

# WELCOME!

## Monthly EnviroDIY in the DRB User Group Meeting

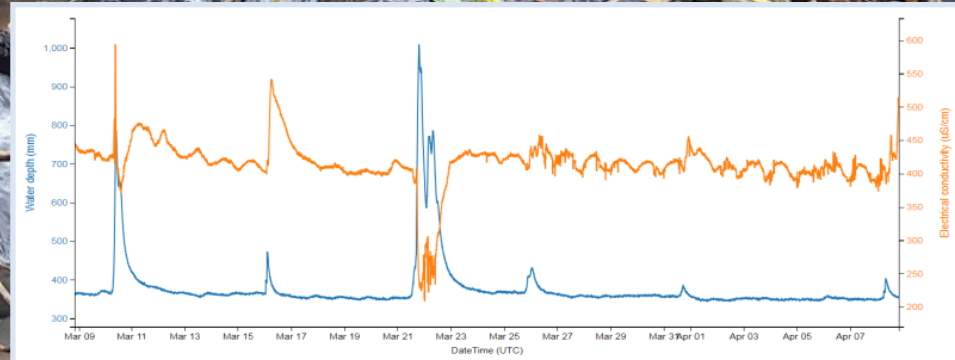
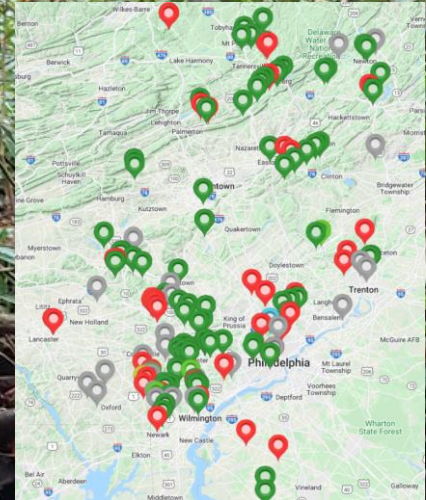
*Online, Thursday April 21, 2022, 2:30-3:30p*



EnviroDIY



Monitor My Watershed®



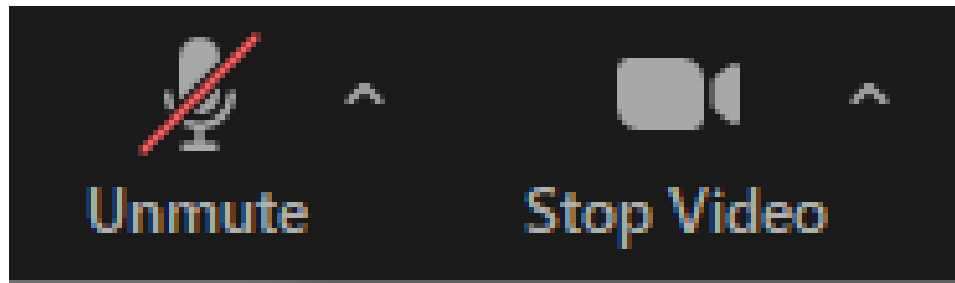
STROUD  
WATER RESEARCH CENTER



# Zoom Orientation



**\*Meeting is being recorded**



**\*Mute unless asking question**



# These Monthly Meetings

Recordings available at: <https://wikiwatershed.org/drwi/>

YouTube

Search

**WELCOME!**  
**Monthly EnviroDIY-DRWI User Group Meeting**  
*Online, Thursday February 17, 2021, 2:30-3:30p*

EnviroDIY

Monitor My Watershed®

STROUD

February 2022 EnviroDIY-DRWI Monthly Meeting

24 views • Feb 17, 2022

1 DISLIKE SHARE SAVE ...

Stroud Water Research Center Videos  
571 subscribers

SUBSCRIBE

# These Monthly Meetings

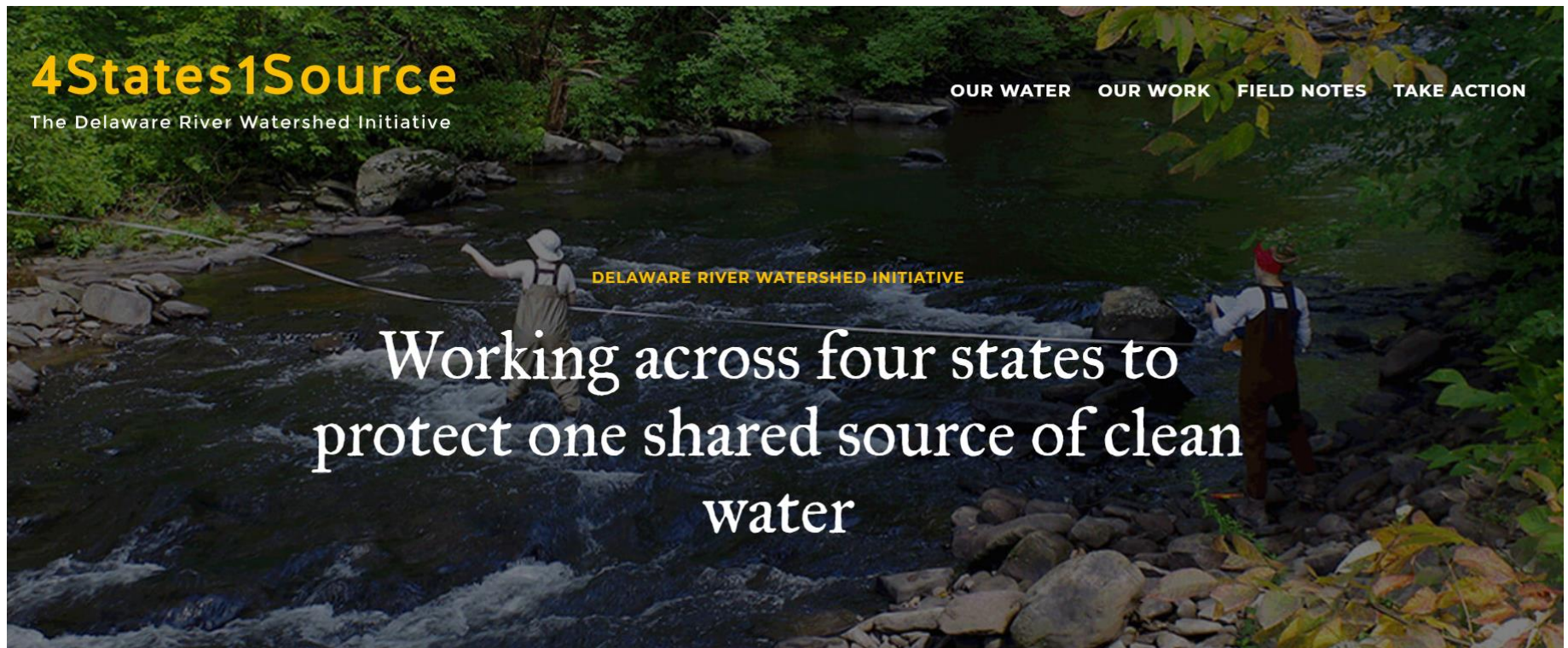
- Every third Thursday of the month
- 2:30-3:30p
- Zoom link will remain the same:  
<https://us02web.zoom.us/j/81881801310?pwd=eUFmbXZLbmRibVcxa1dtNVhzRmNvZz09>
- Reminder email one week prior to each month's meeting
  - All are welcome, please share
  - **And let us know if others should be added**

# REMINDER

- Attendees include:
  - Groups working in Delaware River Watershed Initiative (DRWI)
  - Groups working in Delaware River Basin (DRB) but not DRWI
  - Folks from outside the DRB
- Stroud Center support via DRWI and C-SAW

