WELCOME!

Monthly EnviroDIY in the DRB User Group Meeting
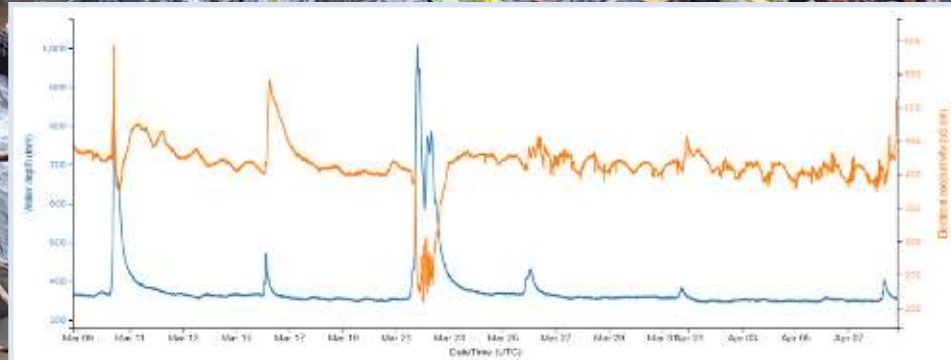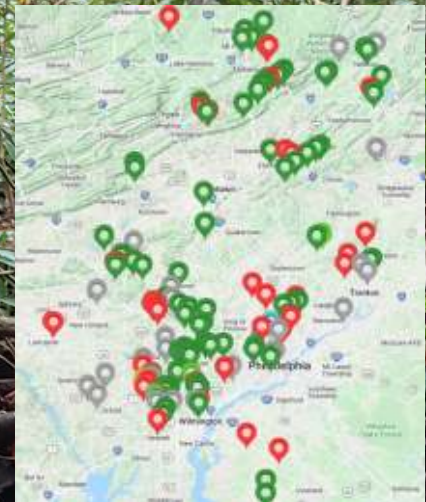
Online, Thursday, July 21, 2022, 2:30-3:30p

