

Using Biofilms to Identify Sources of PCBs to the Spokane River *2019 Preliminary Results* Presentation to SRRTTF

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DEPARTMENT OF
ECOLOGY
State of Washington

Acknowledgements

- SRRTTF
- SGS AXYS
- Ecology Staff



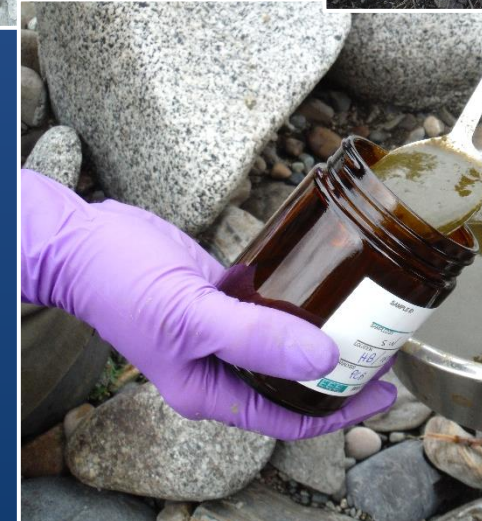
What are Biofilms?

- Complex, diverse assemblages of algae, microbes, fine sediments
- Attached to each other and surfaces via secretion of mucilage
- Base of aquatic food webs
- Can act as natural passive samplers

