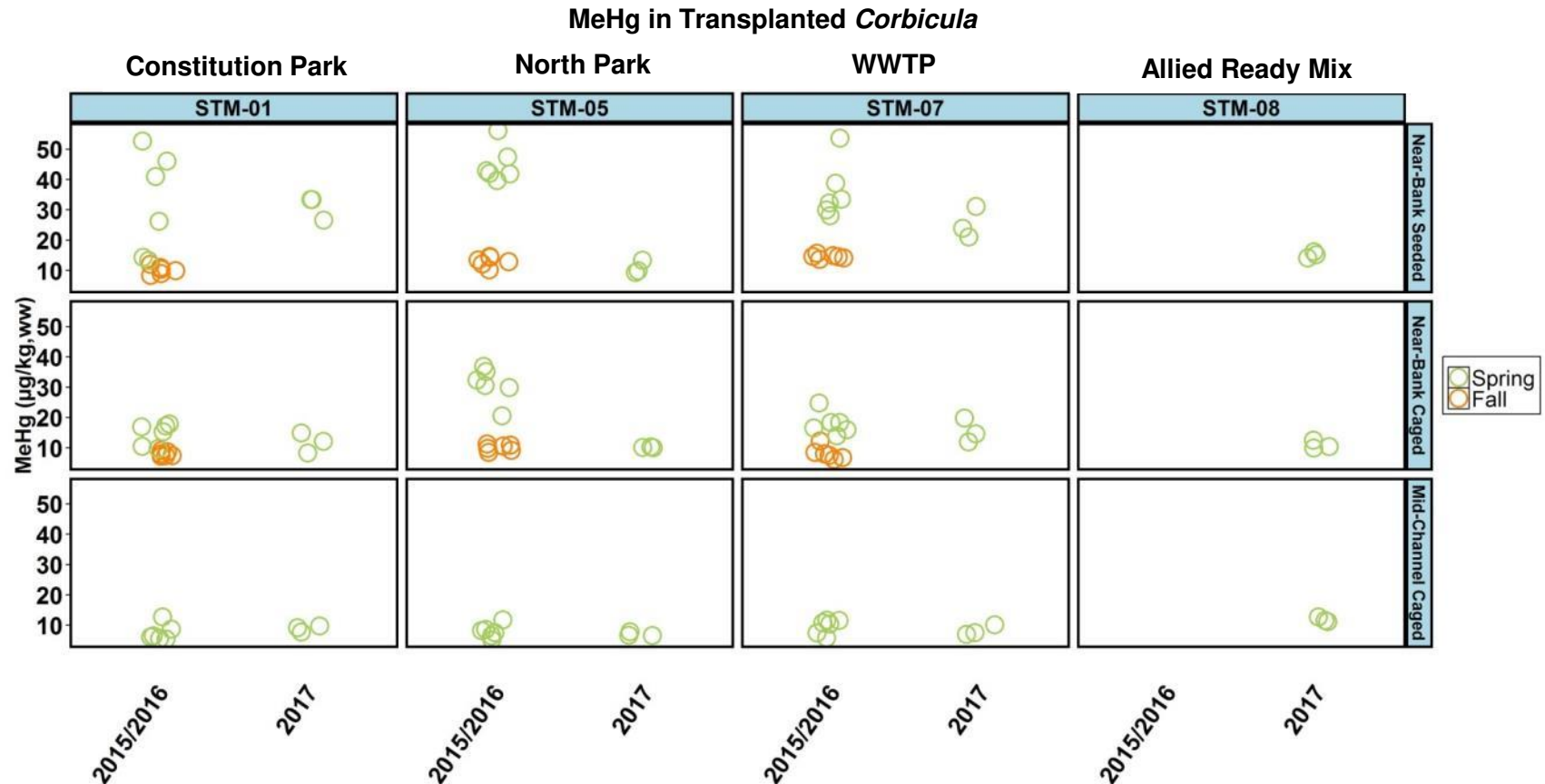
Baseline Data – STM-07 (WWTP)



STM Update

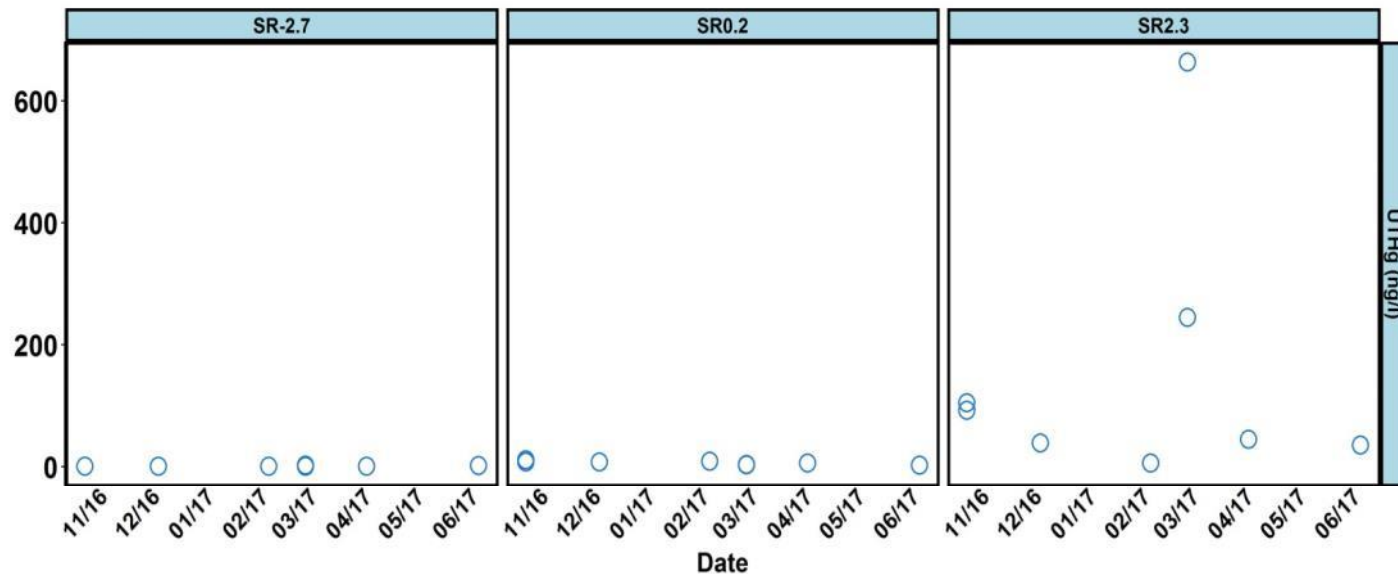
– Mercury in biotic media:

- Follow similar spatial/temporal trends to baseline
- No discernible trends associated w/remedy



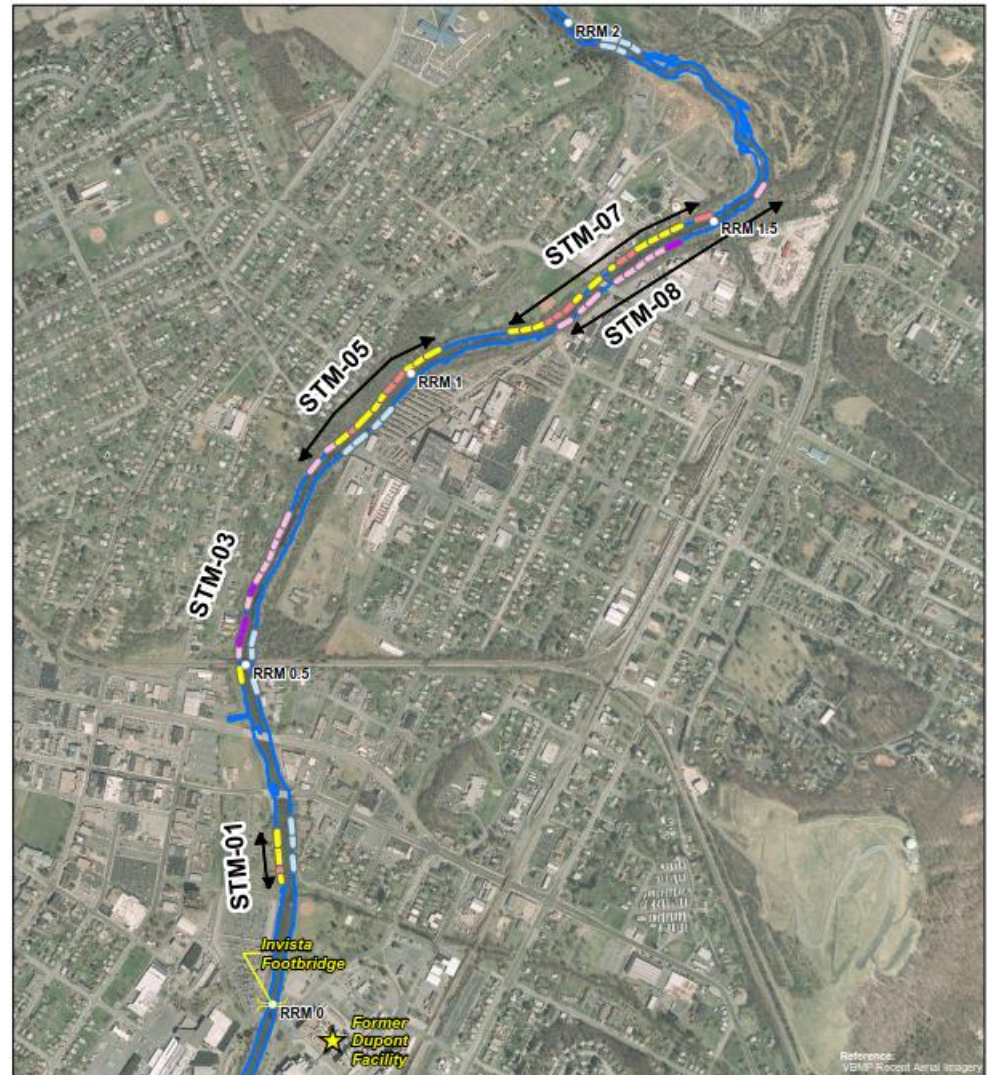
Surface Water Monitoring

- No increase in Hg loading observed associated with IM
- Anomalous spike in THg (unfiltered) at Hopeman Parkway in February 2017