# Delaware River Watershed Initiative (DRWI)

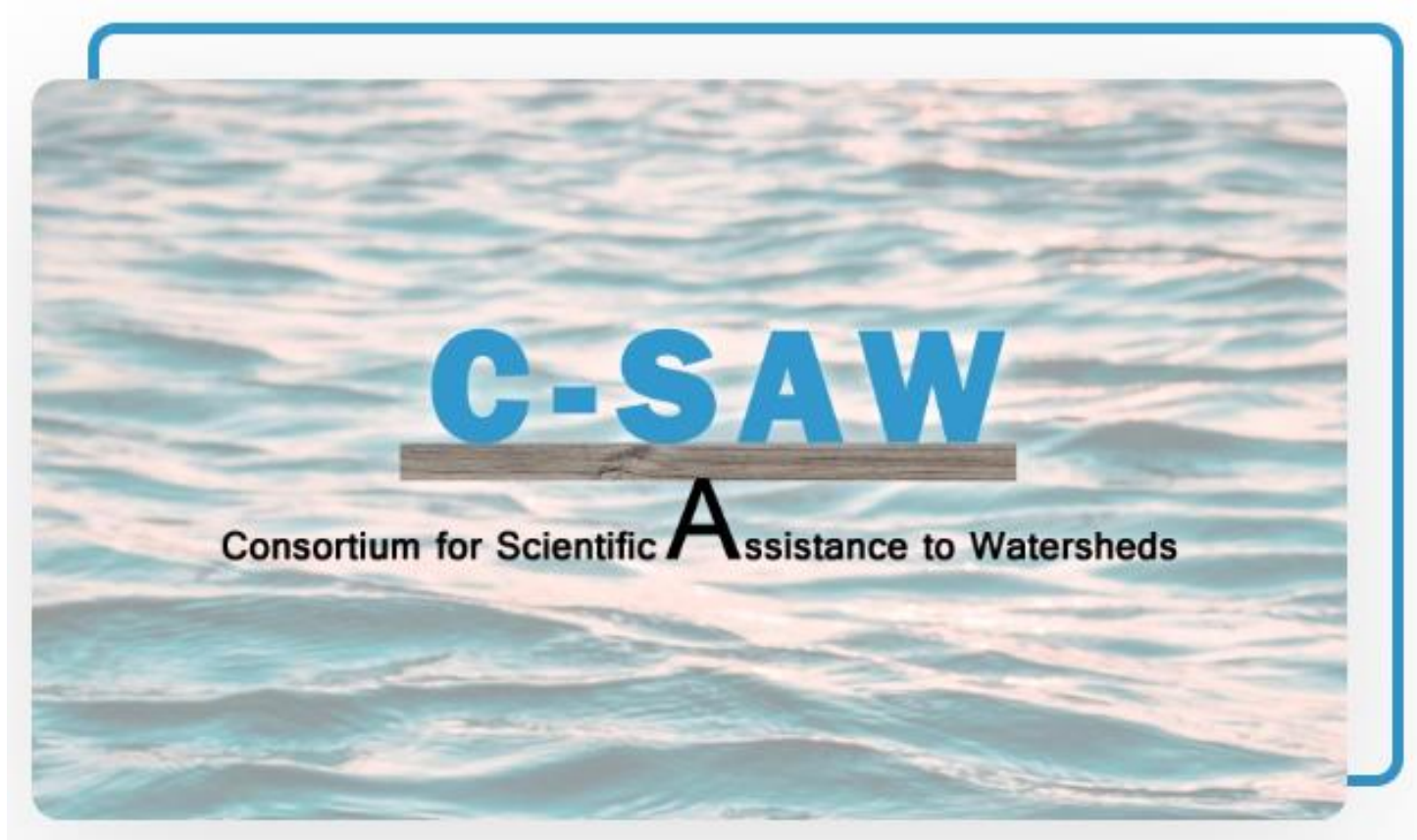
<https://4states1source.org/>





# C-SAW

<https://www.c-saw.info/>



# Goals for these monthly meetings

- Time to check-in, ask questions, report issues, network, etc.
- Updates from the Stroud Center
- Presentations
  - **Station Owner/Manager Presentations** – communicate about individual situations, local watershed work
  - **Focus Topic Presentations** – guest presenters talk about technical/ecological/other focus topics

*\*All of this to support gathering good data and using it purposefully*



# Stroud Center project personnel

## Stroud Center Facilitators:

David Bressler



Project facilitator

Rachel Johnson



Research Engineer  
Technician

Christa Reeves



Northern DRB  
technician and  
organization  
collaborator

Shannon Hicks



Research Engineer,  
Mayfly and EnviroDIY  
Inventor/Designer

# Stroud Center project personnel

## Master Watershed Steward Facilitators:

Carol Armstrong



George Seeds



Master Watershed  
Steward Program



PennState Extension

# Stroud Center project personnel

## Stroud Center DRWI Leads:

Dr. John Jackson



Senior Research Scientist

Matt Ehrhart



Director of Watershed Restoration

Dr. David Arscott

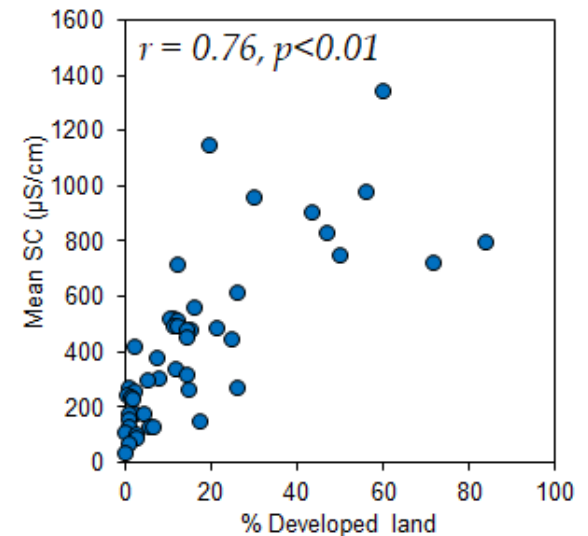


Executive Director, President  
Research Scientist



# Stroud Center Perspective – EnviroDIY in the DRB

- Primary Goal
  - Support Station owners, managers, and volunteers
  - Use stations for local purposes
- Secondary Goal
  - Analyze basin-wide data set
  - Develop tools to characterize and contextualize watersheds

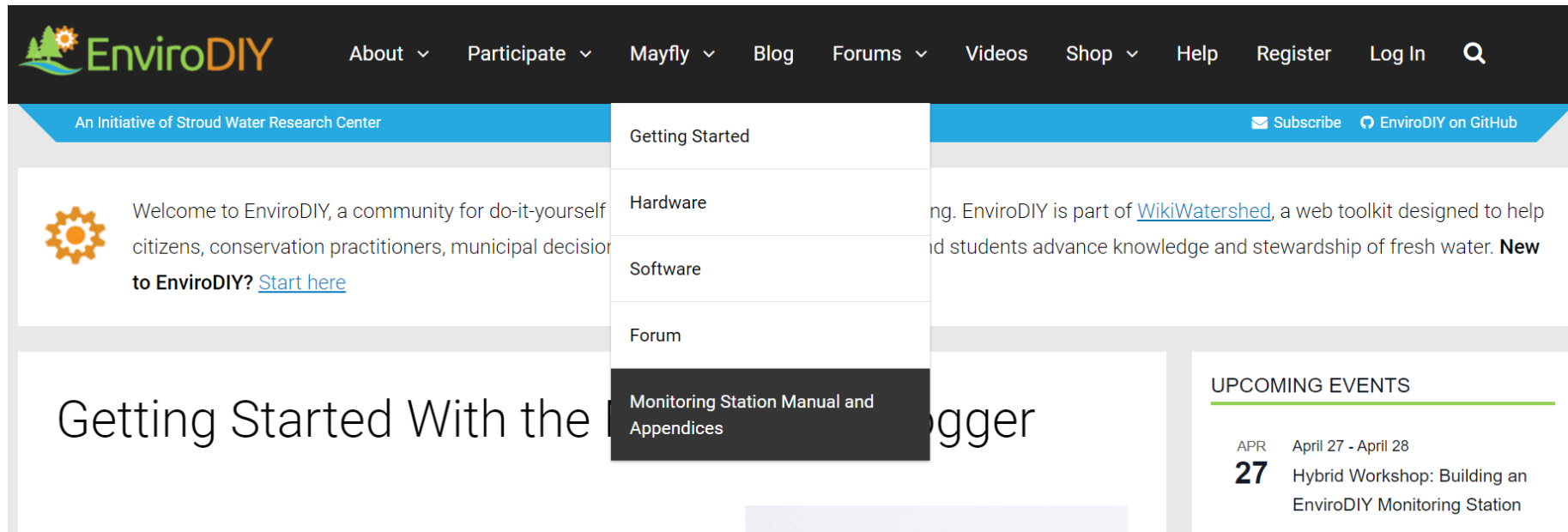


# Today's Agenda

1. Introduction
2. Stroud Updates
3. Presentations:
  - Winter storm chloride/conductivity rating curves
  - Analysis of DRB continuous data – Diana Oviedo-Vargas, Stroud Water Research Center
4. Discussion
5. Conclusion

# Stroud Center Updates

- EnviroDIY manual has been updated and has a new searchable format



The screenshot shows the EnviroDIY website. The top navigation bar is dark blue with the EnviroDIY logo on the left and links for About, Participate, Mayfly, Blog, Forums, Videos, Shop, Help, Register, and Log In on the right. Below the navigation bar is a light blue banner with the text "An Initiative of Stroud Water Research Center" on the left and "Subscribe" and "EnviroDIY on GitHub" on the right. The main content area is white. On the left, there is a welcome message: "Welcome to EnviroDIY, a community for do-it-yourself citizens, conservation practitioners, municipal decision makers. Want to get started? [Start here](#) to EnviroDIY?". In the center, a navigation menu is open, showing links for Getting Started, Hardware, Software, Forum, and Monitoring Station Manual and Appendices (which is highlighted in dark blue). On the right, there is a section titled "UPCOMING EVENTS" with a green underline. It lists an event for April 27 - April 28: "Hybrid Workshop: Building an EnviroDIY Monitoring Station".

EnviroDIY

About ▾ Participate ▾ Mayfly ▾ Blog Forums ▾ Videos Shop ▾ Help Register Log In

An Initiative of Stroud Water Research Center

Subscribe EnviroDIY on GitHub

Welcome to EnviroDIY, a community for do-it-yourself citizens, conservation practitioners, municipal decision makers. Want to get started? [Start here](#) to EnviroDIY?