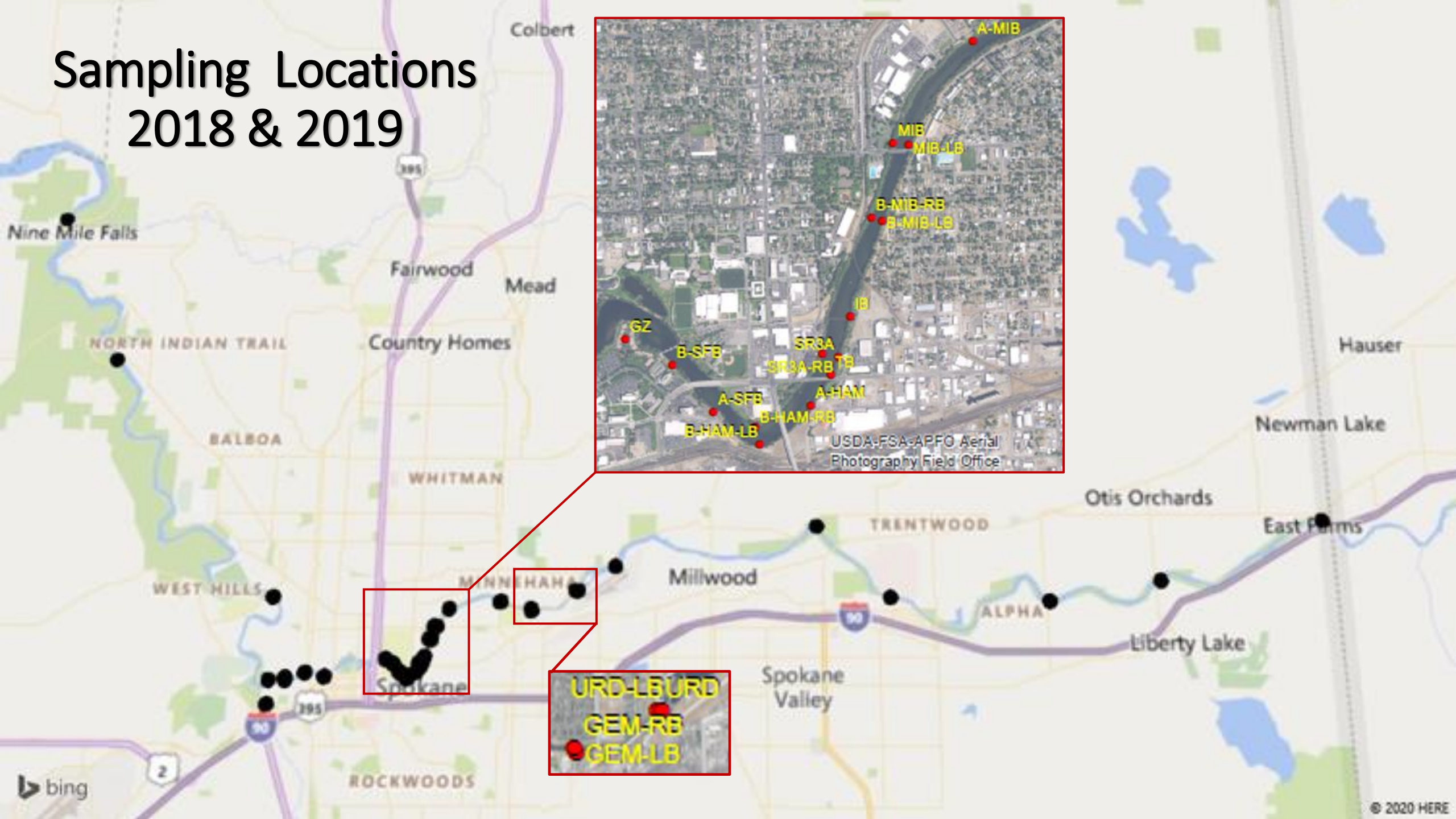


Methods

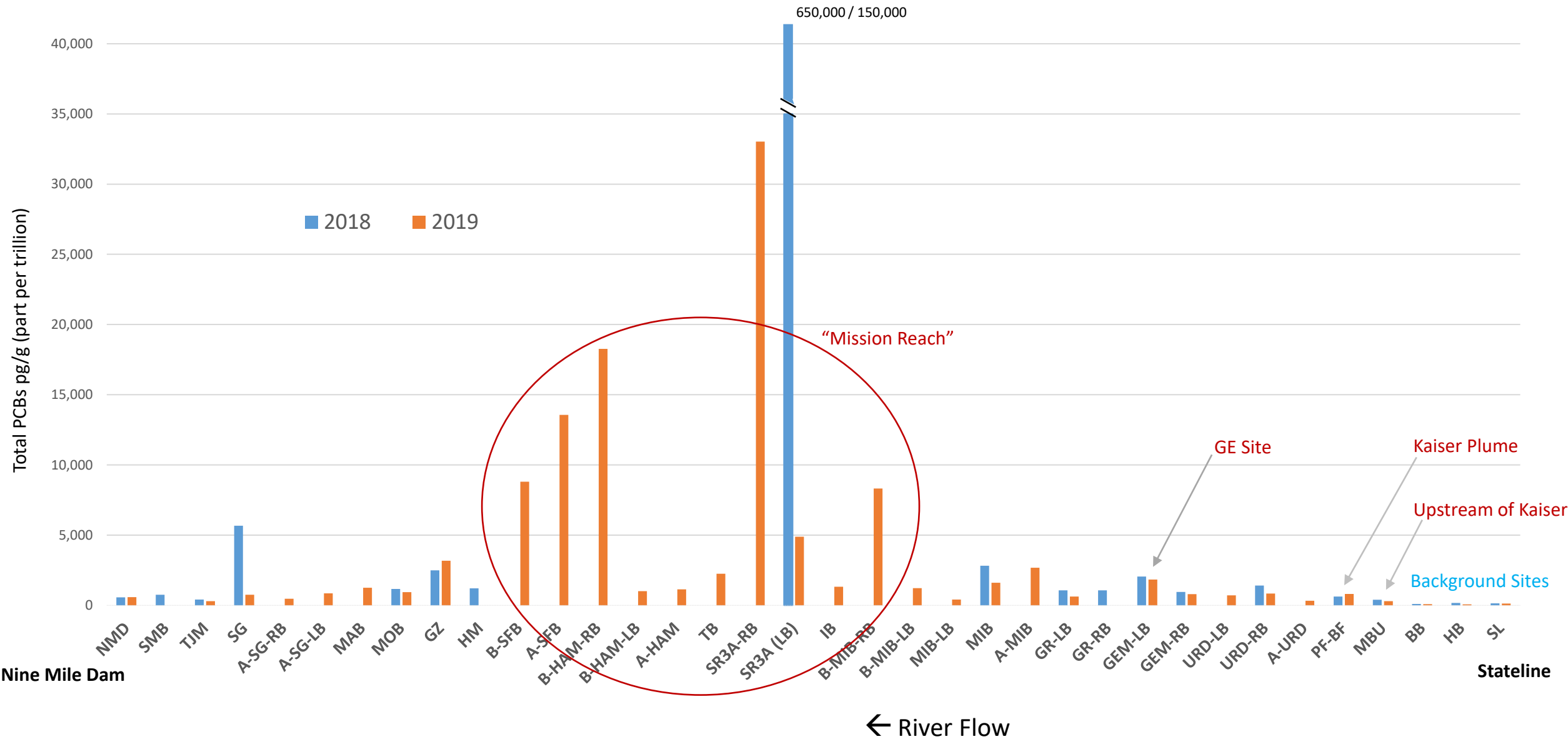
- 19 Biofilm sites in 2018
- 33 Biofilm sites in 2019 -- *Most of the 2018 sites with more focused efforts on suspected hot spots.*
- Compositing scrapings of slime from cobble-sized rocks into certified clean jars.
- SGS AXYS Laboratory
- EPA Method 1668C
- Inclusion of NJ-qualified results and 3x MB censoring
- QAPP and QAPP Addendum:
<https://fortress.wa.gov/ecy/publications/SummaryPages/1903103.html>



Sampling Locations 2018 & 2019



Total PCBs in Biofilms 2018 and 2019*



*2018 data Final; 2019 data Provisional

Total PCBs in Biofilms in the "Mission Reach"