STM Summary/Path Forward

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



Long-term Monitoring

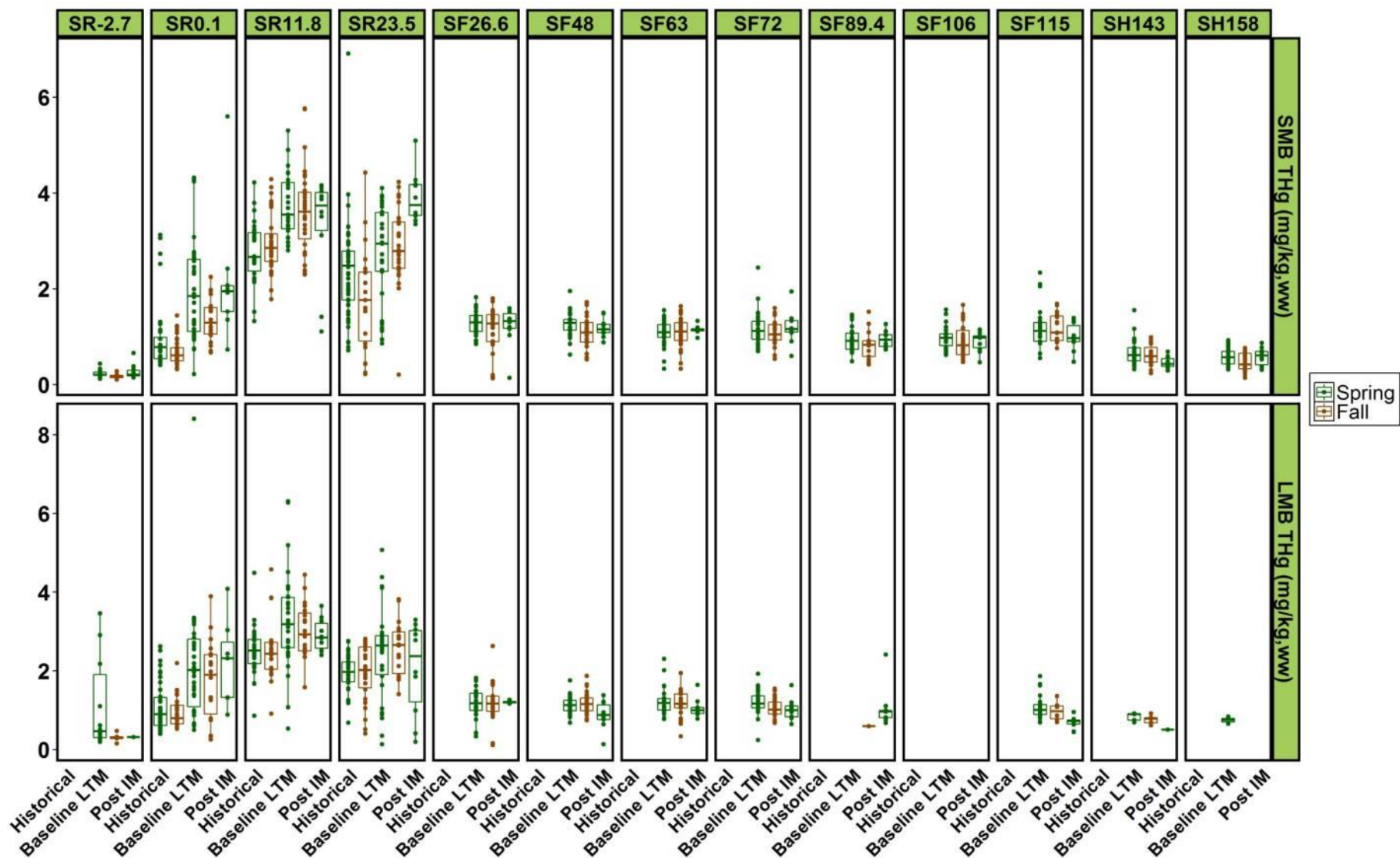
- Review of select LTM data used in models
- Path forward

LTM Data Review

- Adult bass data
- Baseline YOY SMB
- Regional climate

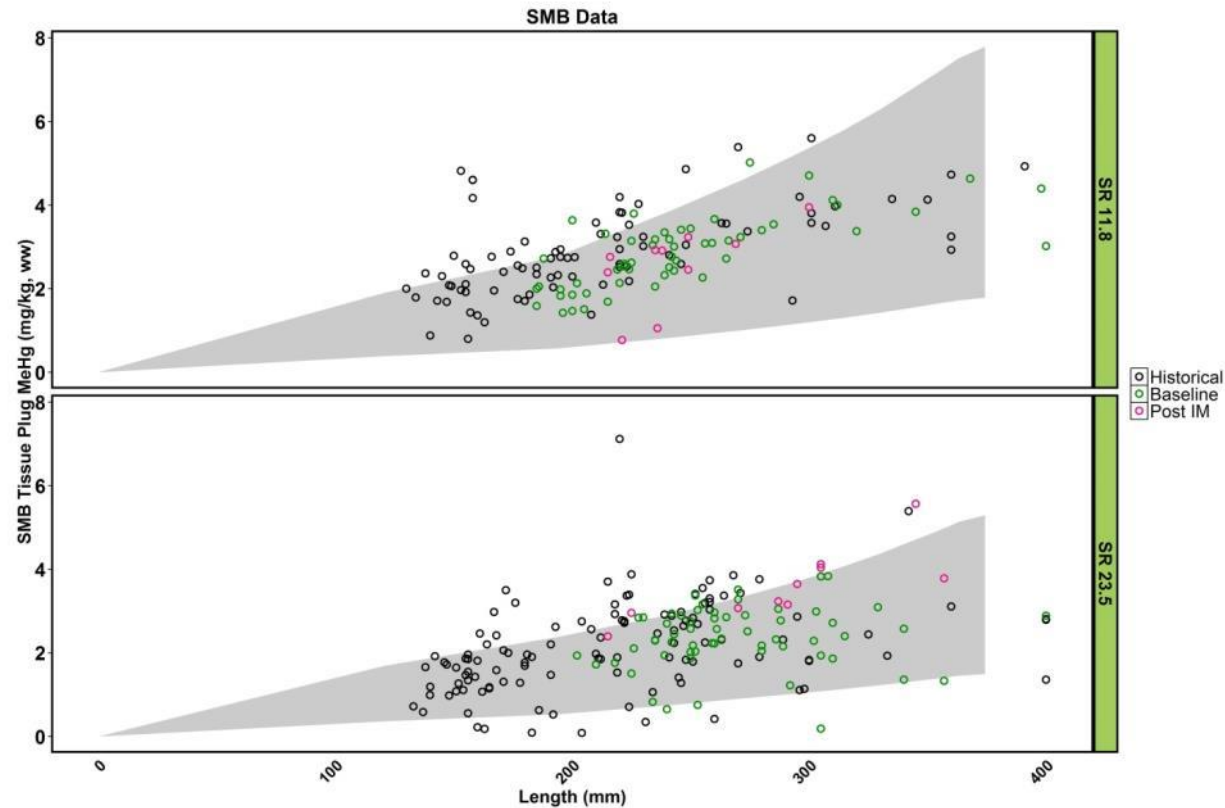


LTM Update – All Bass



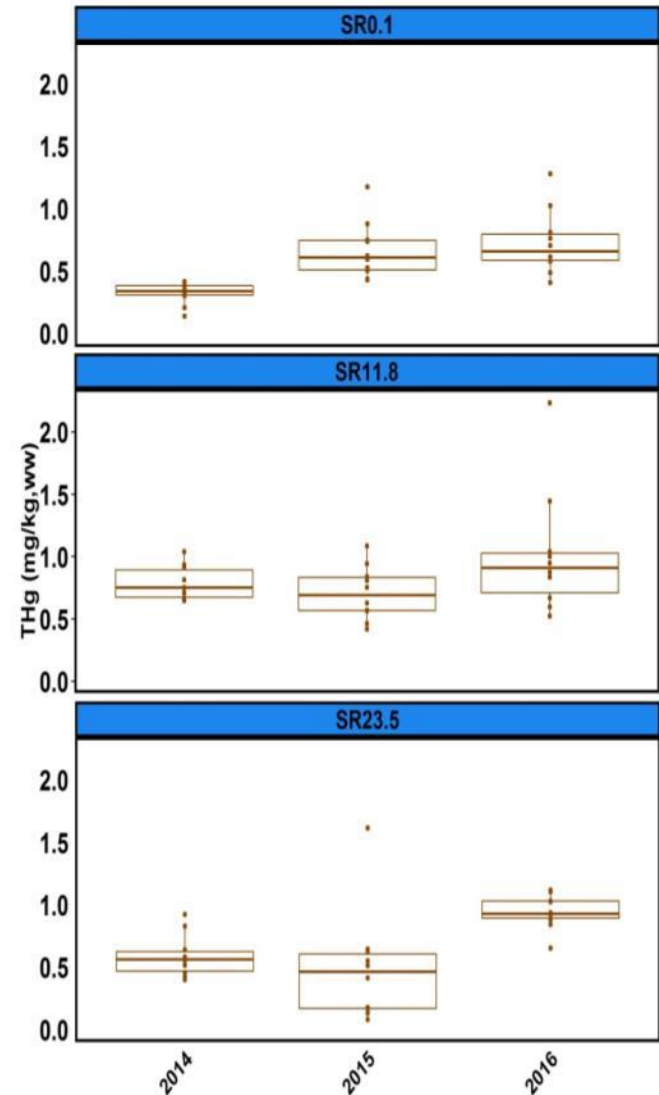
BASS Model Results

- Observed data fits w/in predicted range
- LTM data generally consistent with previous data
- However, significant differences observed at some locations/years



