

STEAM into Wetlands: Empowering Educators through Outdoor Learning

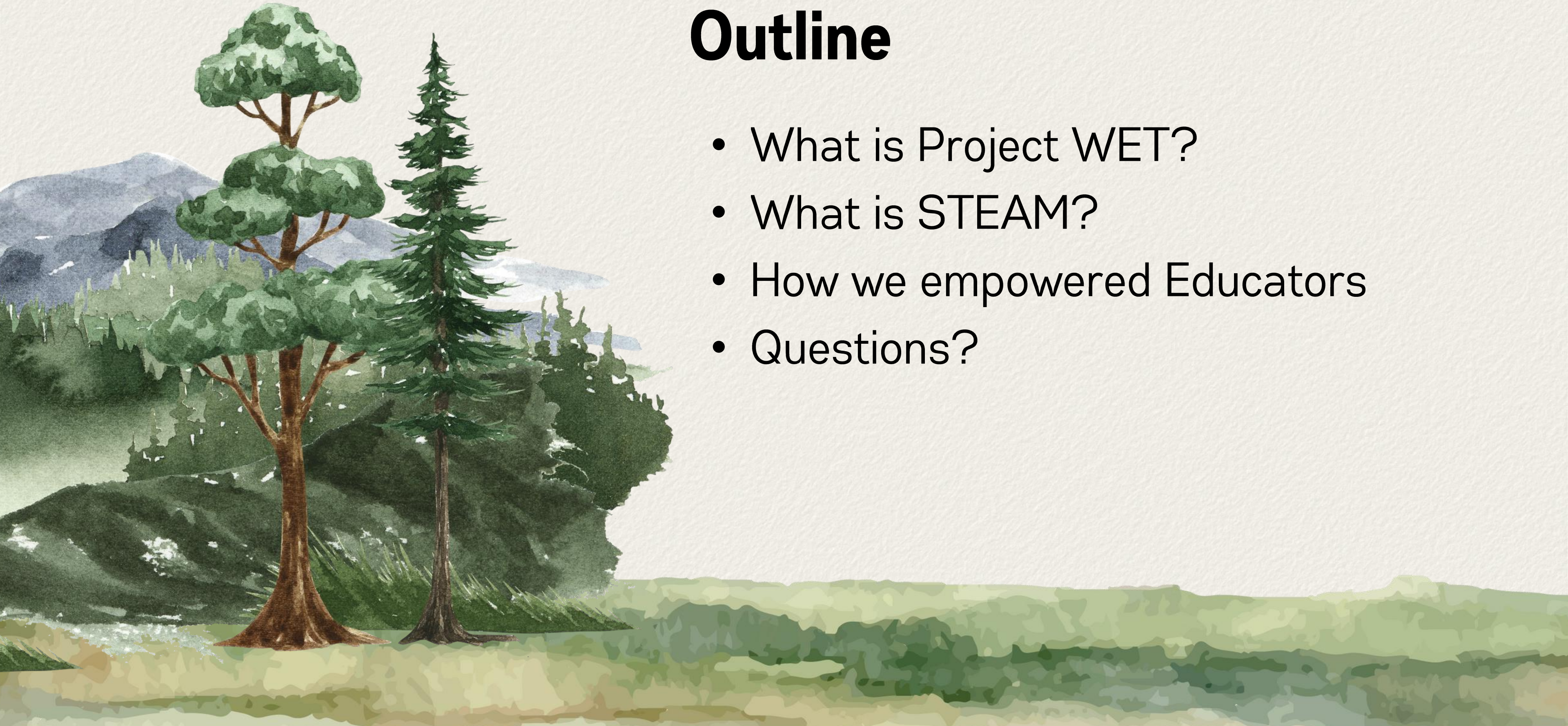
Tomi Bergstrom, WVDEP - Project WET Coordinator



WEST VIRGINIA
project **WET**
WATER EDUCATION TODAY

Outline

- What is Project WET?
- What is STEAM?
- How we empowered Educators
- Questions?



Project WET (Water Education Today)

- Project WET is an international, interdisciplinary water science and education program for educators.
- Nonprofit is based in Bozeman, Montana with coordinators in every state and across the world.
- **OUR MISSION:** Project WET empowers educators to engage youth to understand water and solve local and global challenges.
- **OUR VISION:** Inspiring communities around the world to value and protect water.
- In West Virginia, Project WET workshops are FREE and conducted throughout the state. (*This varies state by state according to the program sponsor*).



Project WET achieves our Mission through...

Our Resources

We offer affordable resources and trainings to educators all around the world. Our quality, trustworthy lessons are also fun and interactive.

Our Network

We operate with a network of about 90 partner organizations to help us reach all types of educators. Our new and innovative ideas help fulfill our mission.