Getting Started

Hardware

Software

Forum

Monitoring Station Manual and Appendices

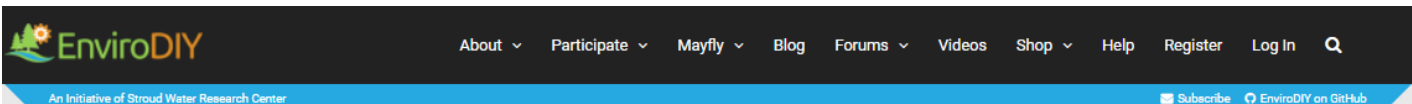
UPCOMING EVENTS

APR 27 April 27 - April 28 Hybrid Workshop: Building an EnviroDIY Monitoring Station



# Stroud Center Updates

<https://www.envirodiy.org/knowledge-base/>



Welcome to EnviroDIY, a community for do-it-yourself environmental science and monitoring. EnviroDIY is part of [WikiWatershed](#), a web toolkit designed to help citizens, conservation practitioners, municipal decision-makers, researchers, educators, and students advance knowledge and stewardship of fresh water. **New to EnviroDIY?** [Start here](#)






## Search the Knowledge Base

 Search the Knowledge Base...

### Help Topics

#### EnviroDIY Monitoring Station Manual (9 Articles)









The EnviroDIY team created this manual to help you build, program, and install an EnviroDIY Monitoring Station. Please leave feedback on the individual articles so that we can continue to improve the documentation.

-  1. Key Terms and Links
-  2. EnviroDIY Overview
-  3. EnviroDIY Monitoring Station
-  4. Preparing the Mayfly Data Logger
-  5. Programming and Activating an EnviroDIY Monitoring Station
-  6. Building an EnviroDIY Monitoring Station
-  7. Installing an EnviroDIY Monitoring Station
-  8. Monitoring Station Management
-  9. References and Acknowledgments

 View all

#### EnviroDIY Monitoring Station Manual Appendices (8 Articles)

The EnviroDIY Monitoring Station appendices contain supplemental information to help you manage your EnviroDIY Monitoring Station. Please leave feedback on the individual articles so that we can continue to improve the documentation.

-  1. Battery and Solar Options
-  2. Example Data
-  3. Data Patterns
-  4. Troubleshooting
-  5. Commercial Sensors
-  6. Field Supplies Checklist
-  7. Maintenance Checklist
-  8. Supplemental Sampling, Rating Curves, Loads

 View all

# Stroud Center Updates

- New model of the Hydros 21 CTD sensor by Meter Group is now available

HYDROS 21  
Conductivity, Temperature,  
Depth Sensor



# Stroud Center Updates

- Mayfly v1.1 now available on EnviroDIY.org shop and on Amazon
- EnviroDIY cell board now available on EnviroDIY.org shop and on Amazon





# Stroud Center Updates

- Reminder to request assistance via the EnviroDIY Service Request Form
  - <https://wikiwatershed.org/drwi/>



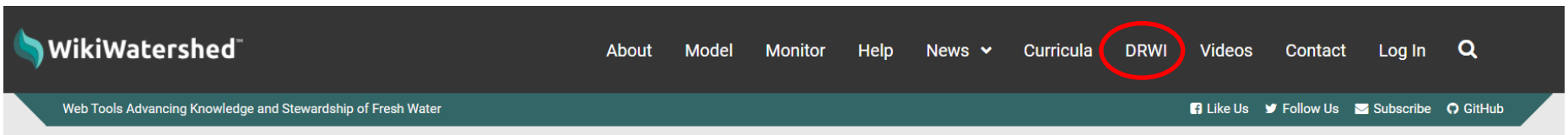
## EnviroDIY Monitoring Station Service Request Form

Please complete this form with as much information as possible to assist Stroud Water Research Center technicians in troubleshooting your problem. For extremely urgent issues please contact the Stroud Center team directly ([rjohnson@stroudcenter.org](mailto:rjohnson@stroudcenter.org); [shicks@stroudcenter.org](mailto:shicks@stroudcenter.org); [dbressler@stroudcenter.org](mailto:dbressler@stroudcenter.org)).

\*Please note, station assistance is only available to groups working within the Delaware River Basin.

# Stroud Center Updates

- Reminder on resources available at <https://wikiwatershed.org/drwi/>
- <https://wikiwatershed.org>



*Use the links below to jump to a specific section of this page.*

## General Resources

- [EnviroDIY Field Visit Data](#)
- [EnviroDIY Monitoring Station Help Resources](#)
- [Salt Monitoring Resources](#)
- [Data and Data Visualization Resources](#)
- [Volunteer Management Guidance Materials](#)
- [WikiWatershed Toolkit](#)
- [Project Updates](#)

## Meetings, Workshops, and Conferences

- [Monthly EnviroDIY-DRWI User Group Meetings](#)
- [User Support Workshops and Trainings](#)
- [Conference Presentations](#)
- [Watershed Ecology Workshops](#)

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### EnviroDIY Field Visit Data

EnviroDIY Field Visit Data Form (Online)

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Any questions before we move on?





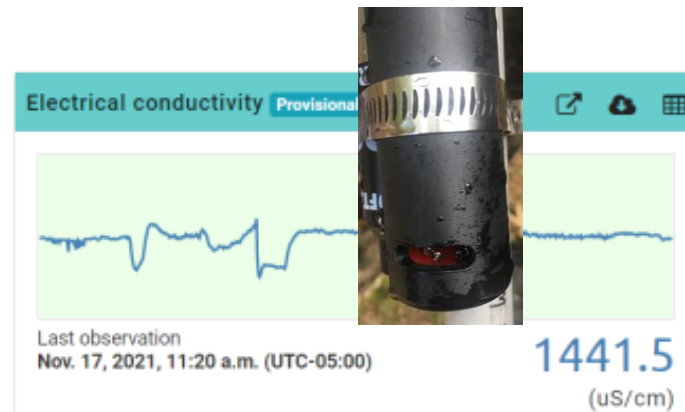
# Monthly Presentations

- Winter storm chloride/conductivity rating curves
- Analysis of continuous data from across the DRB – Diana Oviedo-Vargas, PhD

# Winter storm salt in urban DRB streams

- Selected urban streams targeted for winter storm salt data collection by numerous watershed groups

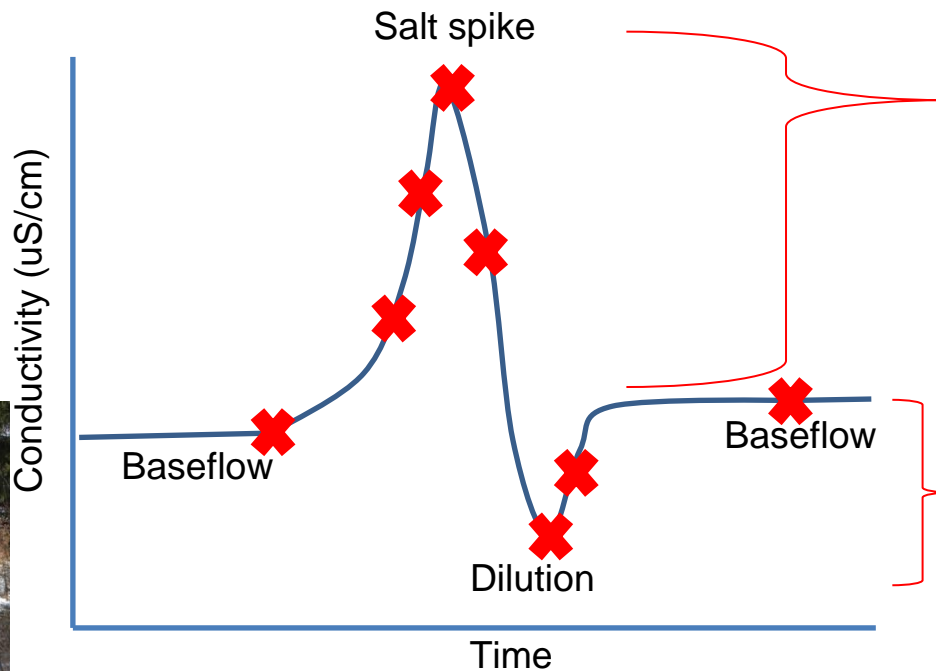
Grab sample, chloride measurement, and conductivity measurement



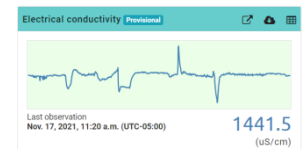
Samples being processed but some chloride test strip data currently available – this what we'll look at today



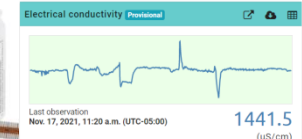
# Winter Storm Grab Sampling and Chloride Test Strip Measurements at EnviroDIY stations