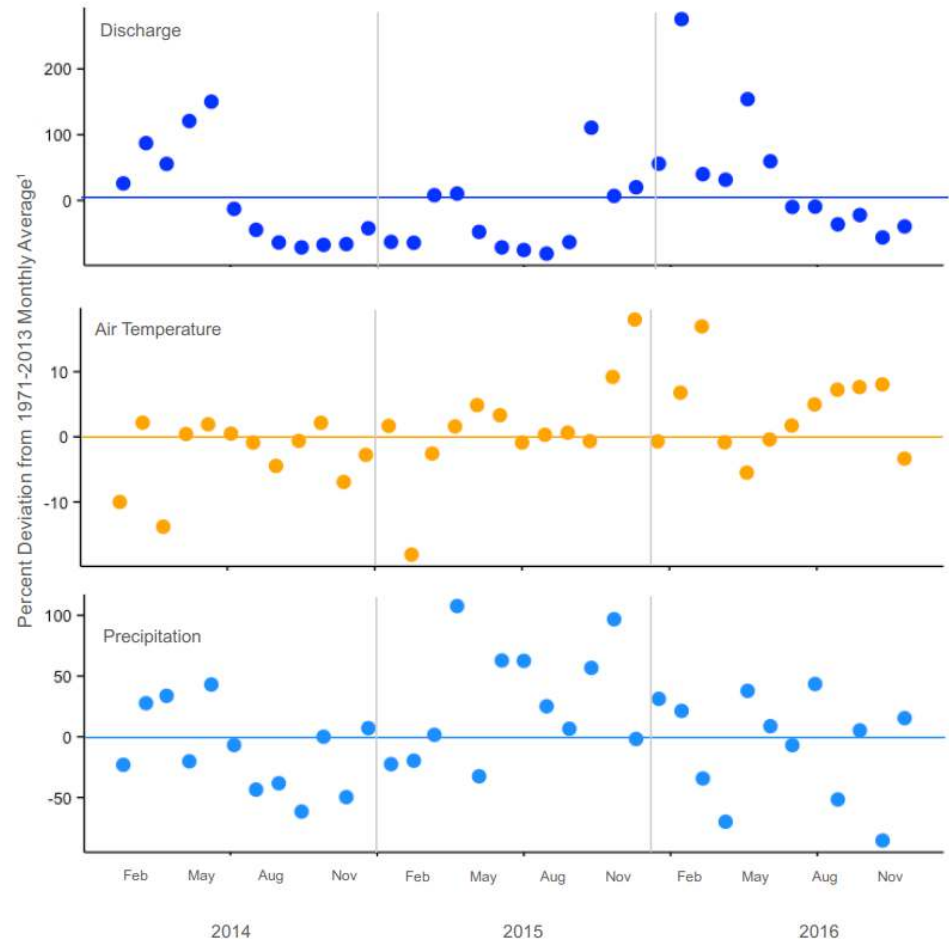
YOY Smallmouth Bass

- Similar trend as adult bass
- Annual variation in MeHg production

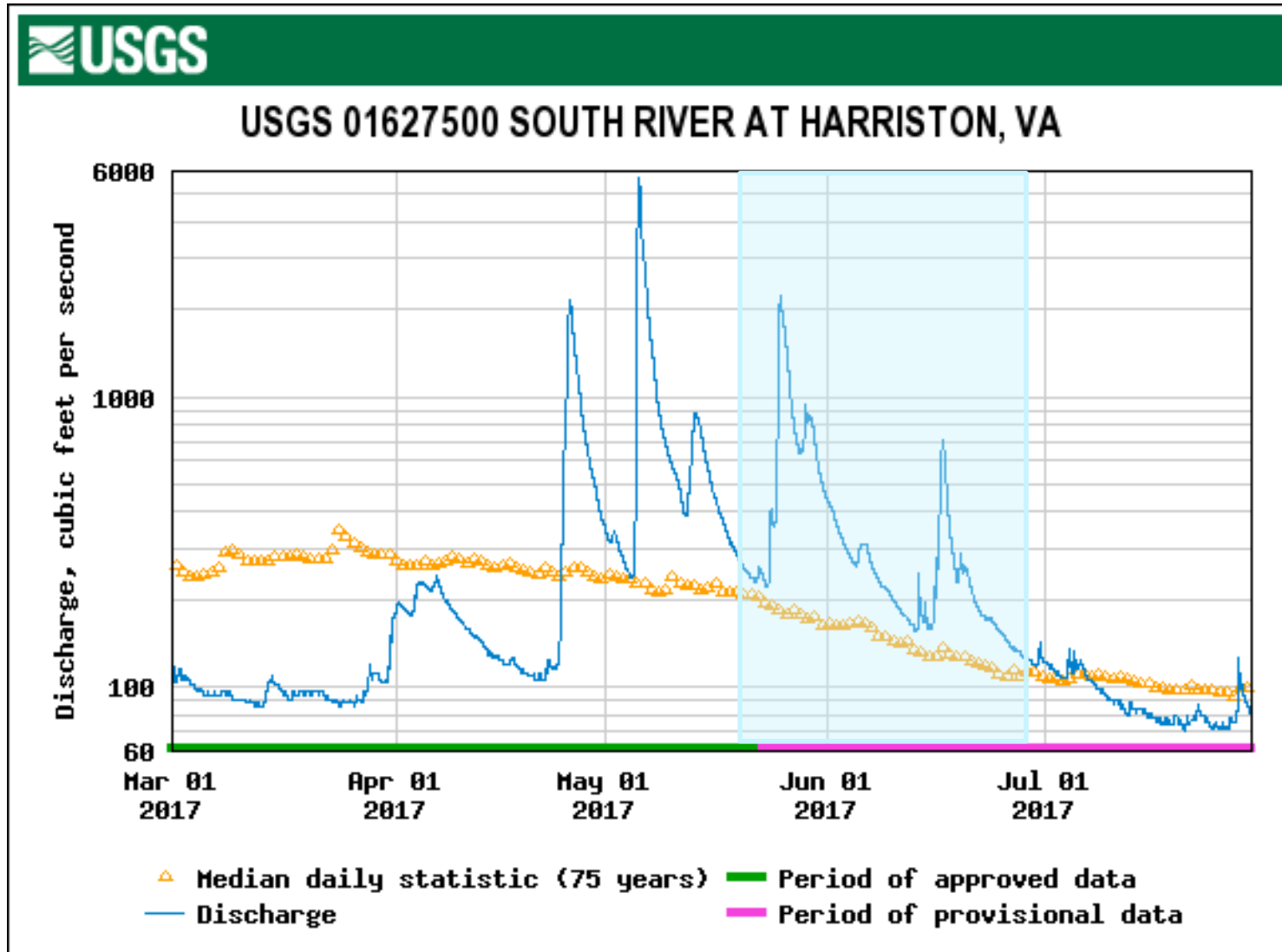


Percent Deviation from Monthly Average Discharge, Temperature and Precipitation

- Importance of regional climate
- Warmer than average air temperature
- Higher discharge in 2014, 2016 and 2017

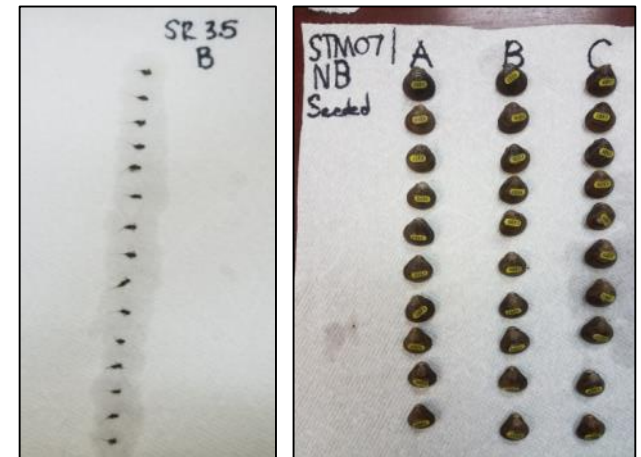


Spring Hydrograph



Findings

- Inferences from new data may be premature
- Localized fluctuations in some datasets (e.g., PW, SMB)
- STM 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





