



Monitoring Green Infrastructure

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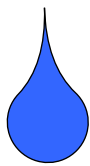


Application-Motivated Science

- Stormwater *Quantity*
 - *Does green infrastructure reduce stormwater as designed?*
- Stormwater *Quality*
 - Does green infrastructure remove pollutants as designed?



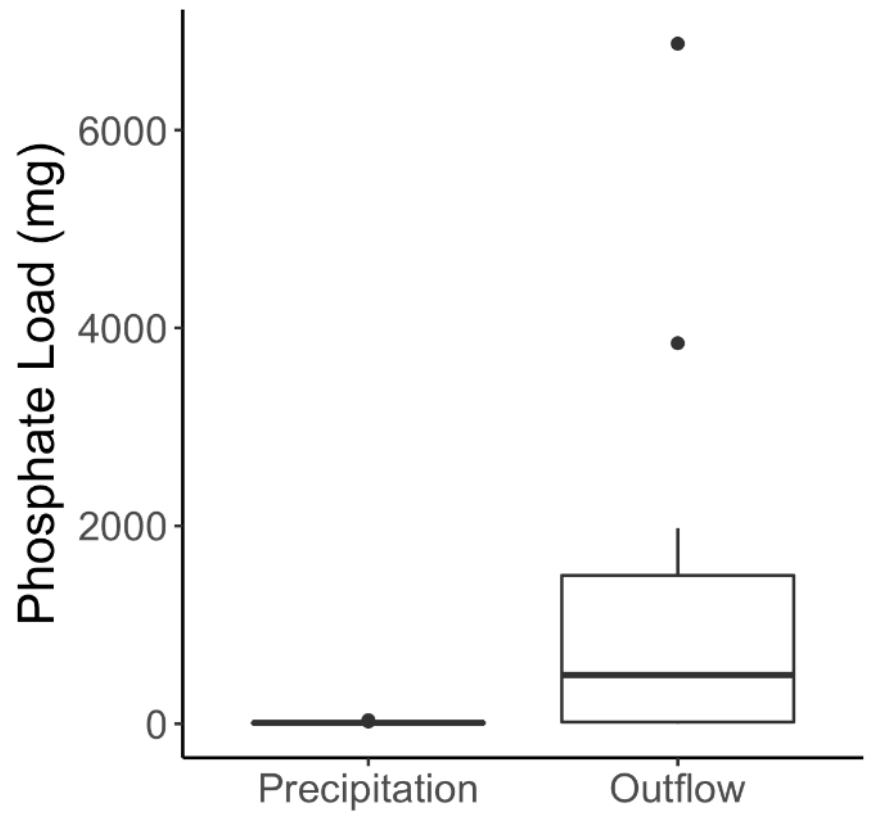
Phase 1 finding: **Green Roof – source of Phosphate**