During spikes, collect grab samples  
AND use chloride strips



During baseflow and dilution,  
only use chloride strips, no grab  
samples



# Samples/measurements

- Sample over single and/or multiple events

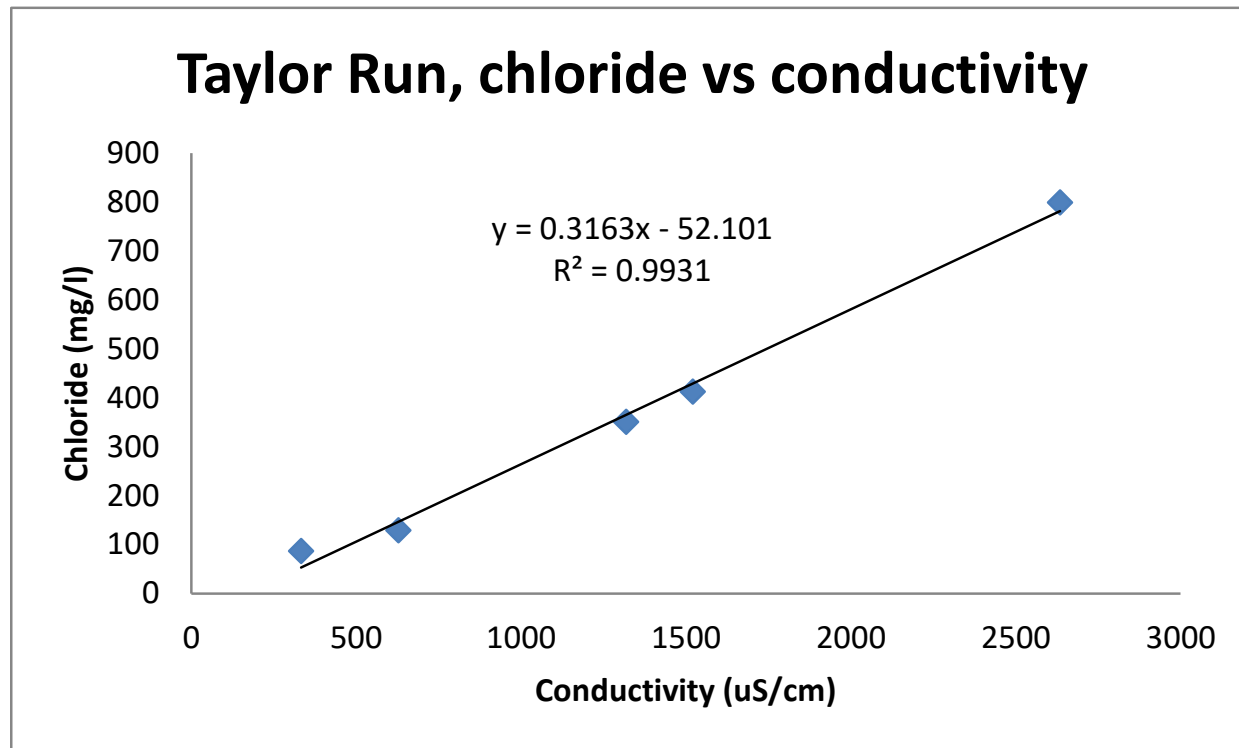


## Results – data sheets, conductivity and Cl test strips

## Example:

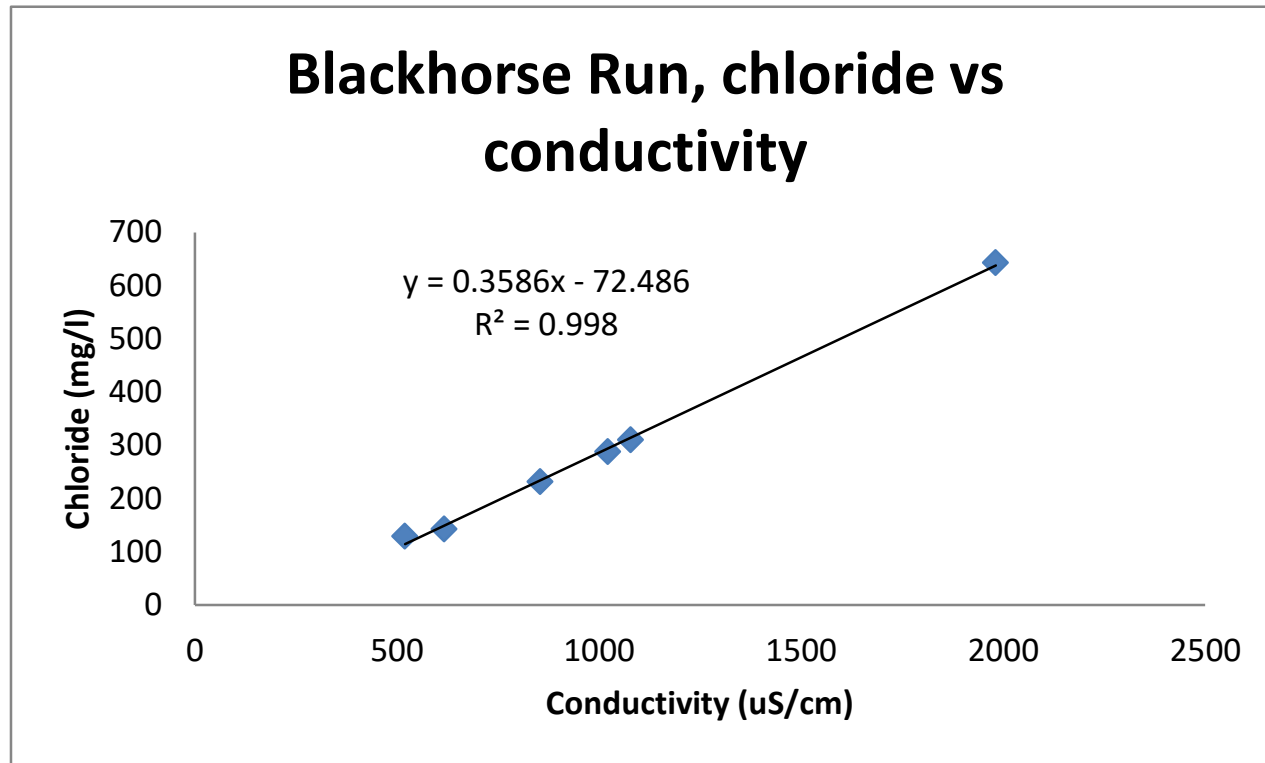
[illegible]

# Results – conductivity and Cl test strips



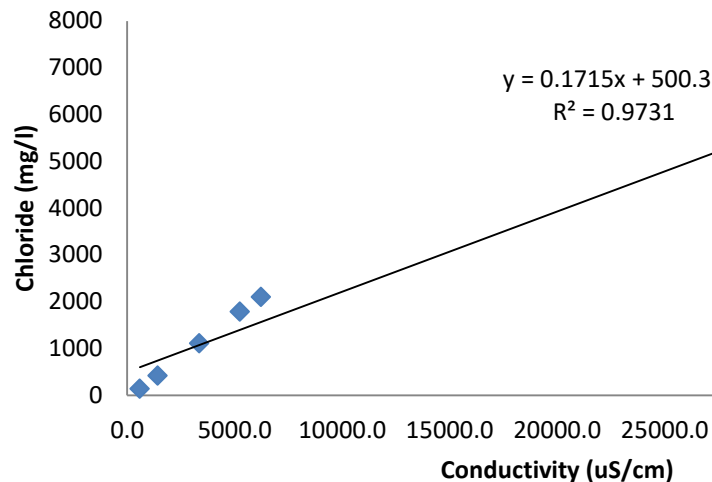


# Results – conductivity and Cl test strips



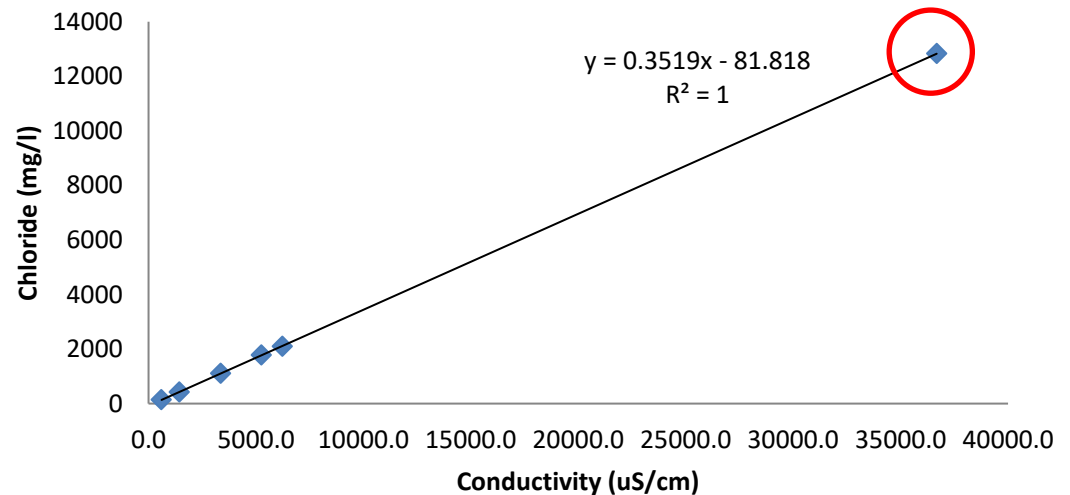
# Results – conductivity and Cl test strips

UT to Plum Run, Gordon Natural Area, chloride vs conductivity (high Cl value hit max possible value for test strip - value likely higher)