Thank You

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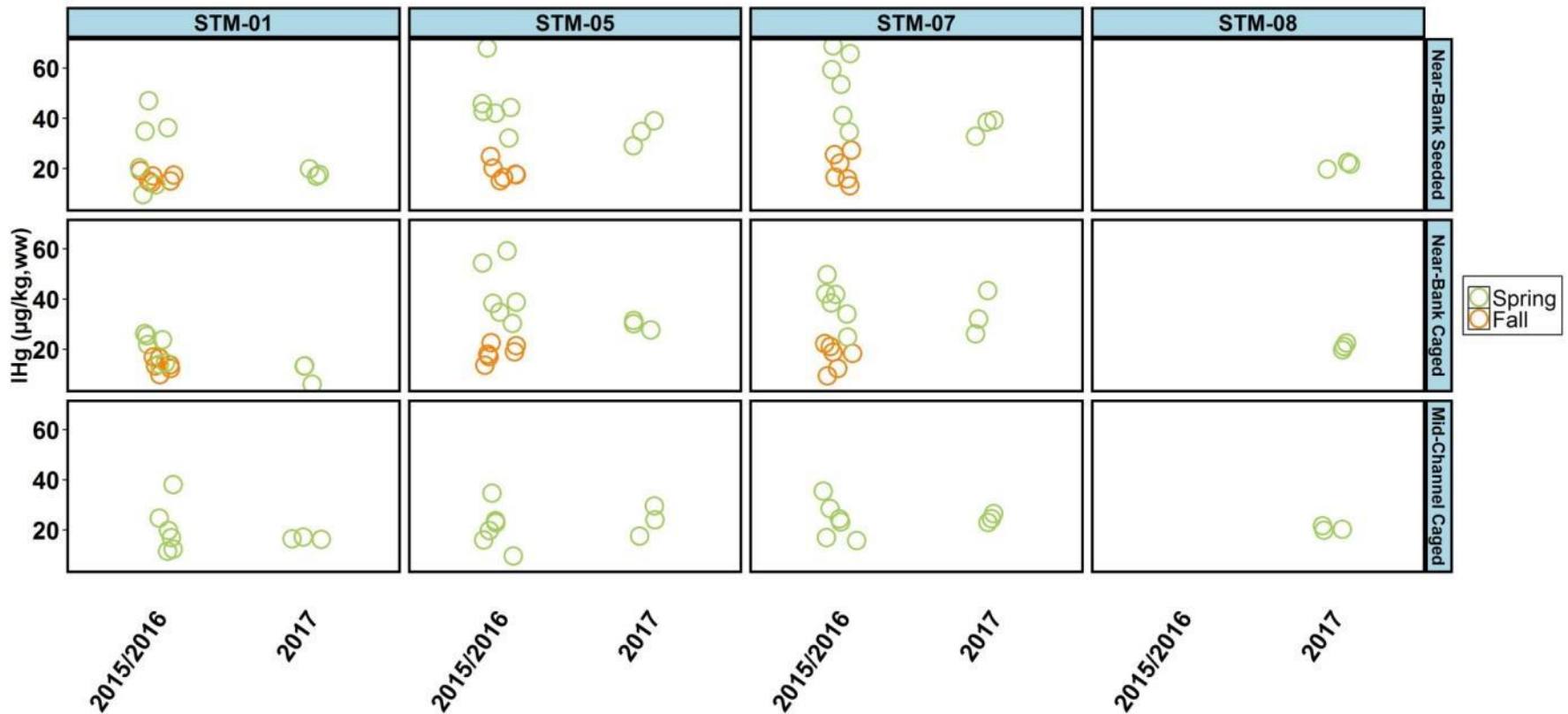


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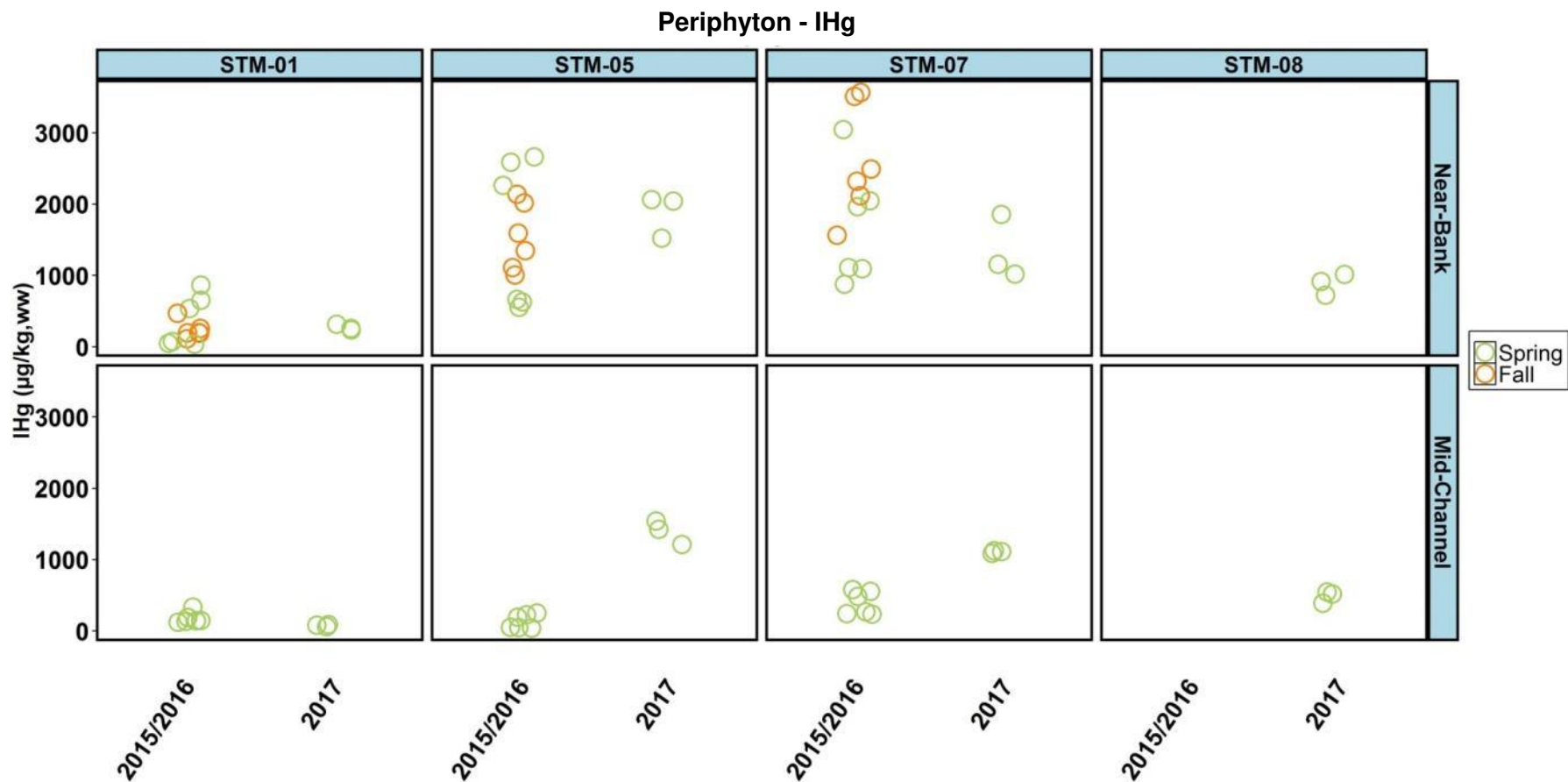
Data Slides