*Meeting is being recorded
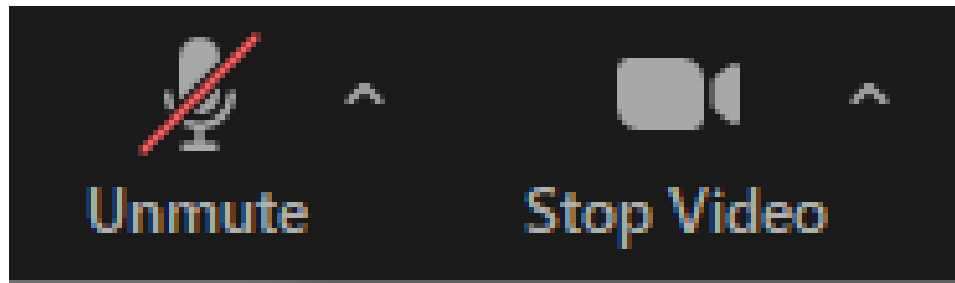

*Mute unless asking question

These Monthly Meetings

Recordings available at: https://wikiwatershed.org/drwi/
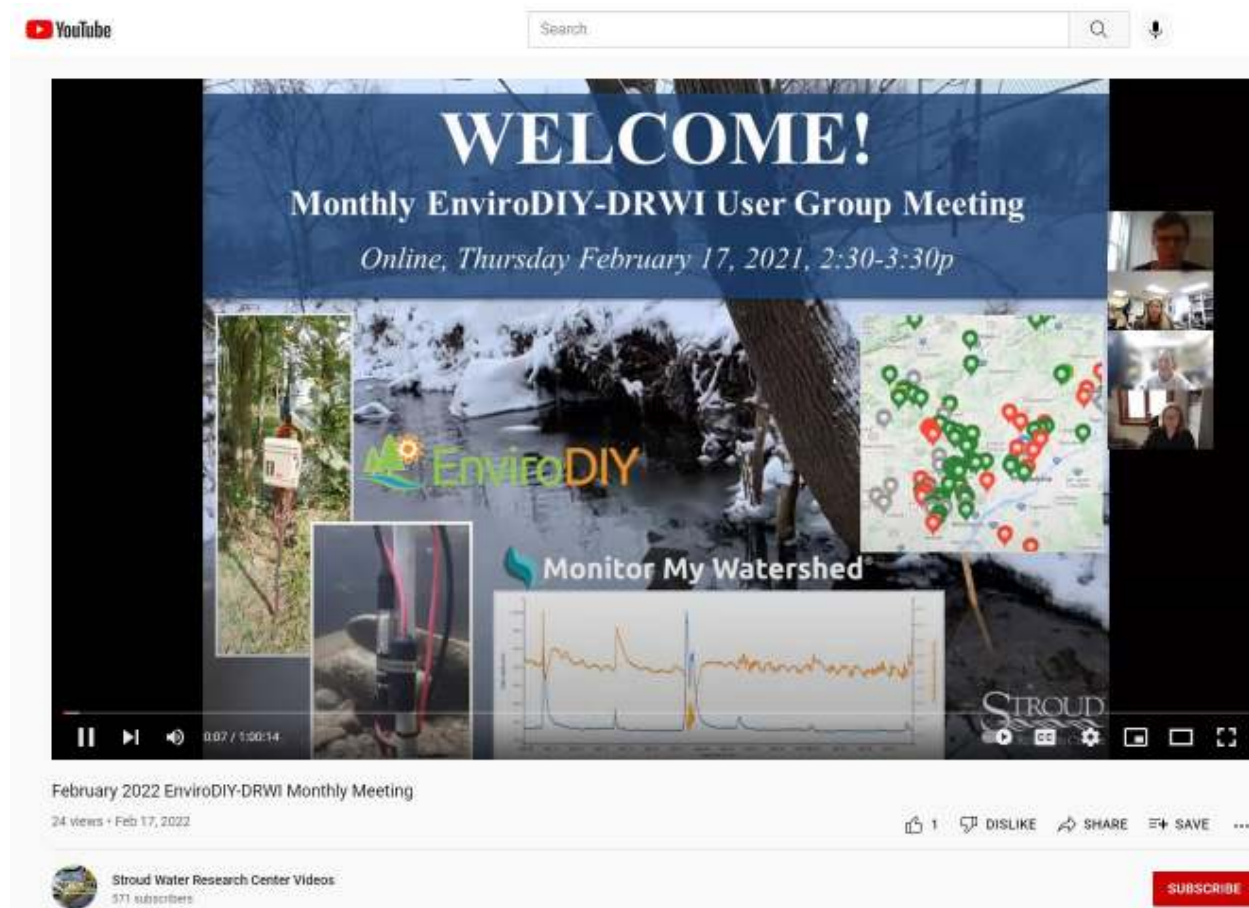
These Monthly Meetings

- 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

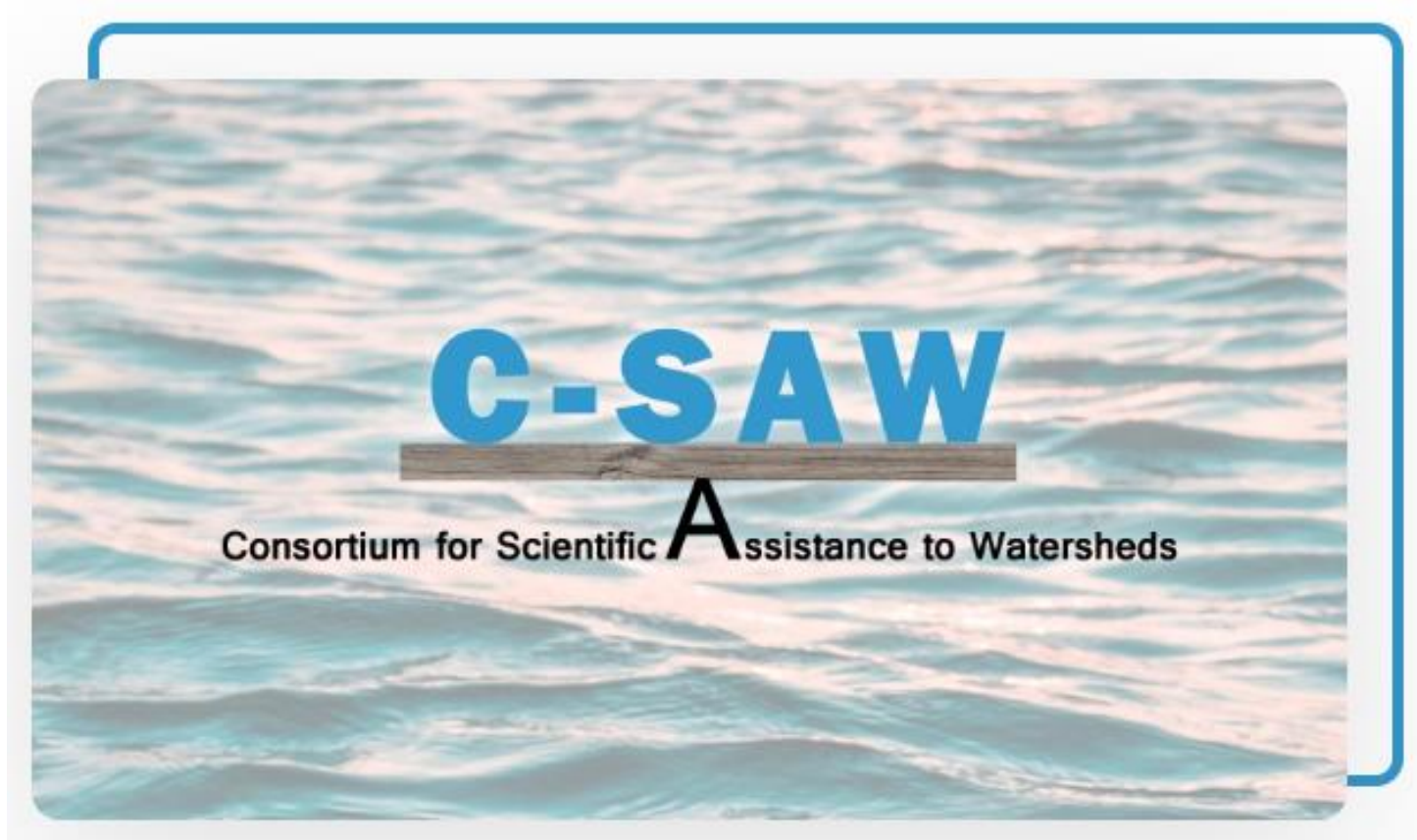- Stroud Center support via DRWI and C-SAW