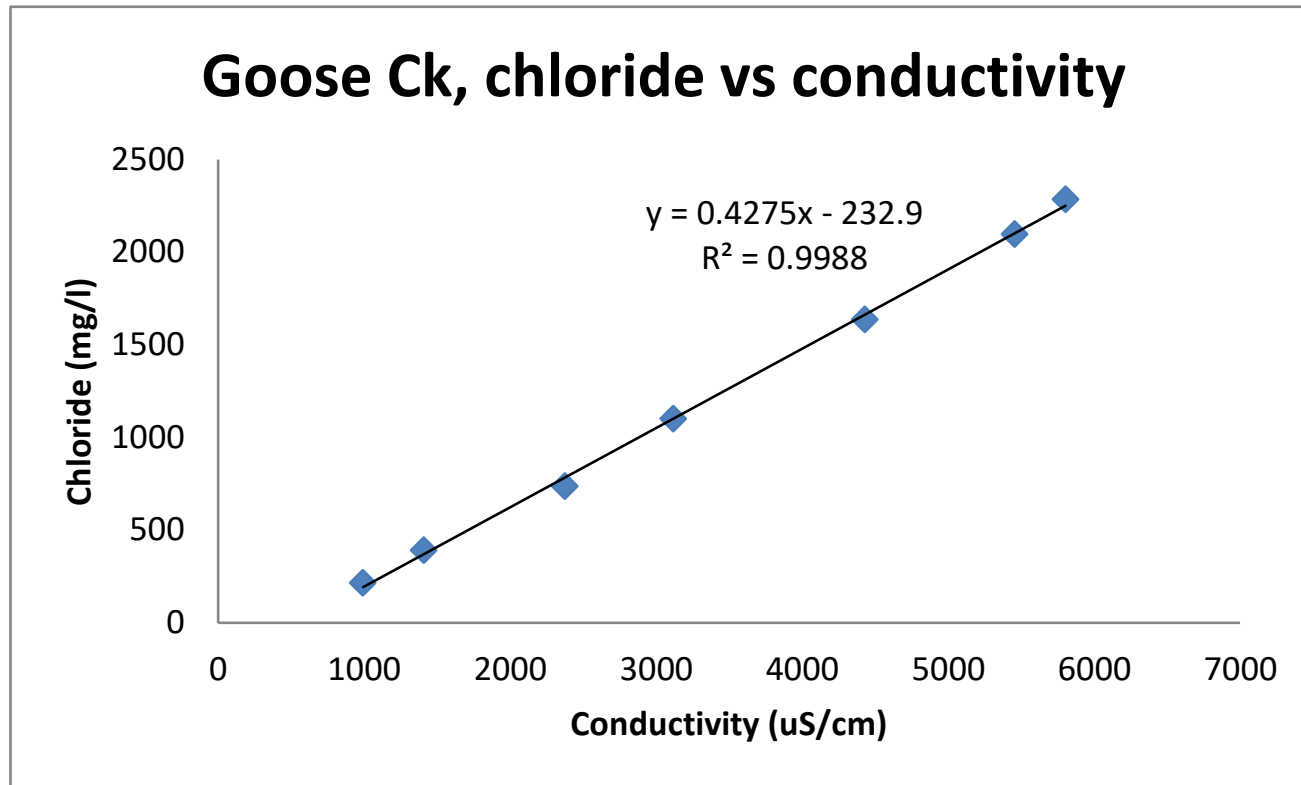


\*Max Cl strip value ~6000 mg/l

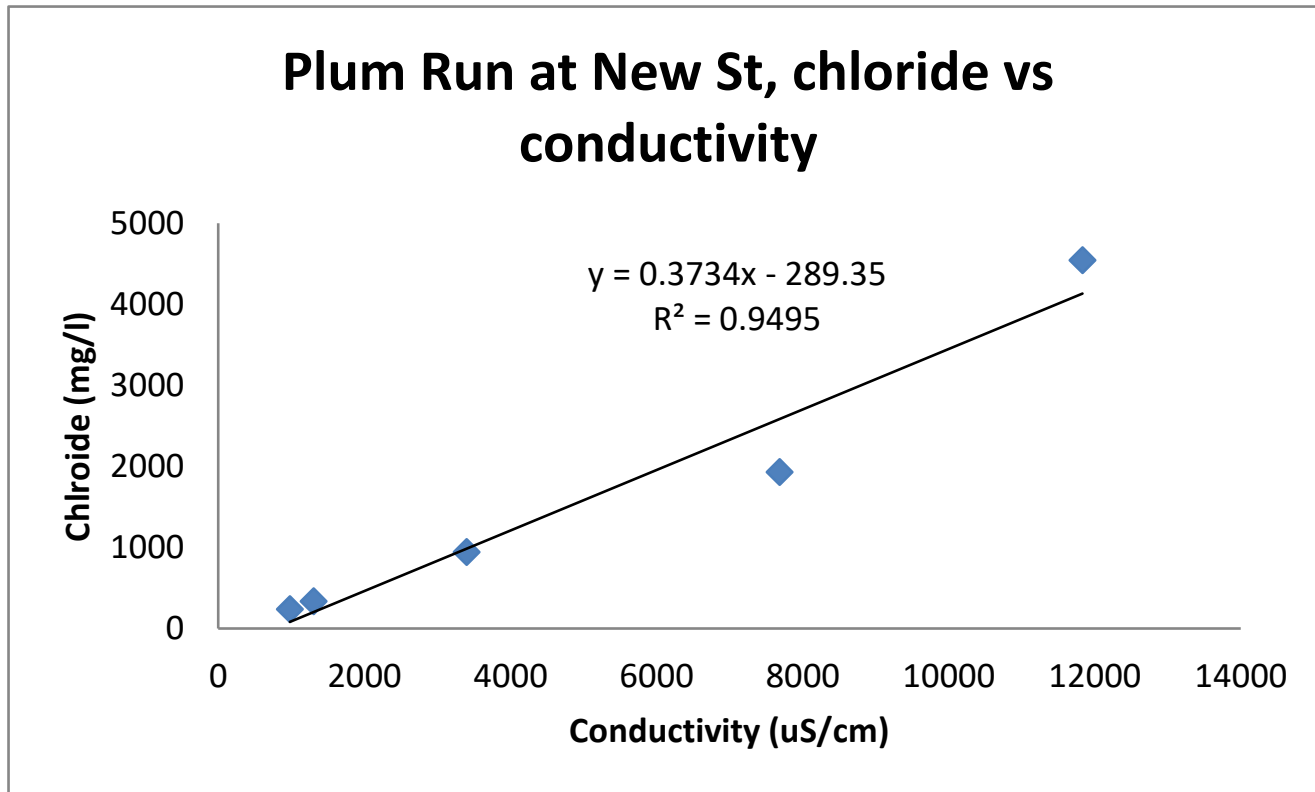
UT to Plum Run, Gordon Natural Area, chloride vs conductivity (high Cl value predicted based on lower five)