STM Update – Clam IHg

Transplanted *Corbicula* - IHg

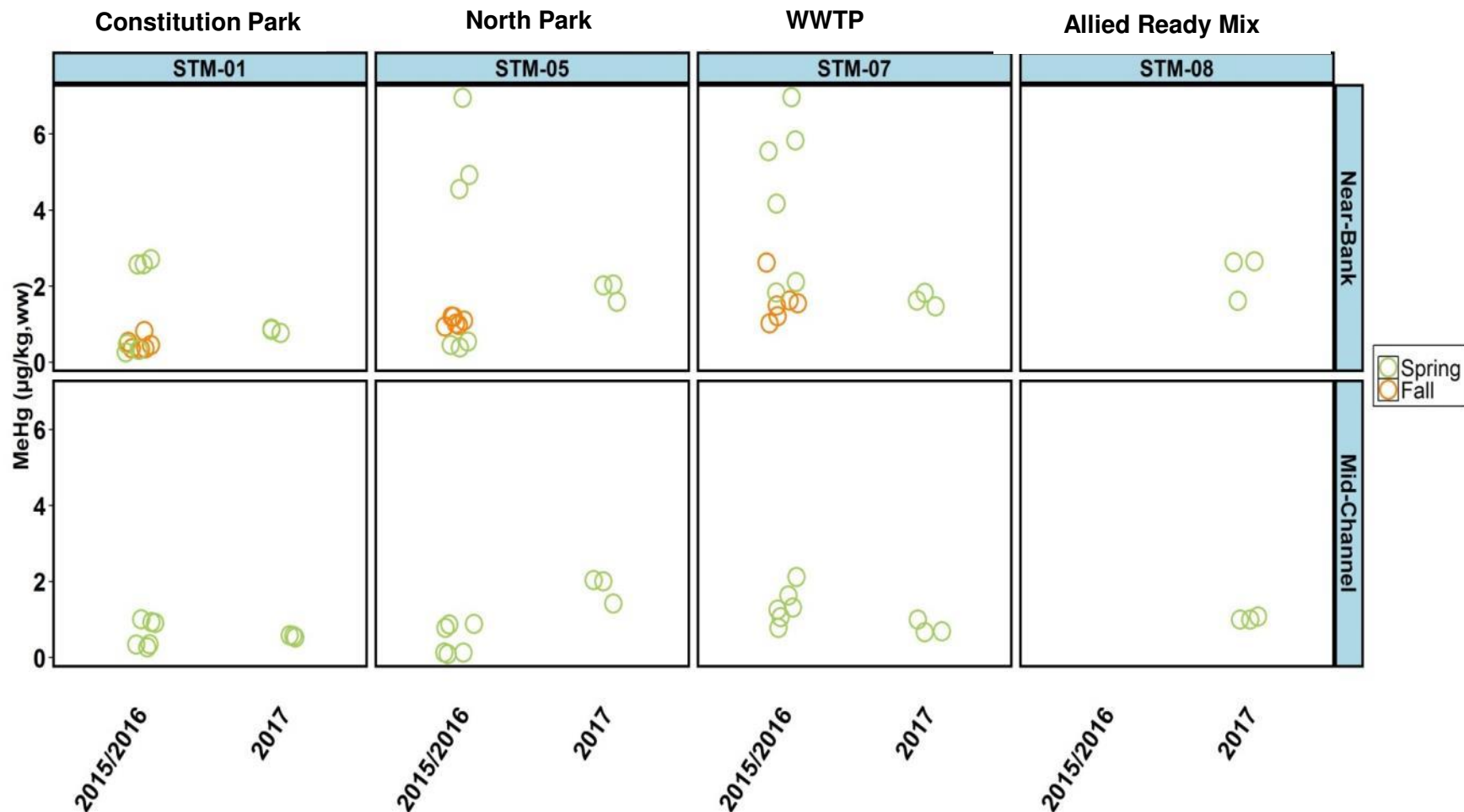


STM Update – Periphyton IHg

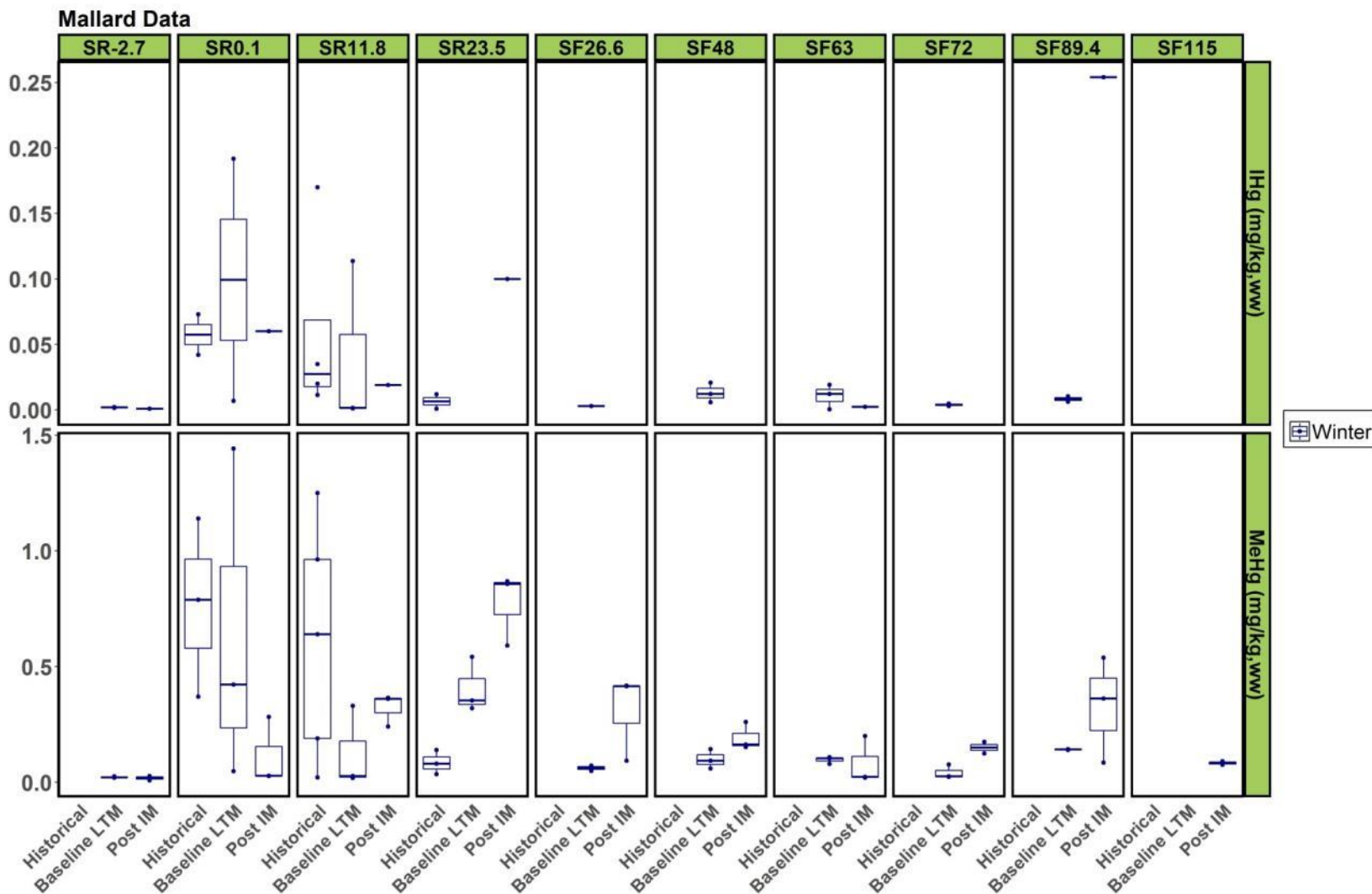


STM Update – Periphyton MeHg