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

Elena Hadley
Part-Time Environmental Educator
Research Technician

Stroud Center project personnel

Master Watershed Steward Facilitators:

Carol Armstrong   George Seeds

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

$r = 0.76, p<0.01$
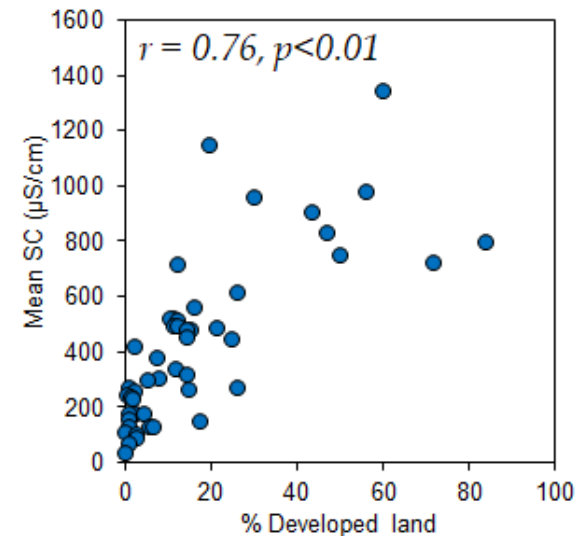
Today's Agenda

1. Introduction
2. Stroud Updates
3. Presentation: Collaborative project in the Tunkhannock Creek watershed in Monroe Co, PA to monitor a possible nearby warehouse development project,
   - Geoff Rogalsky (Tobyhanna Creek/Tunkhannock Creek Watershed Association) and Alex Jackson (Brodhead Watershed Association)
4. Discussion
5. Conclusion

Stroud Center Updates

- EnviroDIY Monitoring Station Manual has been updated and has a new searchable format

Stroud Center Updates

Stroud Center Updates

EnviroDIY Monitoring Station Parts List

This is the comprehensive parts list for building an EnviroDIY Monitoring station. Detailed instructions can be found in the EnviroDIY Monitoring Station Manual and Appendices available in the knowledge base.

Items with (*) in the Product Name are included in the EnviroDIY Monitoring Kit.

Please email webmaster@stroudcenter.org if you have trouble viewing this table.