SR3A-RB

SR3A

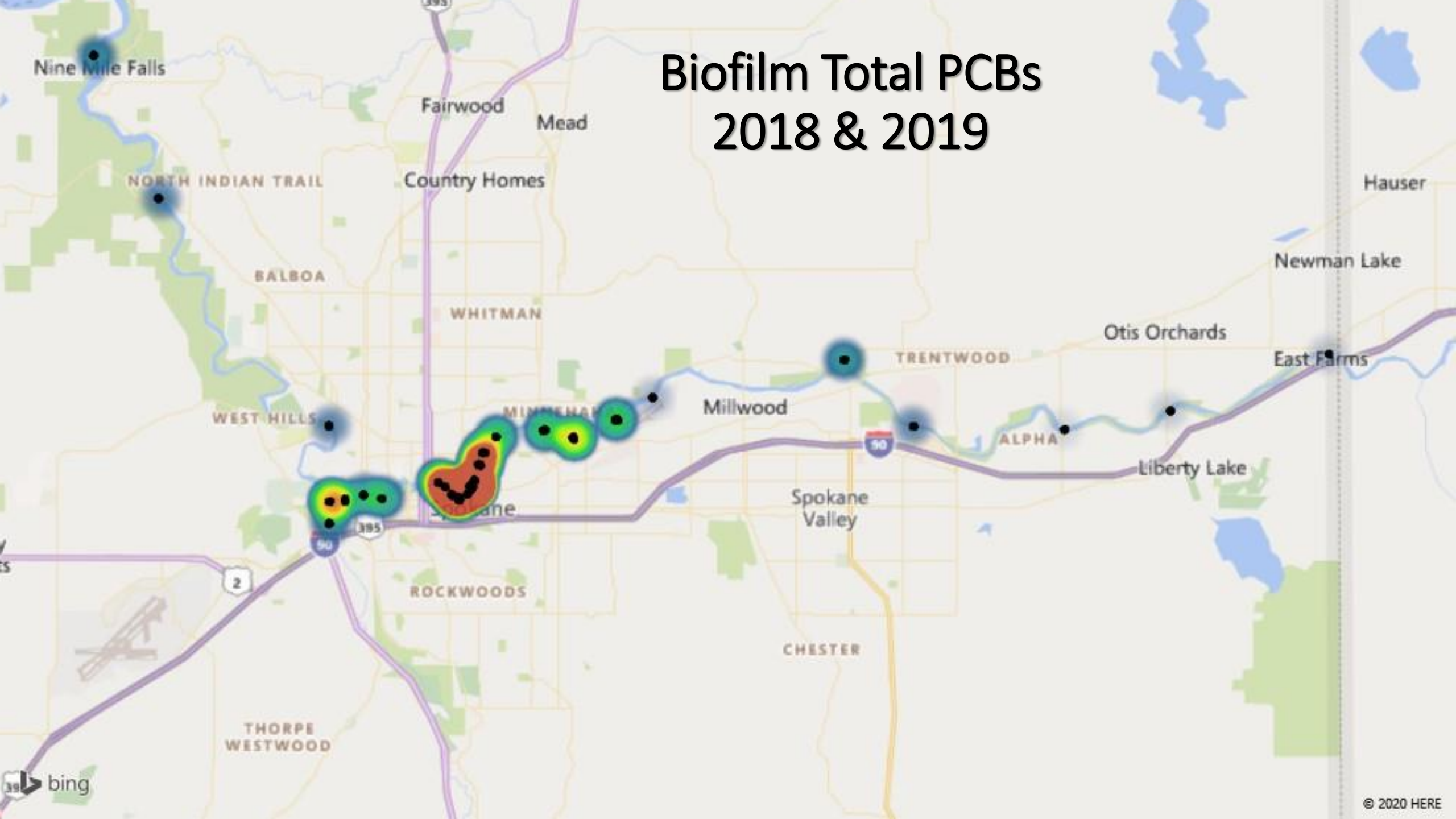
Green St.