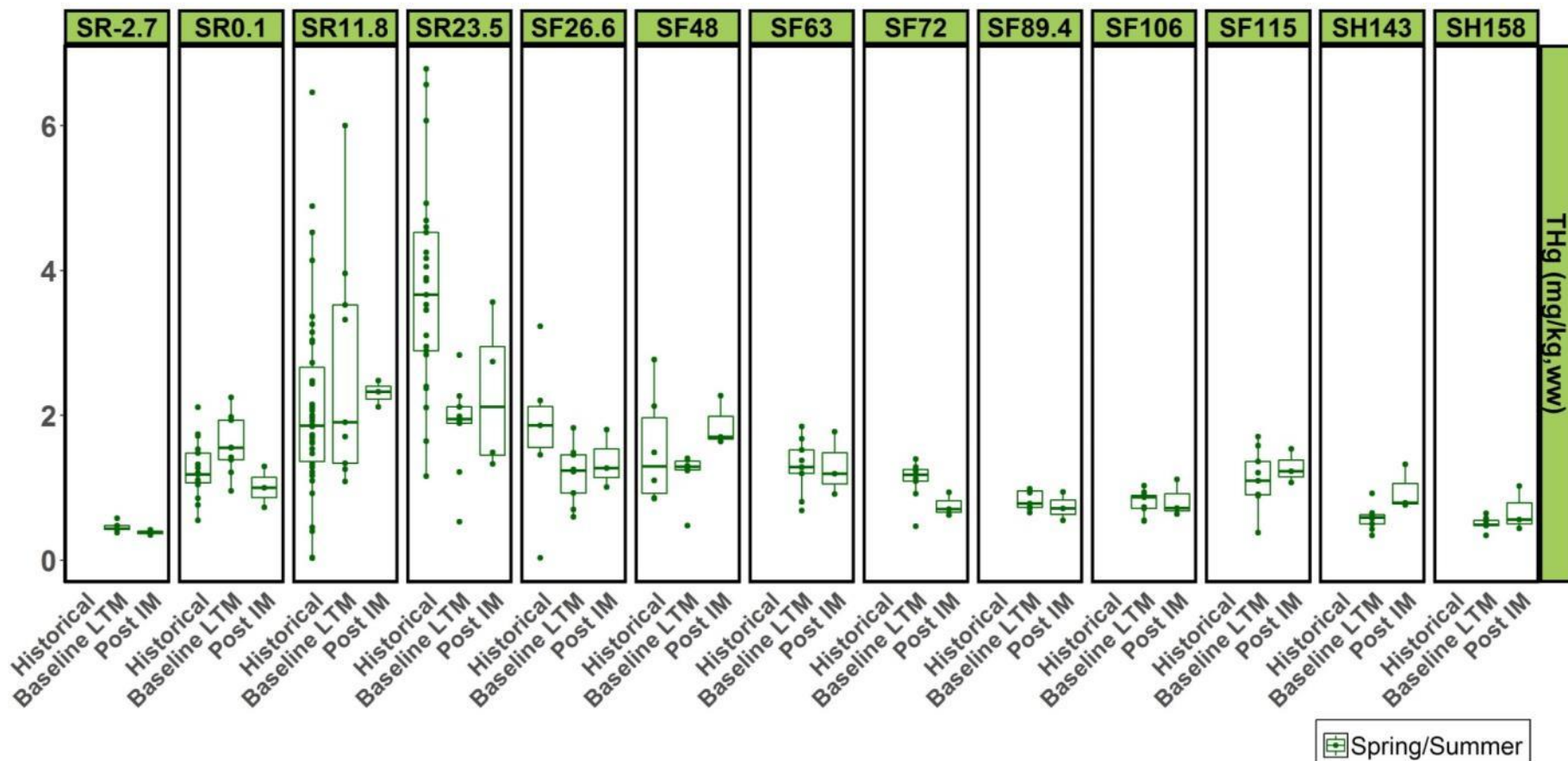
MeHg in Periphyton



LTM Update - Mallards

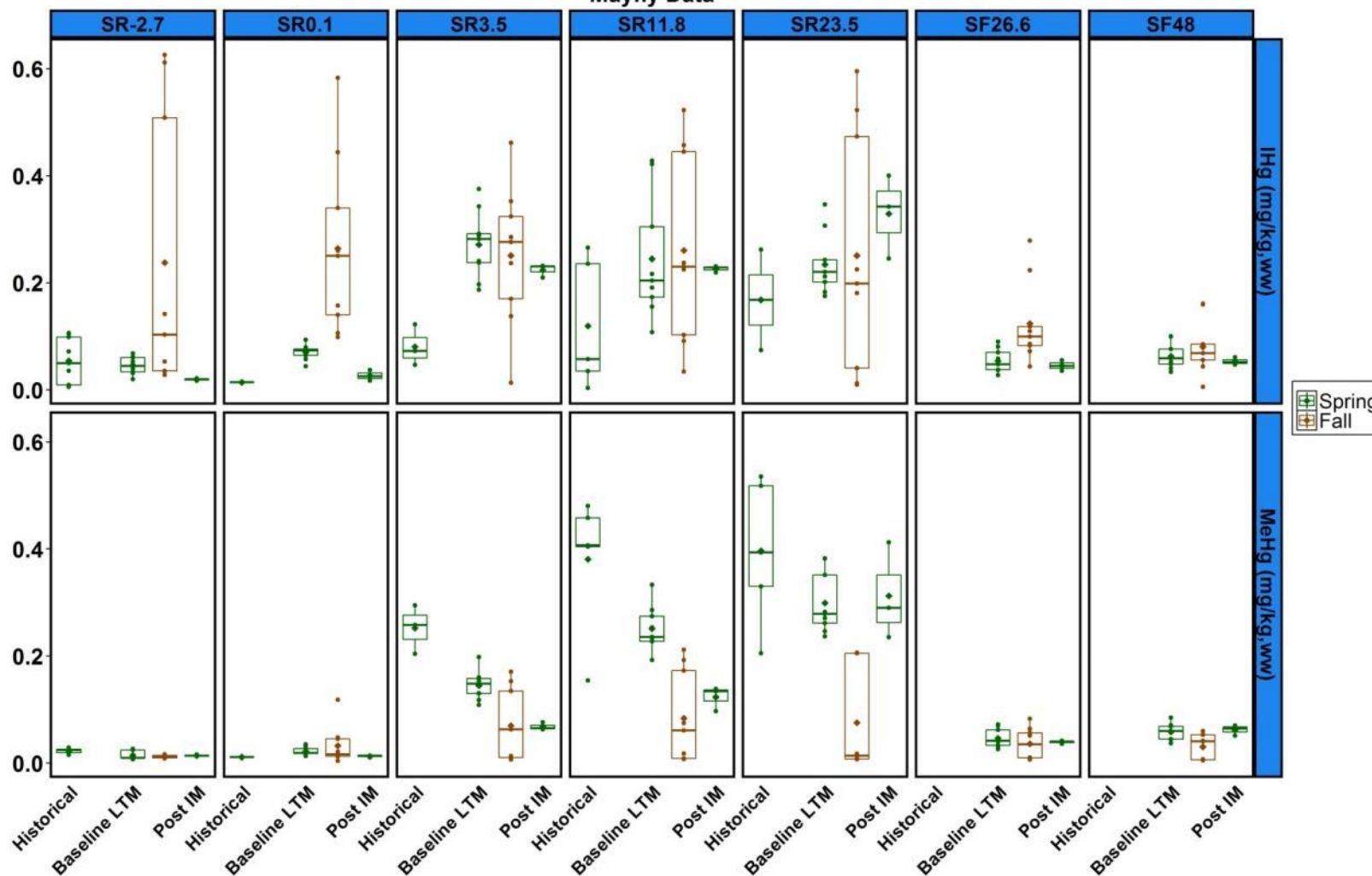


LTM Update - Turtles

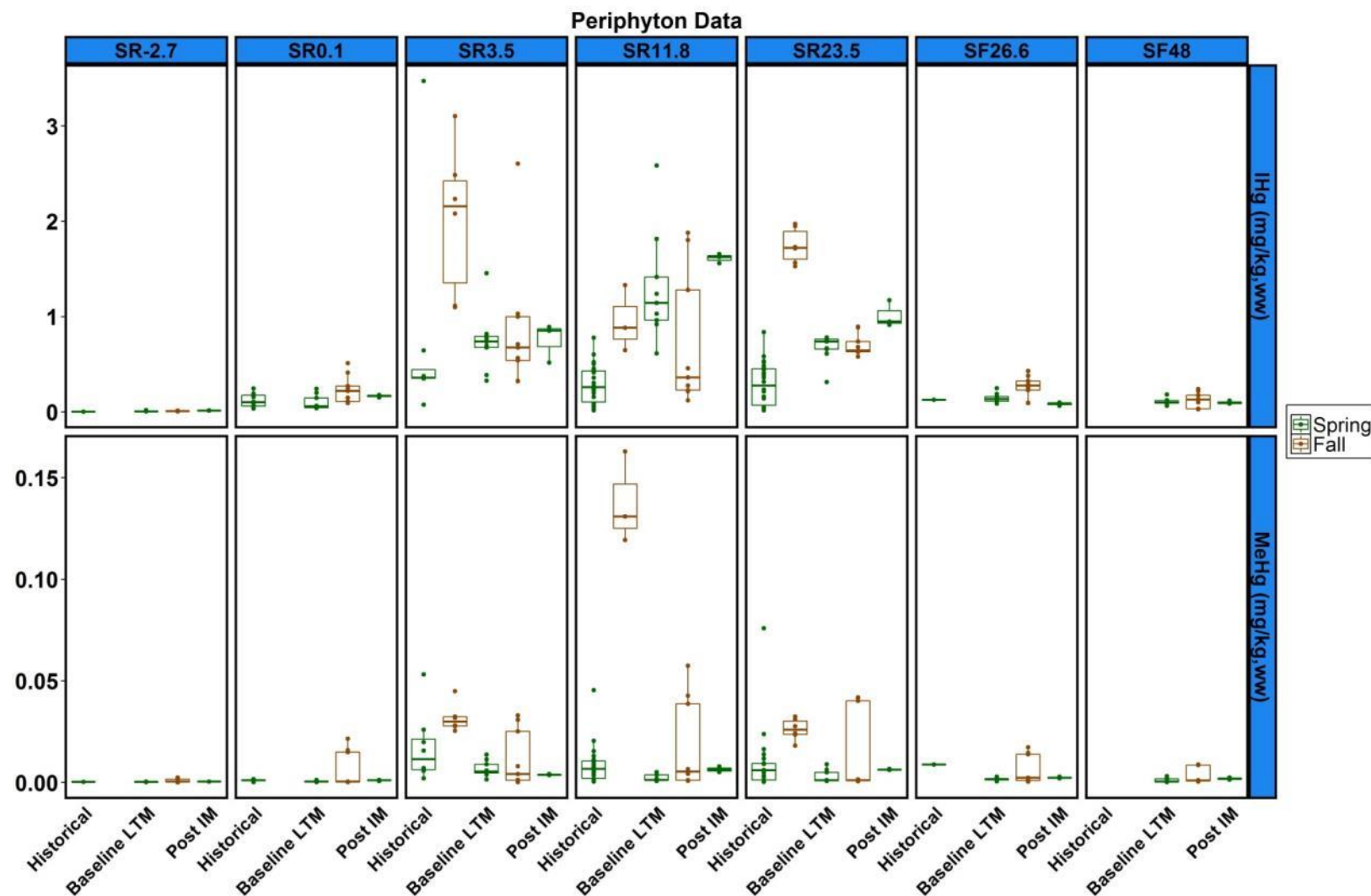


LTM Update - Mayflies