EnviroDIY Parts List (PUBLIC) : Dynamic List

Product Name	Section in EnviroDIY online manual	Manufacturer	Vendor	VendorLink	Unit Cost	Quantity	Unit x Quantity	ModelDescription
EnviroDIY Mayfly Wireless Data Logging System								
EnviroDIY Monitoring Station Kit	Section 3.5	Stroud Water Research Center	EnviroDIY	Link	$475.00	1	$475.00	The EnviroDIY Monitoring Station Kit contains: Mayfly Data Logger and microUSB cable for connection with computer, EnviroDIY LTE bee a Hologram Global SIM card, 2 microSD cards and standard SD card adapter, vertical microSI clock, waterproof Pelican case with pre-cut foam and pre-drilled holes for cable glands (one for holding logger inside the Pelican case, 6-volt 3.5-watt solar panel with mounting bracket a Mayfly Data Logger, 2 waterproof cable glands: 1 small (3/8"NPT for cables 0.08" – 0.24"), 1 for mounting the waterproof box on a post, Grove cable and a Grove-to-3.5 mm jack adapter and stainless steel retaining pin for attaching sensor bundle to steel rebar (rebar not include
EnviroDIY Mayfly Data Logger Starter Kit		Stroud Water Research Center	Amazon / EnviroDIY	Link	$130.00	1	$130.00	Includes waterproof enclosure with clear lid, 0.5watt solar panel, Custom microSD connector adapter, 1-meter microUSB cable, and 2 Grove cables.
CR1220 12mm Diameter - 3V Lithium Coin Cell Battery *	Section 4.4	Panasonic - BSG	Digi-Key	Link	$1.01	1	$1.01	lithium batteries for the Mayfly board so they'll retain the clock time after programming
Lithium Ion Battery Pack - 3.7V 4400mAh (recommended size)	Section 6.1	Adafruit Industries LLC	Adafruit	Link	$19.95	1	$19.95	This lithium ion pack is made of 2 balanced 2200mAh cells for a total of 4400mA capacity
Lithium Ion Battery Pack - 3.7V 4400mAh (recommended size)	Section 6.1	Adafruit Industries LLC	Digi-Key	Link	$19.95	1	$19.95	optional vendor
EnviroDIY LTE Bee *	Section 6.1	Stroud Water Research Center	EnviroDIY		$50.00	1	$50.00	Bluetooth, Cellular 4G LTE CAT-M1 (AT&T/Verizon) Transceiver Module Antenna Not Include
Cellular LTE antenna *	Section 6.1	PulseLarsen Antennas	Digi-Key	Link	$4.50	1	$4.50	4G LTE cellular antenna with U.FI connector
Hologram Global SIM Card *	Section 6.1	Hologram	Hologram	Link	$5.00	1	$5.00	SIM card required for 2G or 3G communication
Medium 6V 2W Solar panel *	Section 6.4, 7.3	Voltaic Systems	Adafruit	Link	$29.00	0	$0.00	Standard for CTD sensor install
Grove 4Pin Cables 20cm (5PACK) *	Section 6.3	Seeed Technology Co., Ltd	Digi-Key	Link	$3.20	1	$3.20	Grove series Cable Assembly
Term Block Plug 2POS STR 2.5mm(connector for solar panel cable) *	Section 6.2	Phoenix Contact	Digi-Key	Link	$0.96	1	$0.96	2 Position Terminal Block Plug, Female Sockets 0.098" (2.50mm) - 180° Free Hanging (In-Li
Grove to sensor adapter boards for CTD (Grove to 3.5mm stereo jack) 5 pack *	Section 6.2	EnviroDIY	EnviroDIY	Link	$35.00	1	$35.00	to connect CTD sensor to board via grove socket to headphone jack connector

Stroud Center Updates

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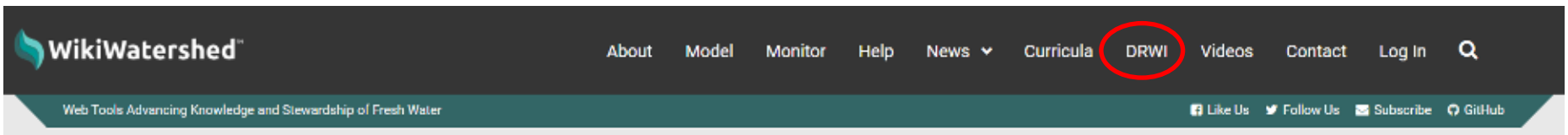 - https://wikiwatershed.org/drwi/

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; shicks@stroudcenter.org; 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