Avg Input per storm: **10 mg**

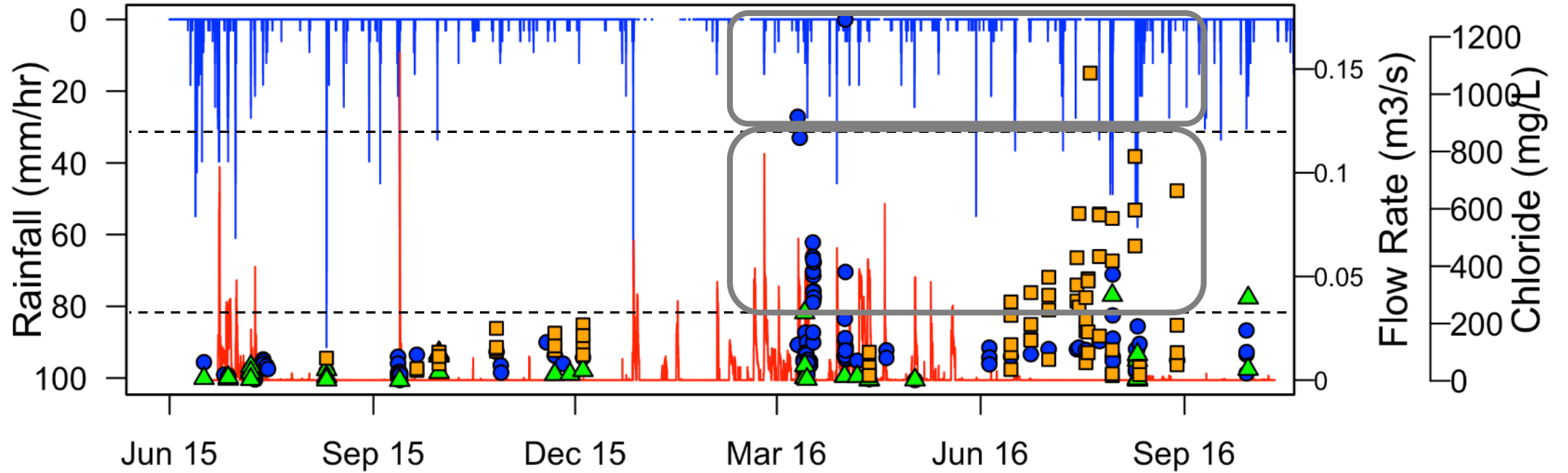


Avg Outflow per storm: **1300 mg**

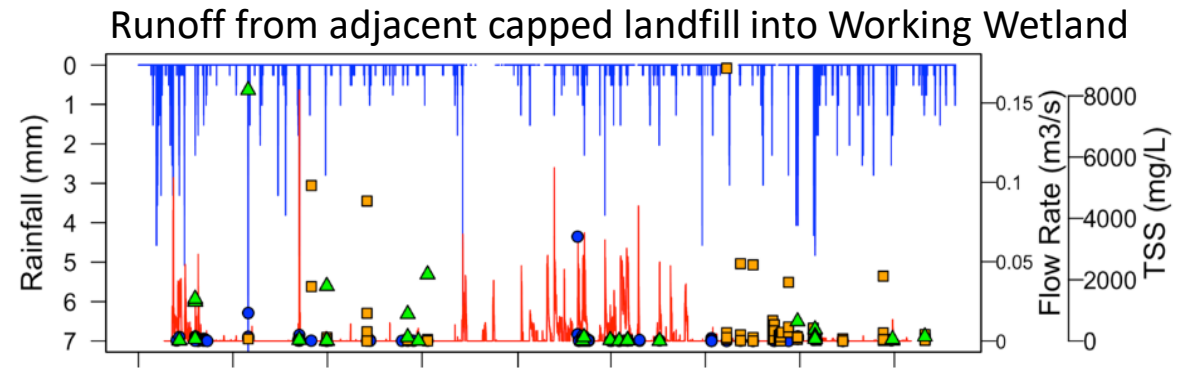


Phase 1 finding: High Road Salt Concentrations

Wetland Chloride Concentrations



Phase 1 finding: Landfill Inflow – Sediment Source



Phase 2 questions

- How will **management of landfill inflow** address problems caused by high sediment load?
- How does **road salt influence** water quality of green infrastructure?
- Has the change in **Green Roof management** continued to lessen phosphorus export?



How

- Flow meters
- Turbidity probes
- Conductivity sensors
- Etc.



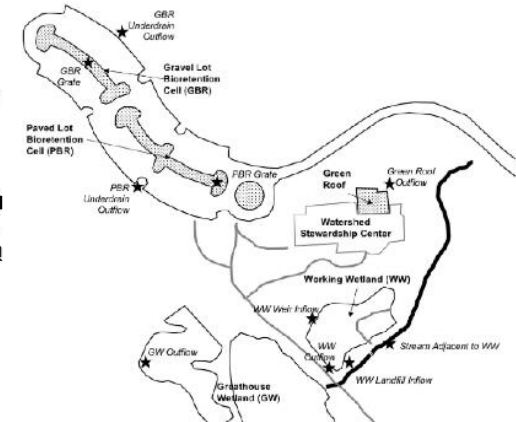
- & volunteers!
 - Whirl packs
 - Centrifuge tubes
 - Raincoat walks



Raincoat Walk

Here are simple questions you can answer if you are at the Watershed Stewardship Center during a storm. These will give us important information about the functioning of the green infrastructure and wetlands. If you don't visit a spot, you can skip those questions. Thanks for your help!

What are your initials? _____
What is today's date? _____
What time is it? _____
When did it start raining? _____



Who

- Cleveland Metroparks staff
- KSU students & professors
- Watershed Volunteers
- Environmental Heroes
- Trinity Intern



 KENT STATE
UNIVERSITY

TIME TO EXPLORE
Cleveland Metroparks

Activities with impact

- 4 Masters Theses
- 4+ Undergraduate Research Projects
- 30+ Citizen Scientists
 - Watershed Volunteer Program, Environmental Heroes
- 30+ Conference Presentation
 - local, regional, national & international

 Lauren Kinsman
@LKCBiogeochem

So gratifying to hear @highlyanne reflect on the success and bright future of our “storm water stoppers” partnership with @clevemetroparks Watershed Stewardship Center at #AGU18 ! @jenngrieser

AGU
100
ADVANCING EARTH
AND SPACE SCIENCE



12:02 PM - 13 Dec 2018

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Thank you!

- Emerald Necklace Endowment Fund (Phase 1 support)
- Cleveland Metroparks Operating (Phase 1 & 2 support)
- Ingalls Foundation (Phase 2 support)
- NEORSD Annual District Contribution to WSC (Phase 2 support)