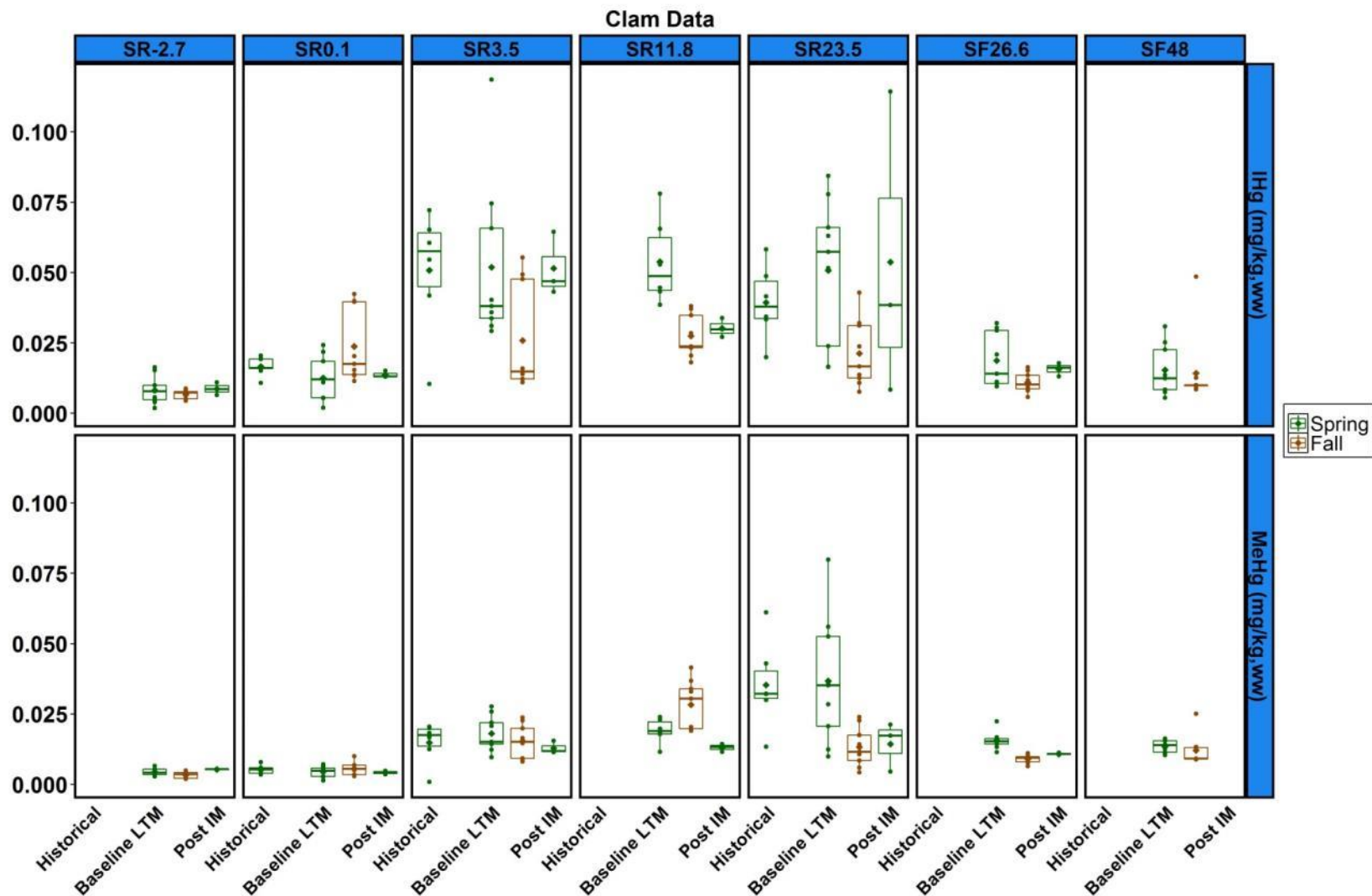
Mayfly Data



LTM Update - Periphyton

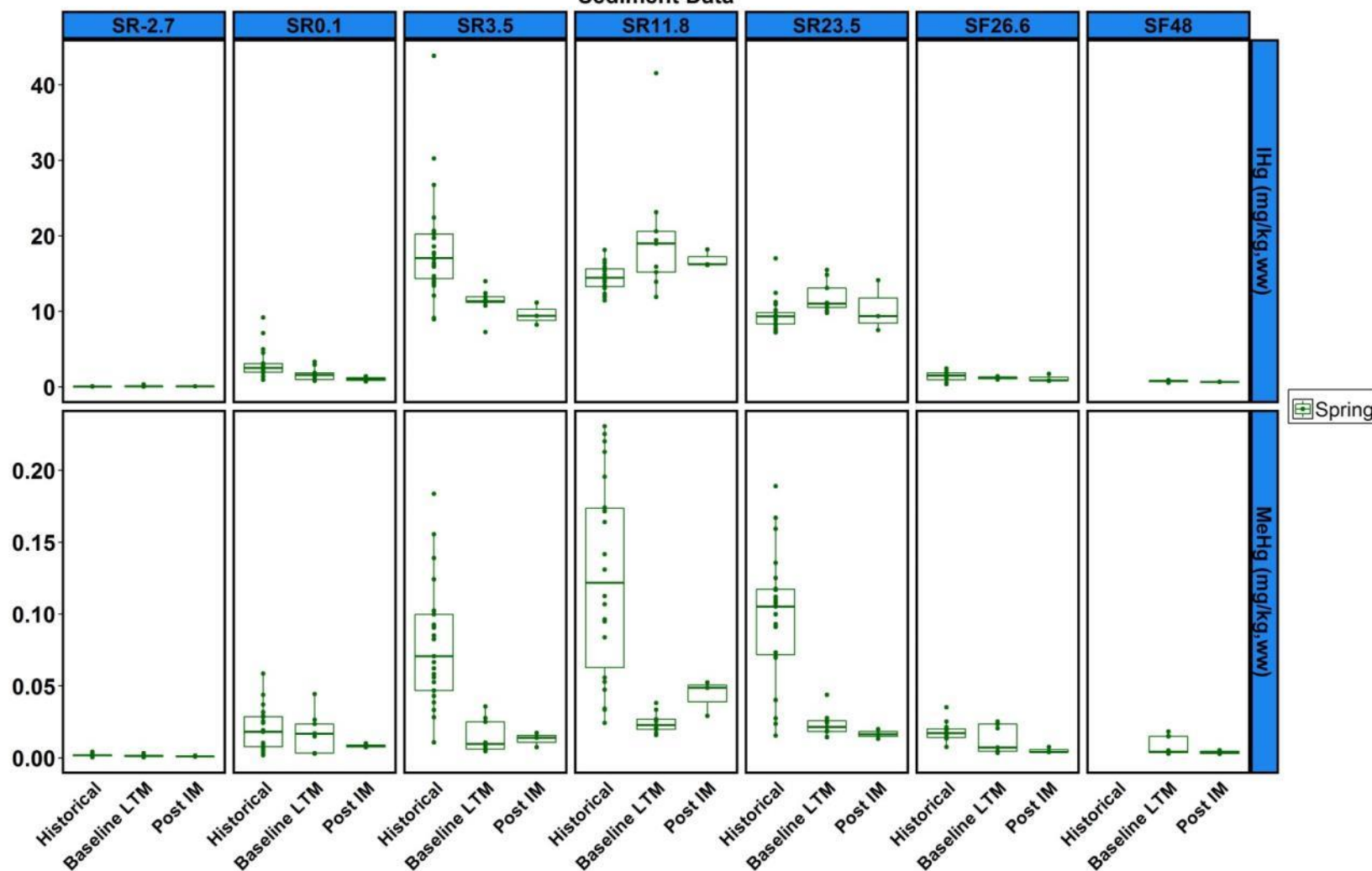


LTM Update - Clams

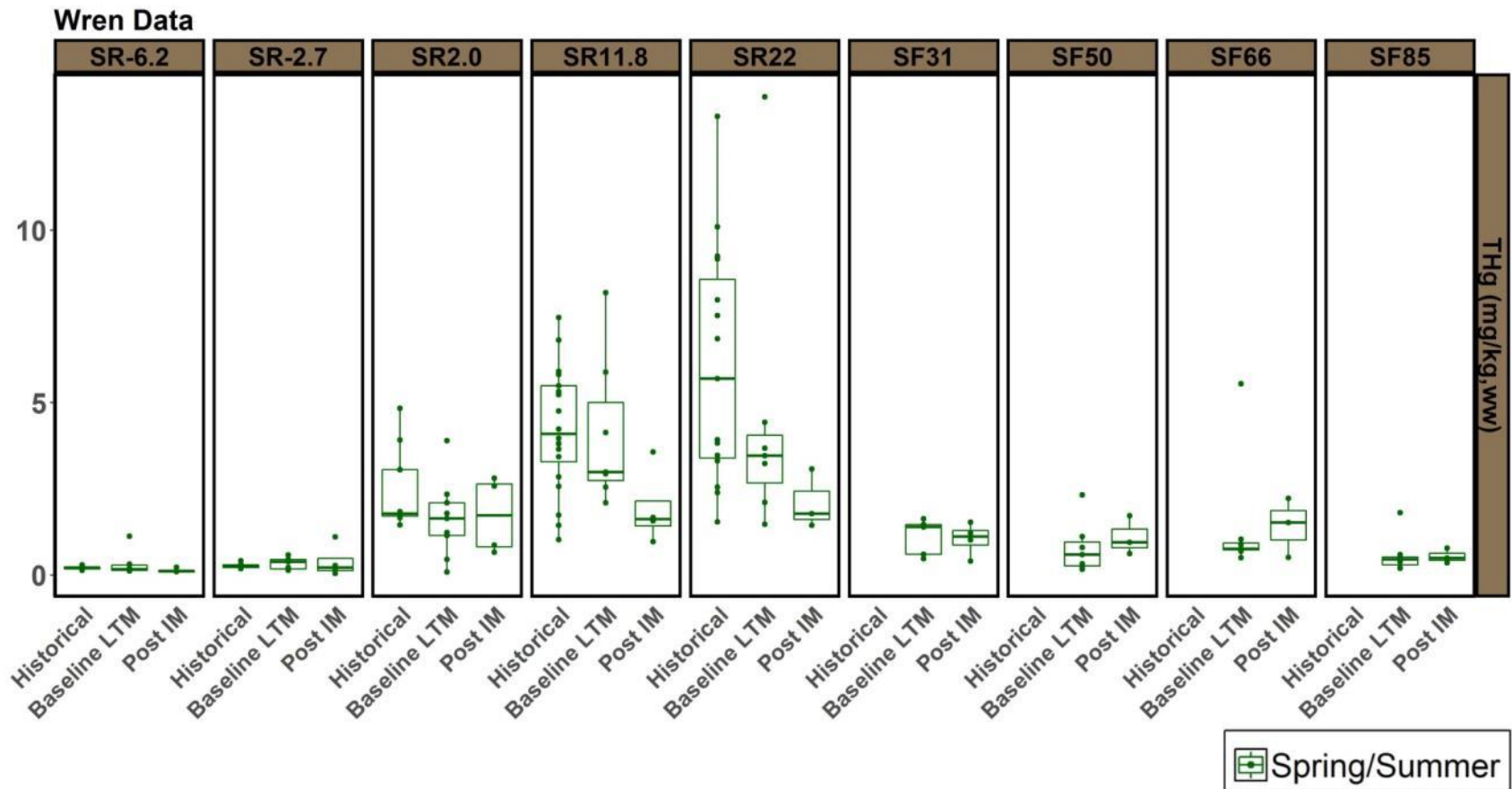


LTM Update - Sediment