Gonzaga

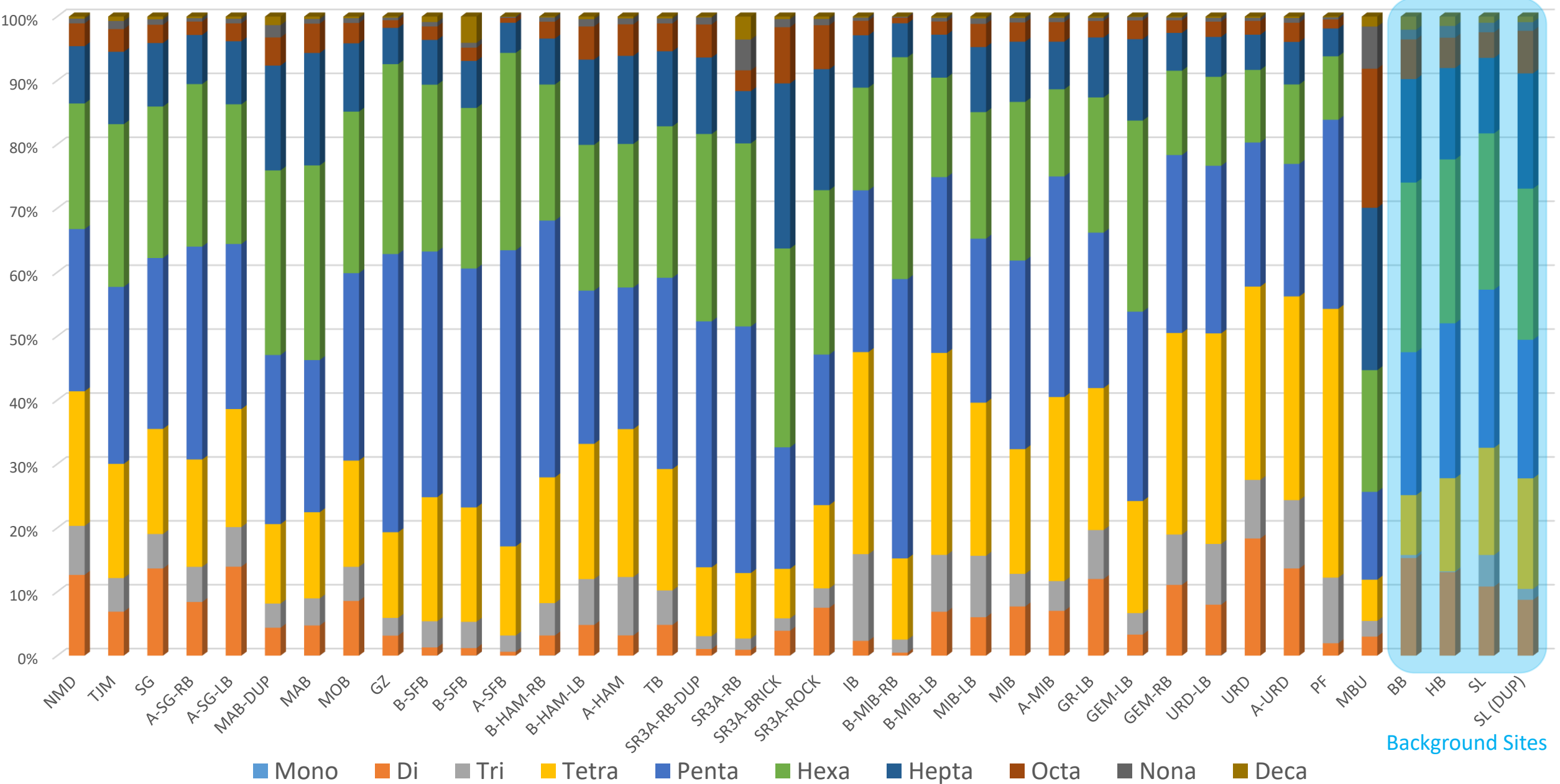
2018

2019

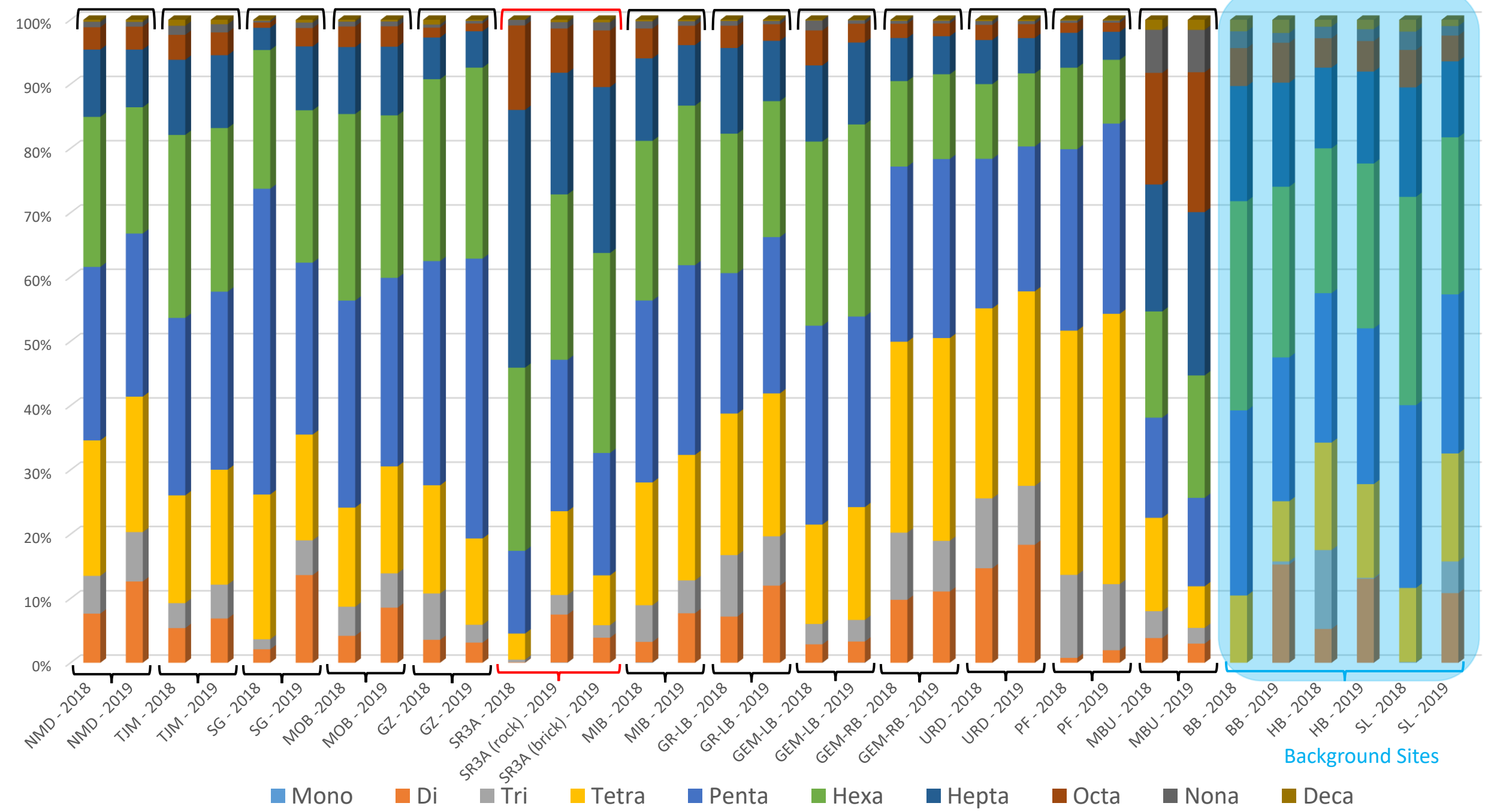