Stroud Center Updates

- Reminder on standard first step in troubleshooting station if it has gone offline:
  - Check battery power is >3.5v
    - If yes proceed to next step
    - If no, swap in new battery
  - Turn station off
  - Swap SD cards (if station is offline)
  - Turn station on
  - See if problem resolves
  - Send SD card file and description of key issue(s) to the Stroud Center and continue troubleshooting process

Stroud Center Updates

- New model (generation 2) of the Hydros 21 CTD sensor by Meter Group is now available

HYDROS 21
Conductivity, Temperature,
Depth Sensor

* Need to change SDI-12 address ("channel") from 0 to 1

Stroud Center Updates

- **Technology Updates**
  - Bluetooth Sensor Interface, https://www.metergroup.com/en/meter-environment/products/zsc-bluetooth

ZSC
Bluetooth Sensor Interface

Qty	Item	Tax	Rate	Amount
1	40416 ZSC Bluetooth Sensor Interface for use with ZENTRA Utility Mobile stereo connector ZSC Bluetooth Sensor Interface, stereo		$79.00	$79.00

Subtotal	$79.00
Shipping & Handling	$14.00
Tax Total (0%)	$0.00
Total (USD)	**$93.00**

Stroud Center Updates

- Bluetooth Sensor Interface, https://www.metergroup.com/en/meter-environment/products/zsc-bluetooth
  - Useful functions:
    - **Viewing CTD sensor data**
    - **Changing CTD SDI-12 address ("channel")**
    - **Other useful info**
      - **Status window that can warn of freeze damage**