# Results – conductivity and Cl test strips

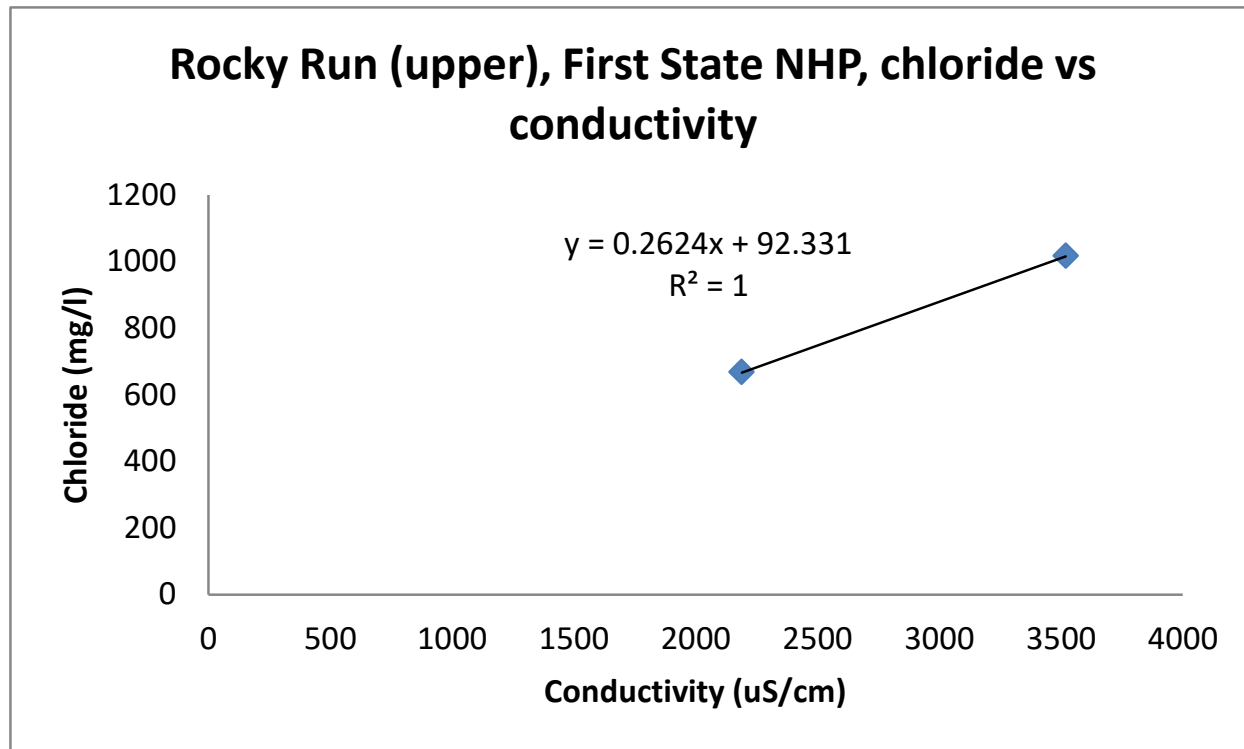


# Results – conductivity and Cl test strips

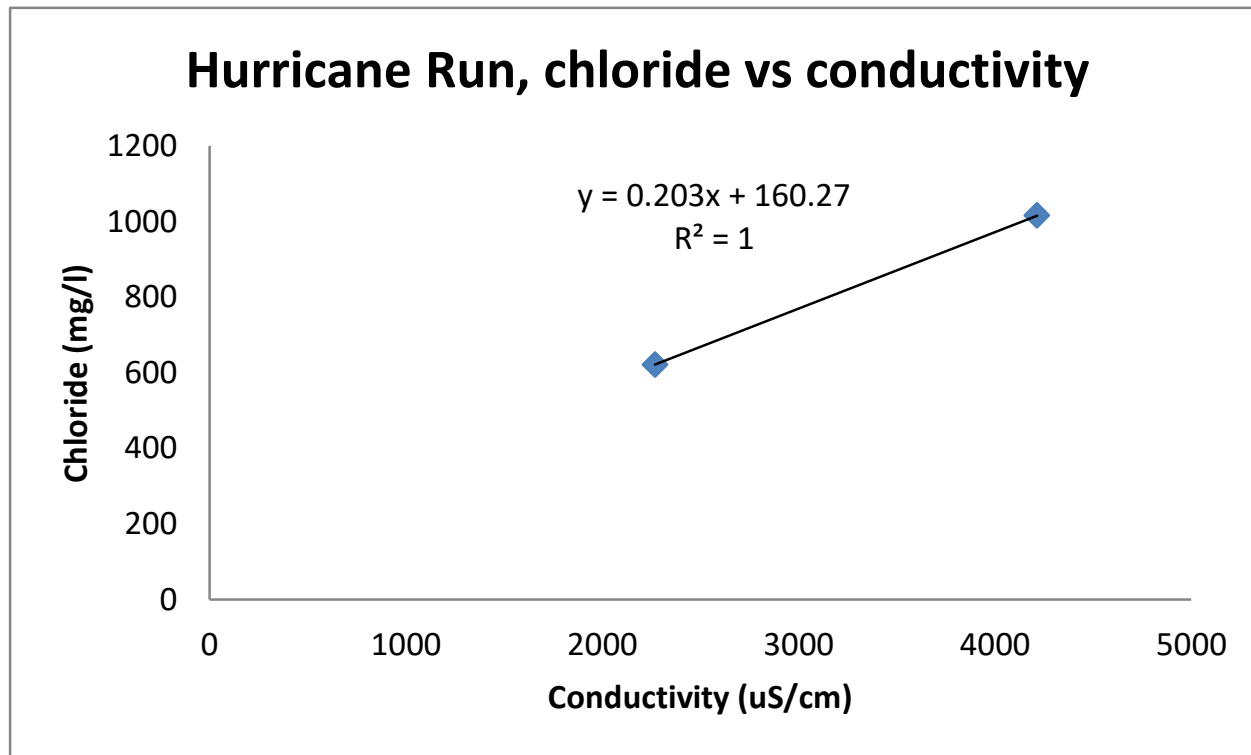




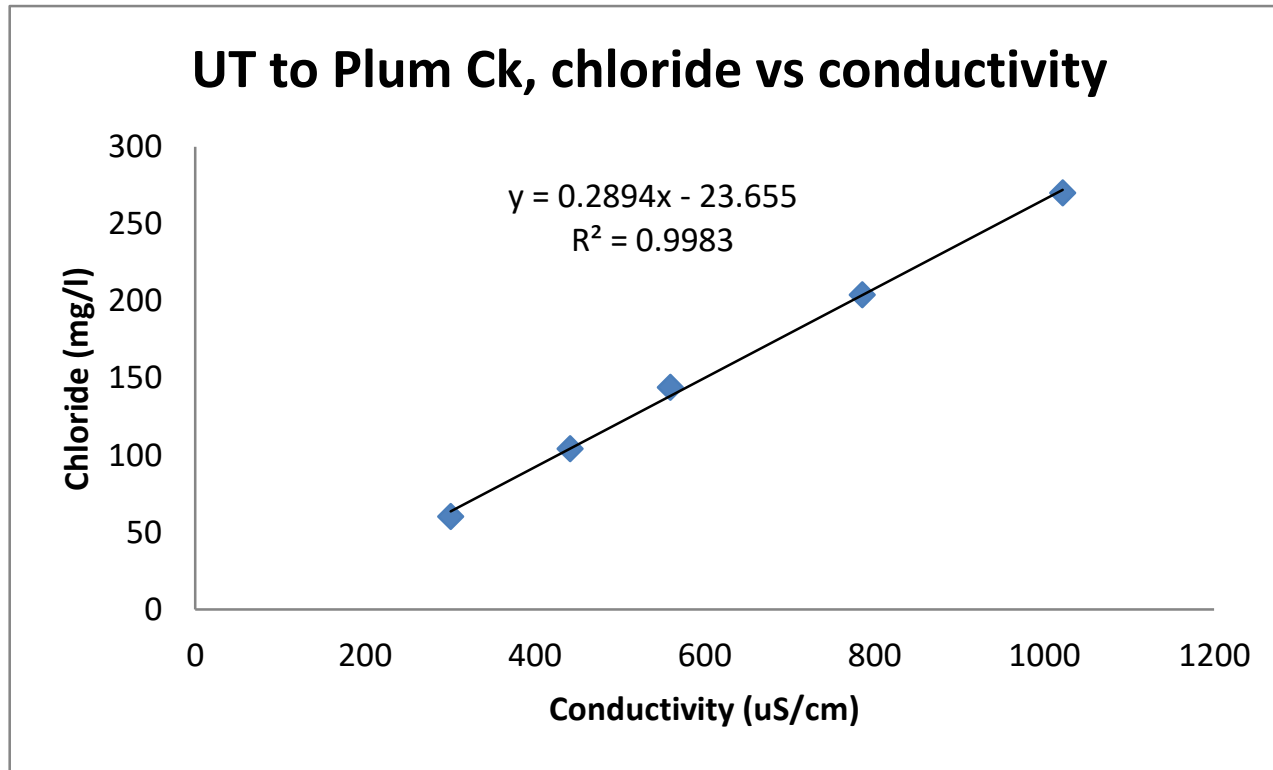
# Results – conductivity and Cl test strips