Biofilm Total PCBs 2018 & 2019

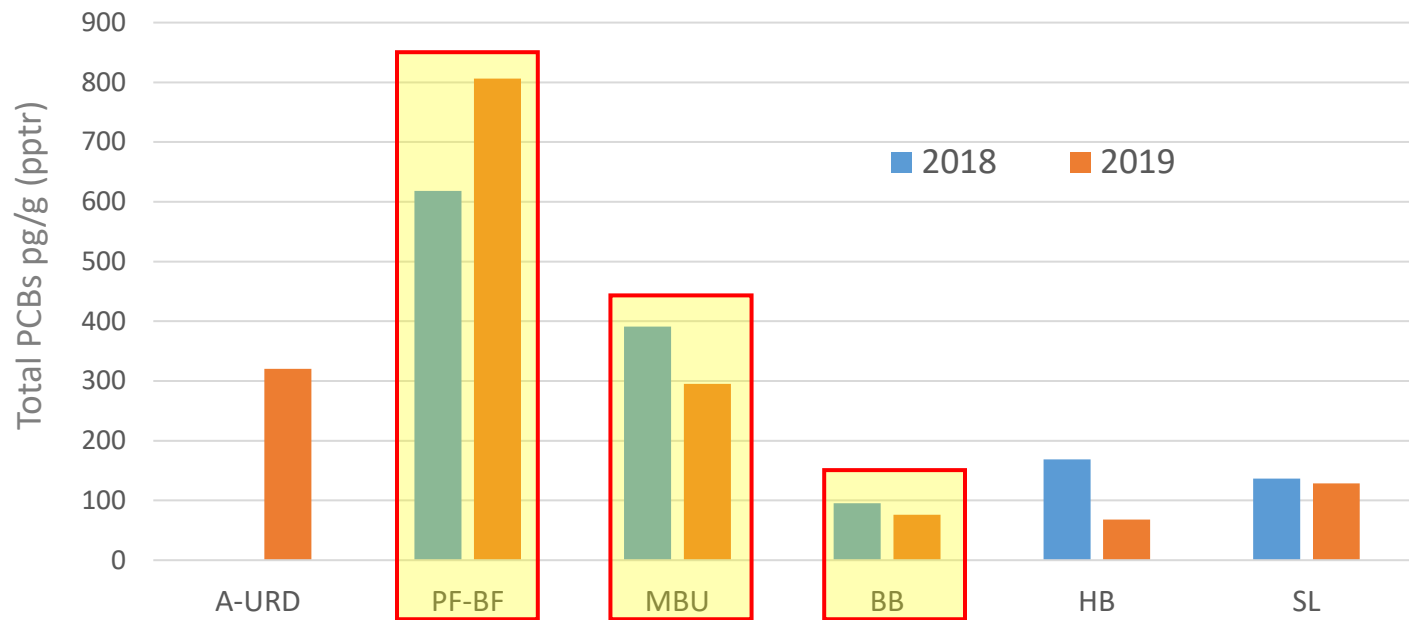


Biofilm 2019 - PCB Homologs

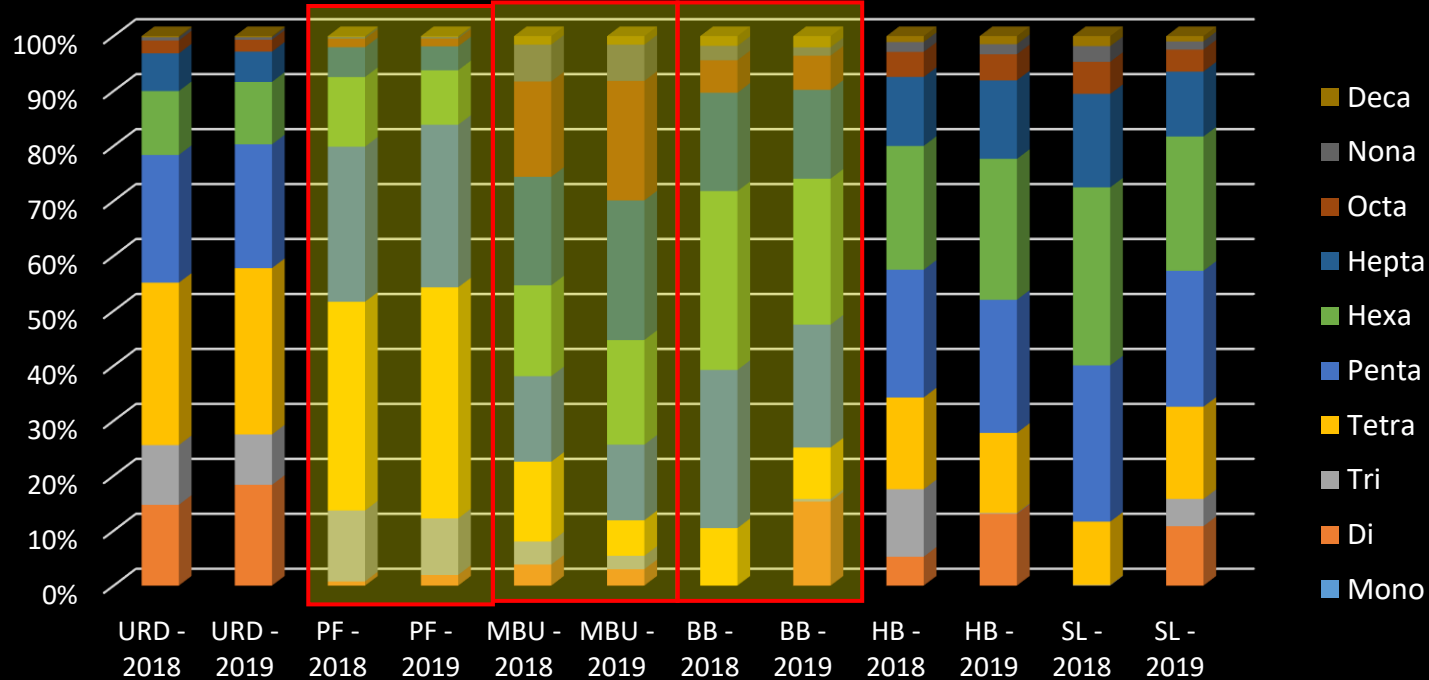