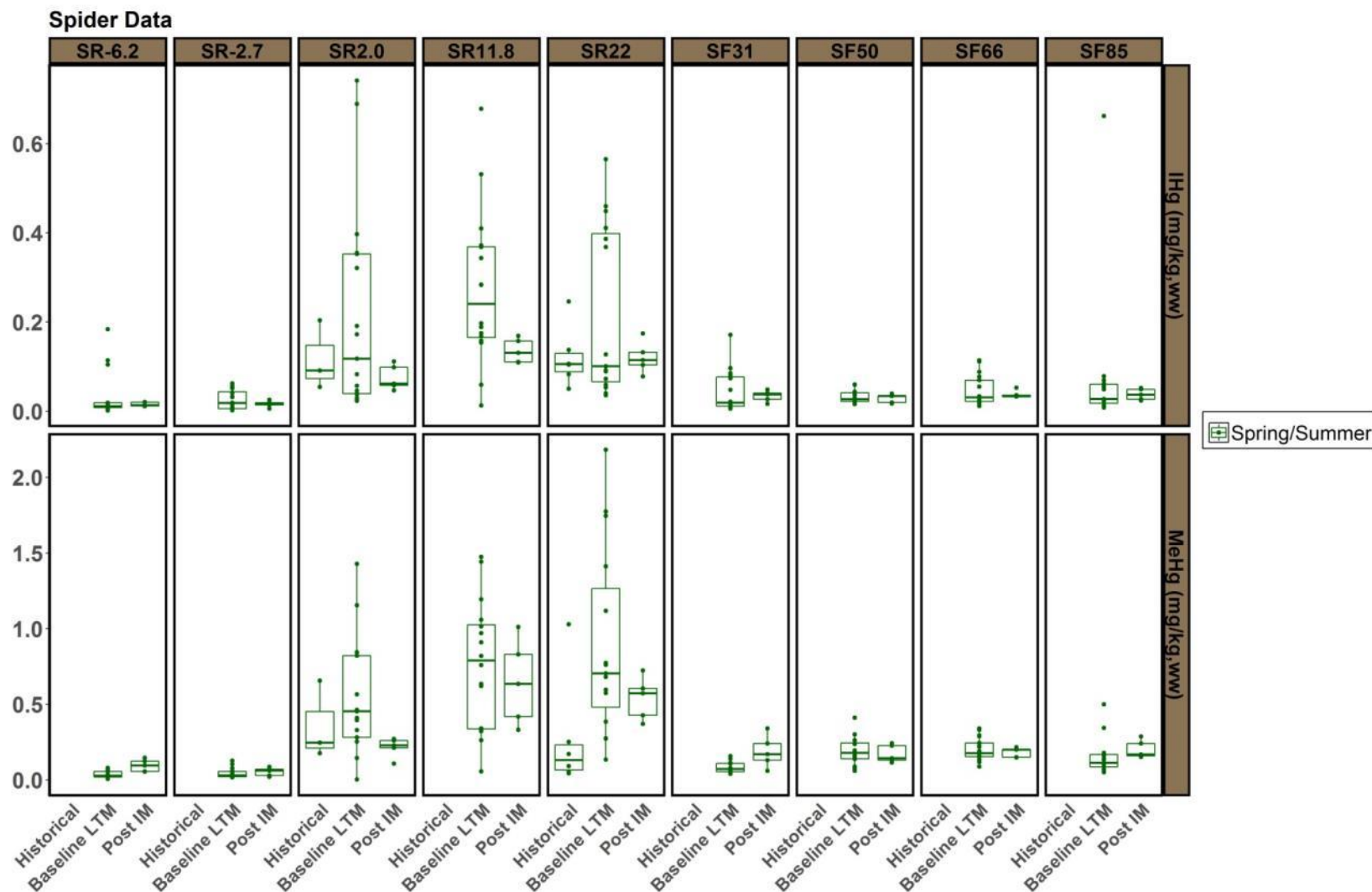
Sediment Data



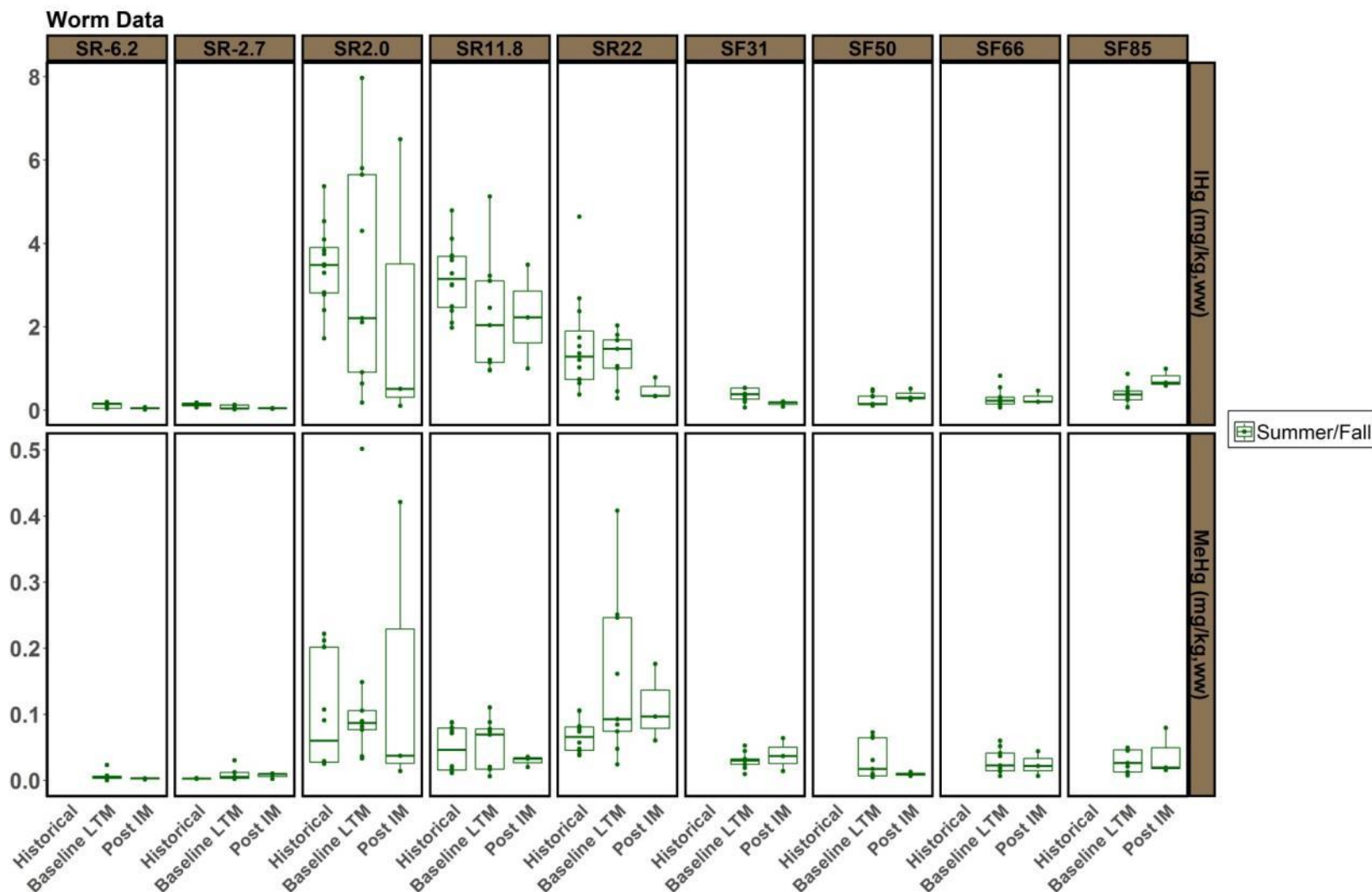
LTM Update – Carolina Wrens



LTM Update – Spiders



LTM Update – Worms



LTM Update – Soil