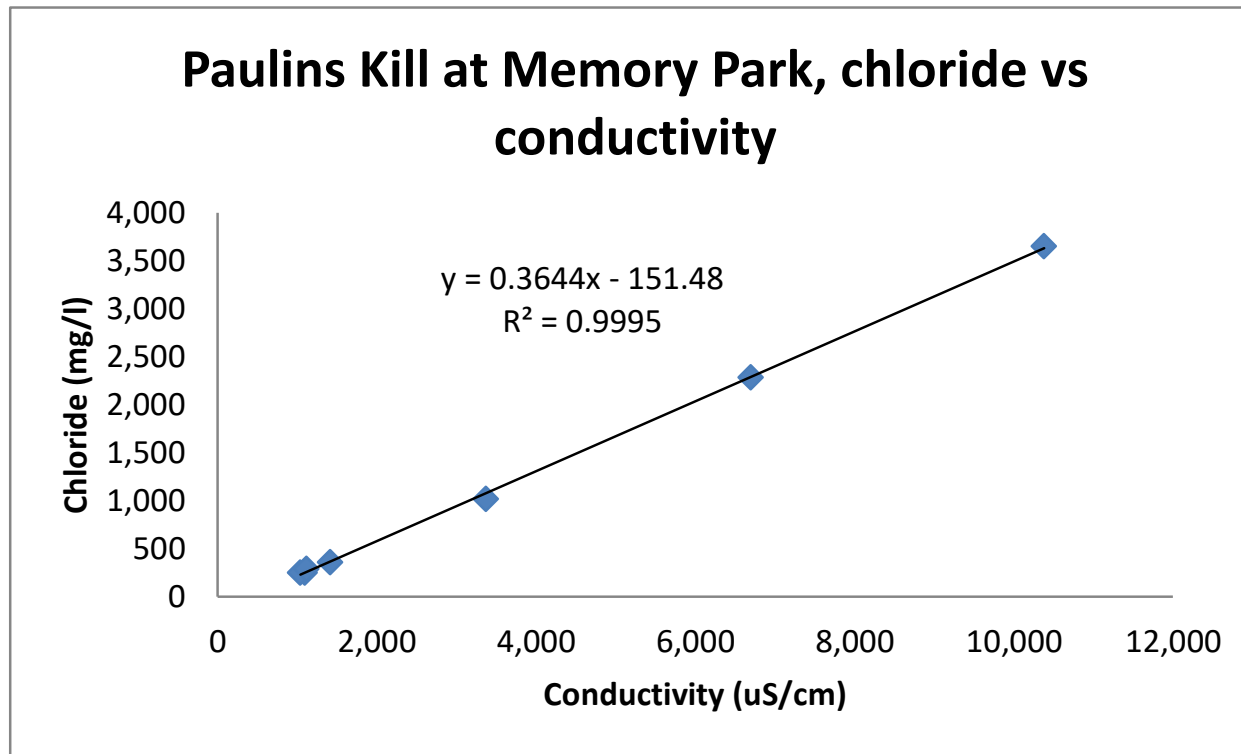
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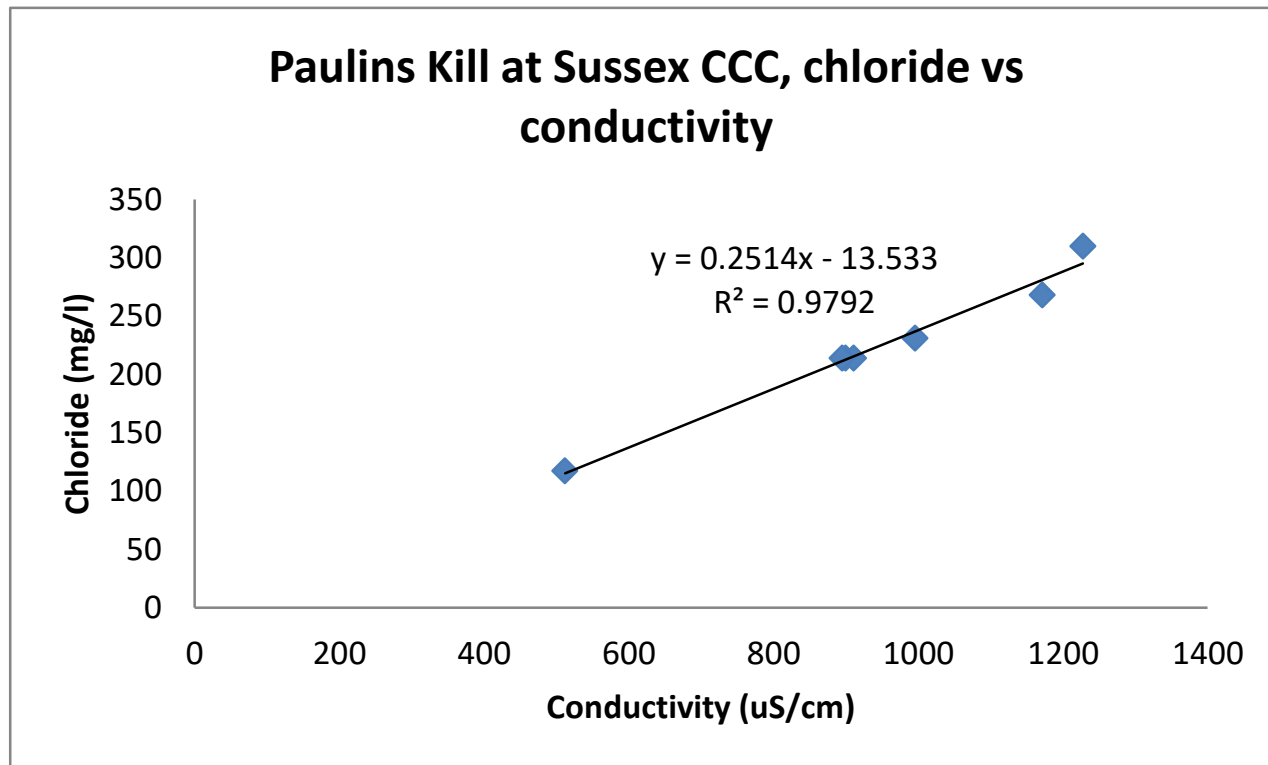


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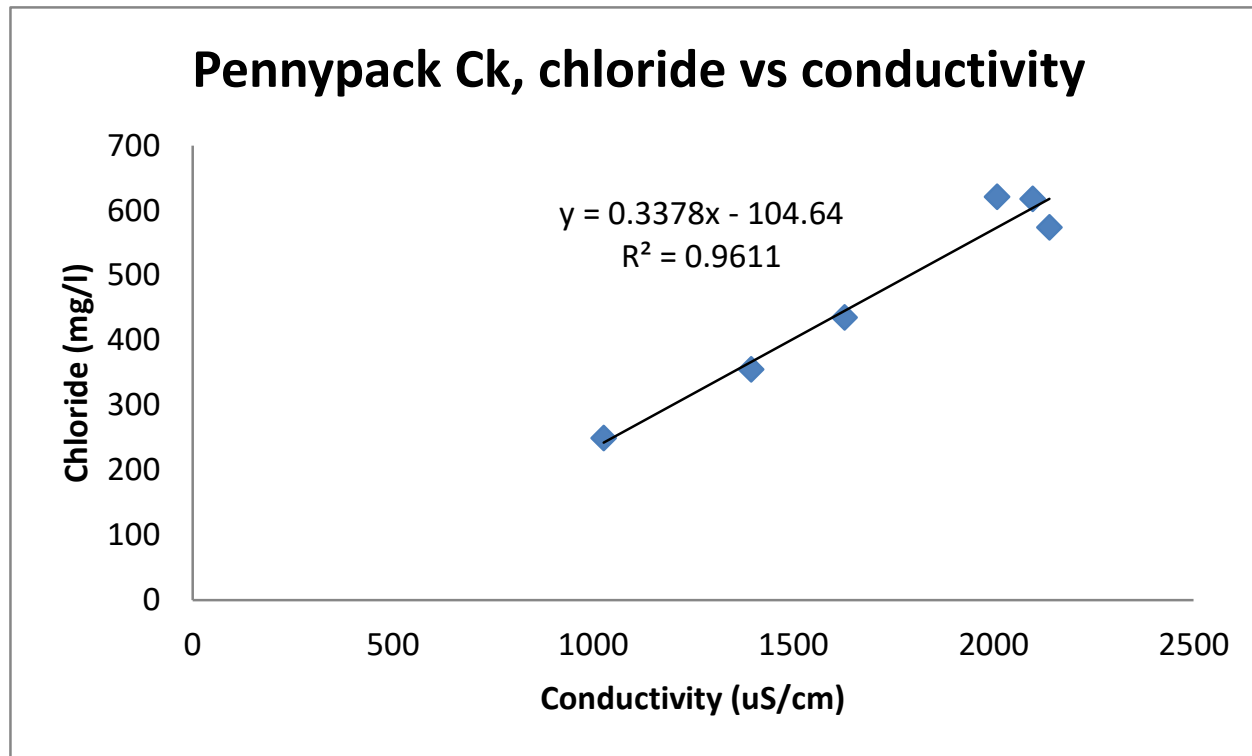