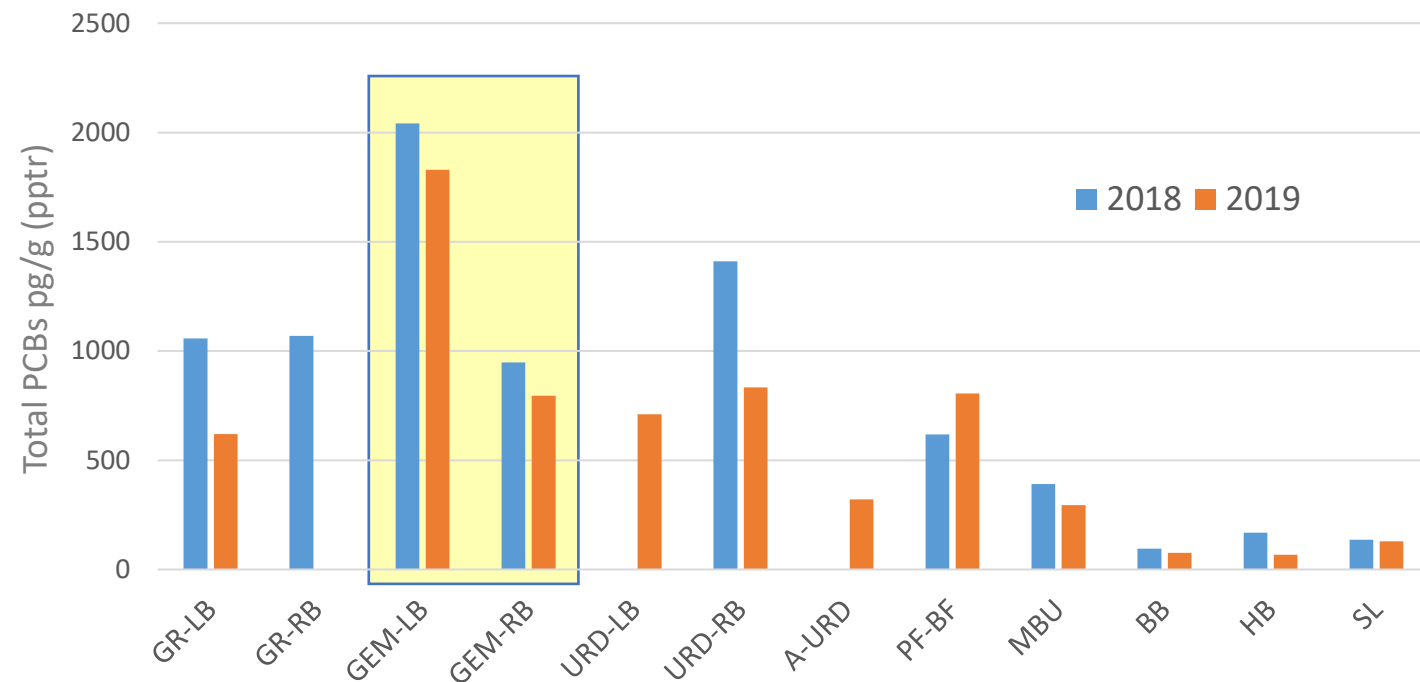
Biofilm 2018 and 2019 - PCB Homologs by Same Location