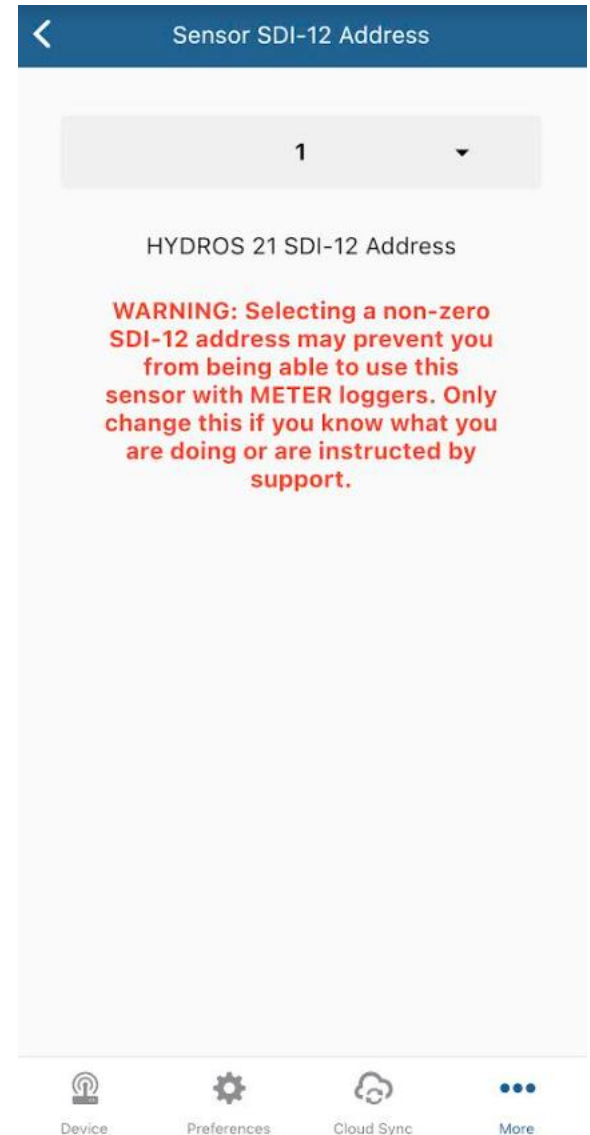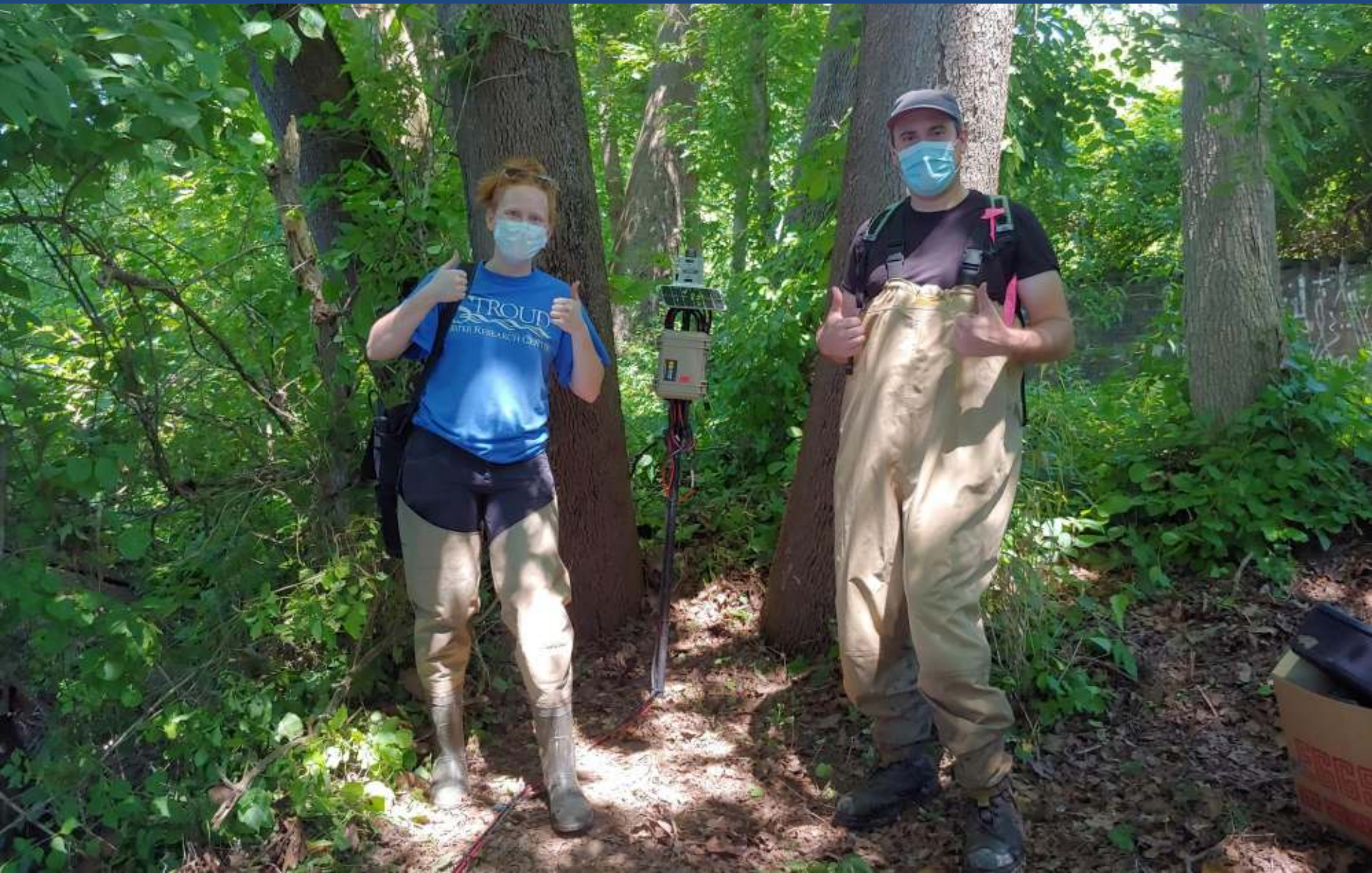# Stroud Center Updates

- Viewing sensor data

Stroud Center Updates

- Changing sensor SDI-12 address ("channel") - change from 0 to 1 for Hydros21 CTD
  - Click More -> sensor tools -> Sensor SDI-12 Address ->

Any questions before we move on?

Presentation

- Continuous monitoring in the Tunkhannock Creek watershed in anticipation for possible warehouse development

Geoff Rogalsky, President, Tobyhanna Creek/Tunkhannock Creek Watershed Association

Alex Jackson, Executive Director, Brodhead Watershed Association

Mentors currently available

- Carol Armstrong (MWS), mnem.np@gmail.com, 610-659-7477

- George Seeds (MWS), geoseeds@verizon.net, 484-886-9586

- Rachel Johnson (Stroud Center), rjohnson@stroudcenter.org, 973-557-8995

- Christa Reeves (Stroud Center)(in the north, situational), 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 August 18, 2021
2:30-3:30p**

Onward!

Stroud Water Research Center, EnviroDIY-DRWI contacts:

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

Master Watershed Stewards, EnviroDIY-DRWI contacts:

- Carol Armstrong, mnem.np@gmail.com, 610-659-7477
- George Seeds, geoseeds@verizon.net, 484-886-9586