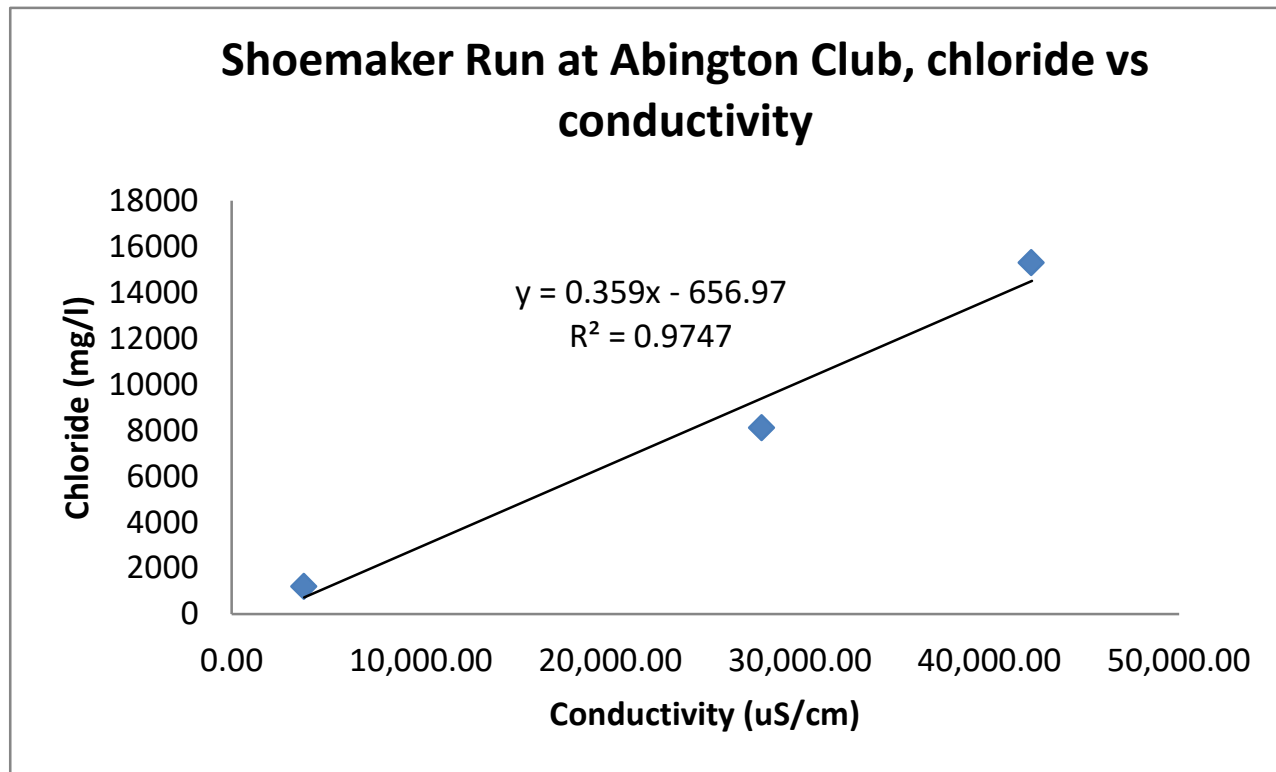
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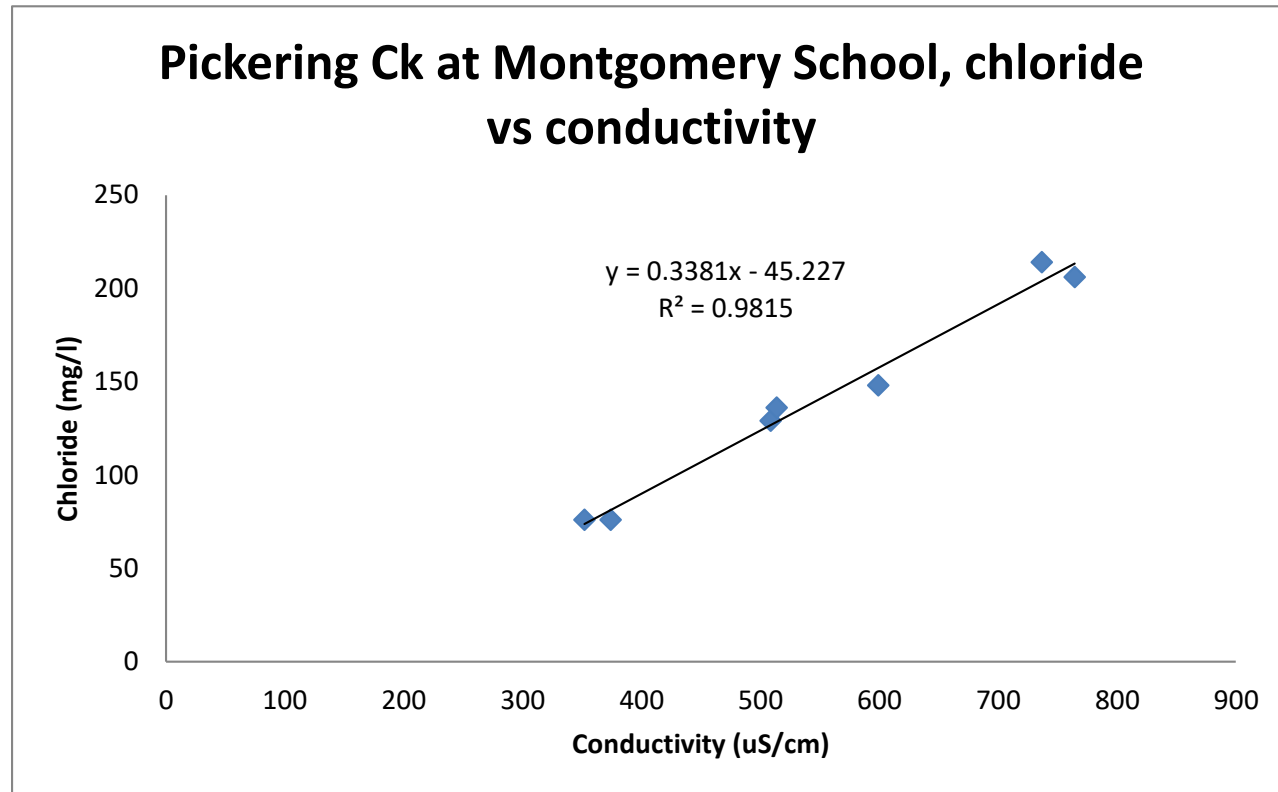
# Results – conductivity and Cl test strips



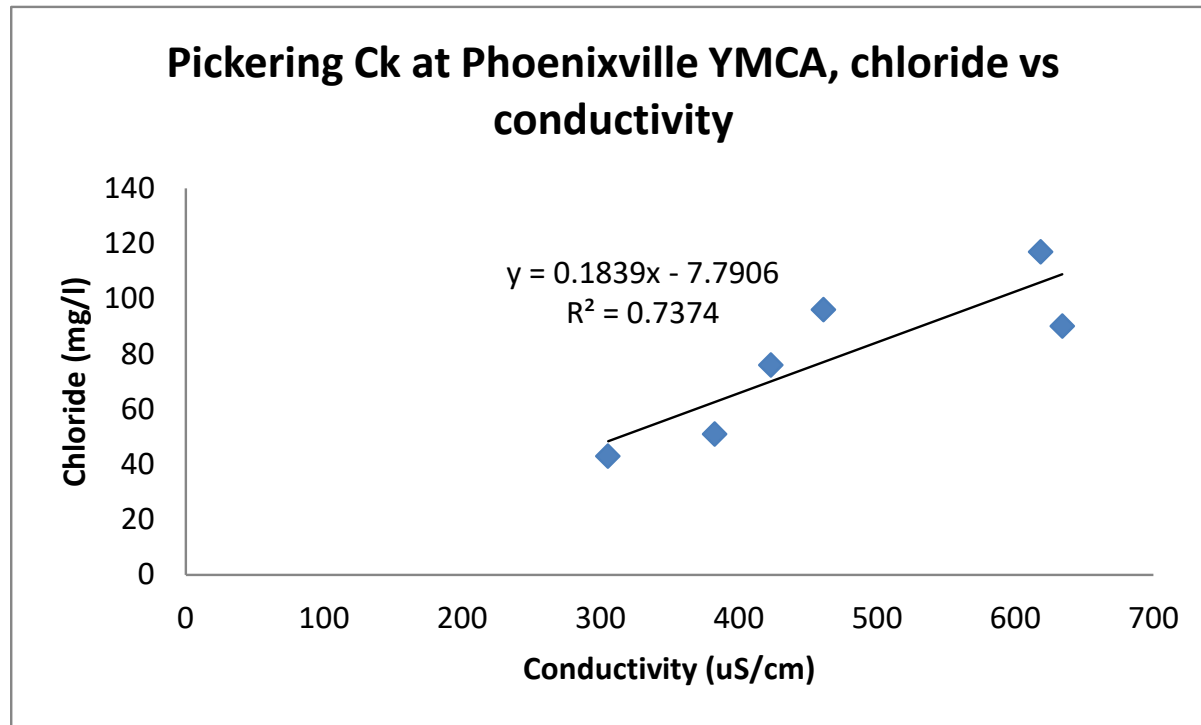
# Results – conductivity and Cl test strips



# Results – conductivity and Cl test strips



# Results – conductivity and Cl test strips



# Presentation

- A multifactor index to describe water quality using continuous data in the DRB – Diana Oviedo-Vargas, PhD, Stroud Water Research Center





# Future meetings

- May 19, 2022 – water temperature??

# Mentors currently available

- Carol Armstrong (MWS), [mnem.np@gmail.com](mailto:mnem.np@gmail.com), 610-659-7477
- George Seeds (MWS), [geoseeds@verizon.net](mailto:geoseeds@verizon.net), 484-886-9586
- Rachel Johnson (Stroud Center), [rjohnson@stroudcenter.org](mailto:rjohnson@stroudcenter.org), 973-557-8995
- Christa Reeves (Stroud Center)(in the north, situational), [christa@musconetcong.org](mailto:christa@musconetcong.org), 727-520-5849

***\*Anyone else interested? If so get in touch with Stroud Center or Carol or George***



# Conclusion

Next month's meeting will be on:

**Thursday May 19, 2021**  
**2:30-3:30p**



# Onward!

## Stroud Water Research Center, EnviroDIY-DRWI contacts:

- David Bressler, [dbressler@stroudcenter.org](mailto:dbressler@stroudcenter.org), 410-456-1071
- Shannon Hicks, [shicks@stroudcenter.org](mailto:shicks@stroudcenter.org), 610-268-2153 x267
- Rachel Johnson, [rjohnson@stroudcenter.org](mailto:rjohnson@stroudcenter.org), 973-557-8995
- Christa Reeves, [christa@musconetcong.org](mailto:christa@musconetcong.org), 908-537-7060

## Master Watershed Stewards, EnviroDIY-DRWI contacts:

- Carol Armstrong, [mnem.np@gmail.com](mailto:mnem.np@gmail.com), 610-659-7477
- George Seeds, [geoseeds@verizon.net](mailto:geoseeds@verizon.net), 484-886-9586