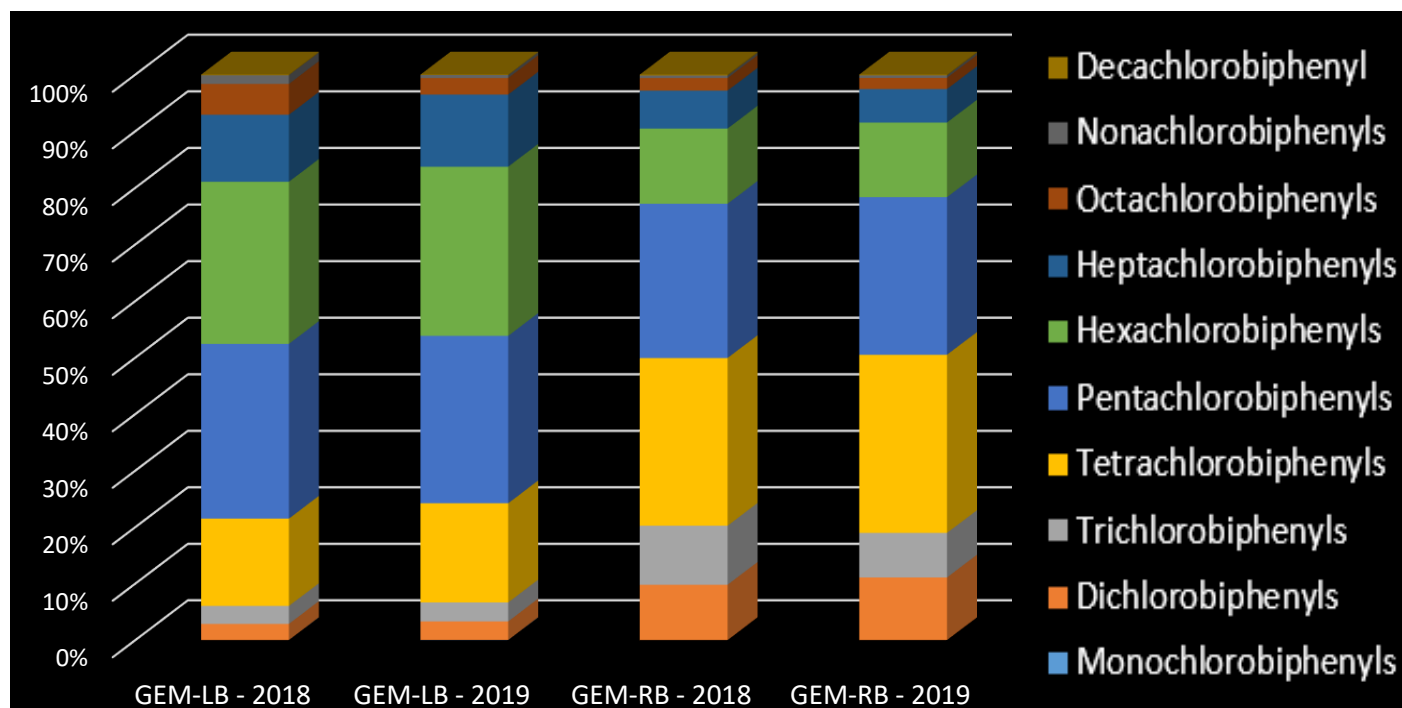


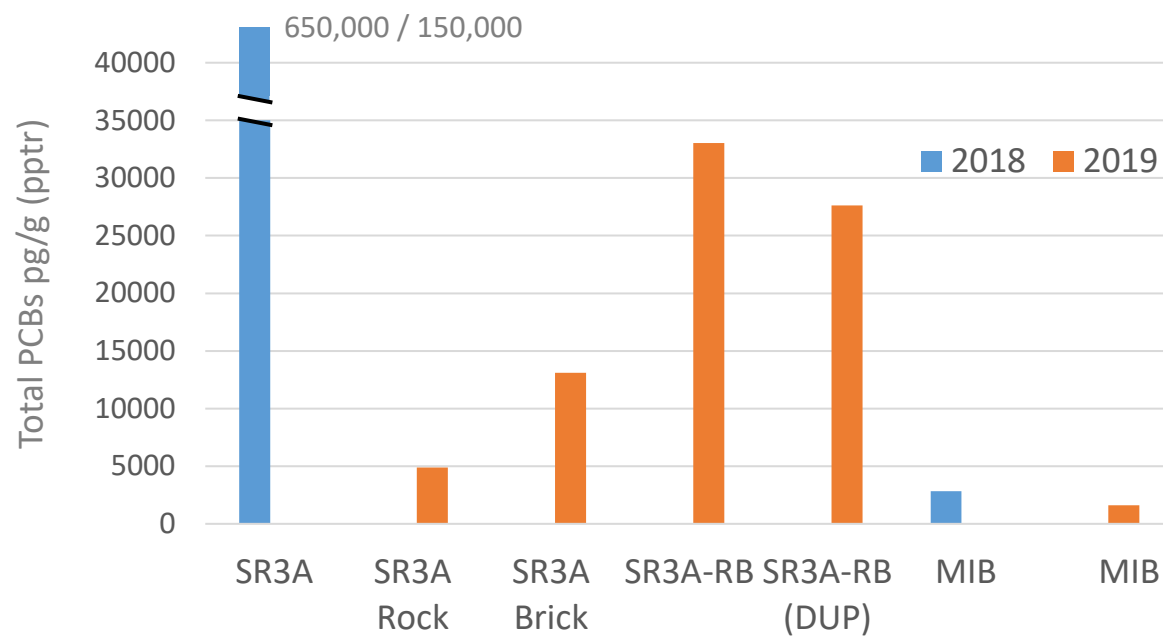
Upriver Station Comparisons



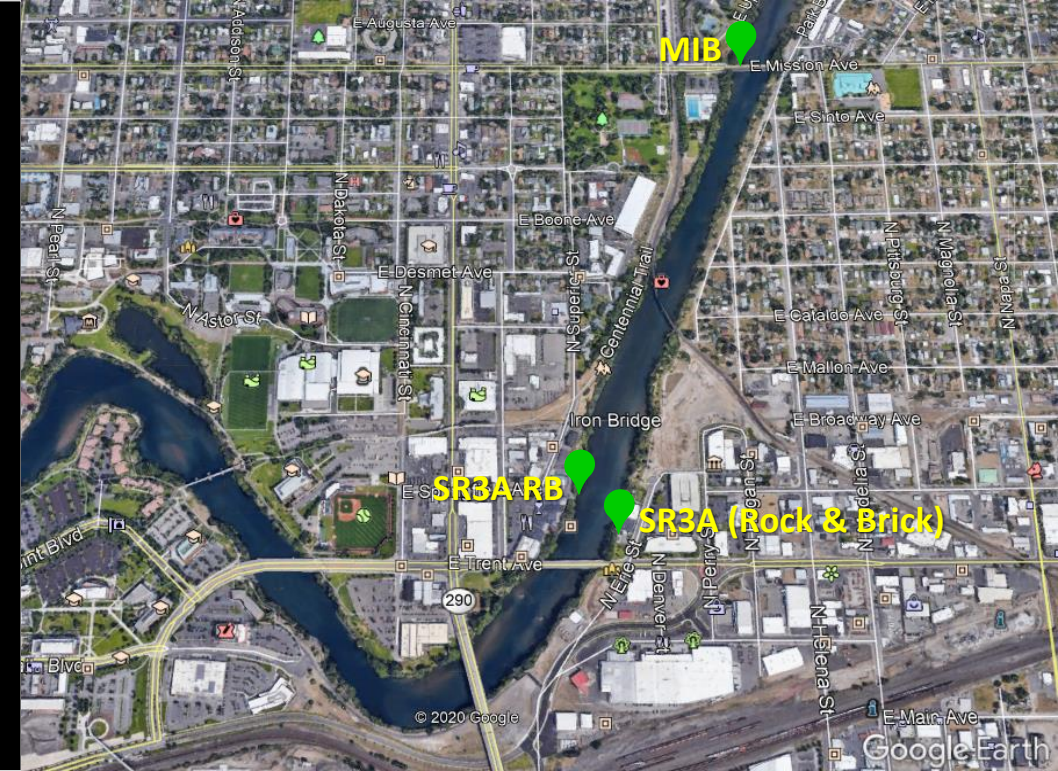
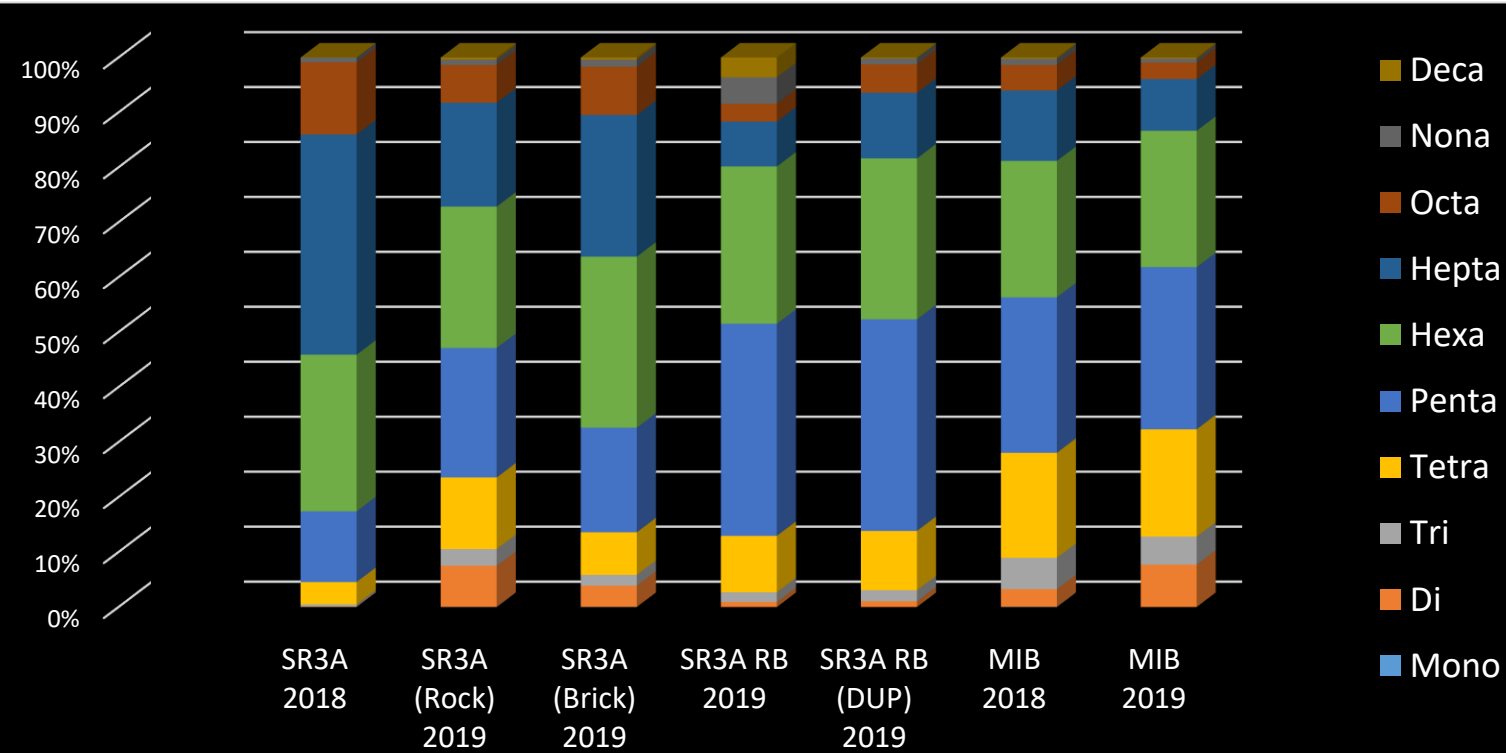


Right & Left Bank
Comparisons in
the “GE Reach”





Is the fill the source?
Brick Vs. Rock
at SR3A



Next Steps:

- Data validation complete by June 2020
- Provide final data to Dr. Lisa Rodenburg, Limnotech and Amy Sumner (SRRTTF database)
- Data complete in EIM by fall of 2020
- Draft report of combined 2018 & 2019 data in fall of 2020



Questions?