Our Community Support

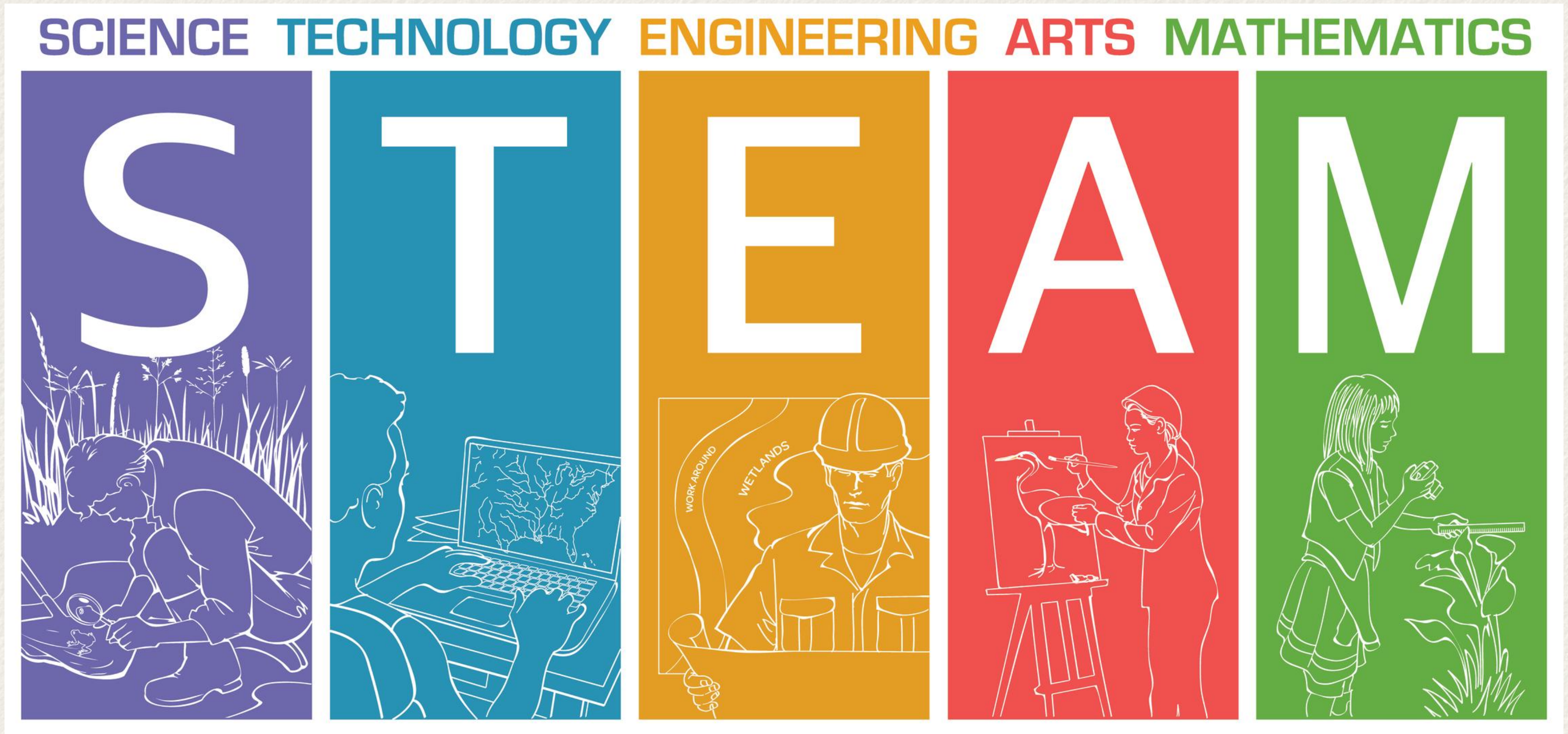
We offer a variety of customizable community and employee engagement opportunities.

Our Global Reach

Project WET has global reach with local impact. We are invested in the future of our communities and our planet.



What is STEAM?



An educational approach that integrates these subjects, moving beyond traditional, siloed teaching to foster creativity, critical thinking, and innovative problem-solving.

How we Empowered Educators

- ✓ Asked them, "What support or resources do you need?"
- ✓ Created & Organized Wetland Resources
- ✓ Partnered with our Wetland Scientists at WVDEP to get funding through the Wetland Program Development Grant.
- ✓ Trained Teachers with our Wetland Resources & purchased them kits for their own field trips!



Wetland Program Development Grant

Created Videos & Fact Sheets to Highlight 12 WV Wetlands that are Accessible to School Groups!



Created & Organized Wetland Resources

Learn More About Wetlands

About Wetlands

Wetlands come in a variety of sizes and types and can be found all over the state of West Virginia. View these resources to learn more about wetlands and why they are important.

- Vernal Pool Monitoring Program**
The Vernal Pool Monitoring Program aims to increase awareness of vernal pools and to map and monitor vernal pools in West Virginia.
- Wetlands of West Virginia**
Fact sheet on wetland importance and conservation.
- US EPA Wetlands Protection and Restoration**
General information about wetlands.
- Natural Resource Conservation Service: Wetland Fact Sheet**
Information for farmers.
- U.S. Fish and Wildlife Service: West Virginia's Wetlands**
This illustrated booklet summarizes the status of West Virginia's wetlands in the 1990s.
- WV Save Our Streams: Introduction to Wetlands**
Presentation slides introducing the reader to wetlands.
- West Virginia Wetland Rapid Assessment Method (WVWRAM)**
Watershed Assessment Branch of WVDEP's standardized method for rapidly assessing the important natural functions of all types of wetlands present in West Virginia.
- Wetland Program Plan**
West Virginia's 5-year plan for protecting, restoring, monitoring, and regulating wetlands.
- Wonderful Wetlands with WVDEP**
Explore Wonderful Wetlands with WVDEP through a Virtual Field Trip Series hosted by Appalachian Headwaters
- WV DEP Wetland Videos**
This collection includes short videos and more in-depth webinars about West Virginia's wetlands.

How Wetlands Affect Water Quality

These videos explain the importance of wetlands and describe the roles wetlands play in providing clean water.

How Wetlands Manage Water



How Wetlands Work



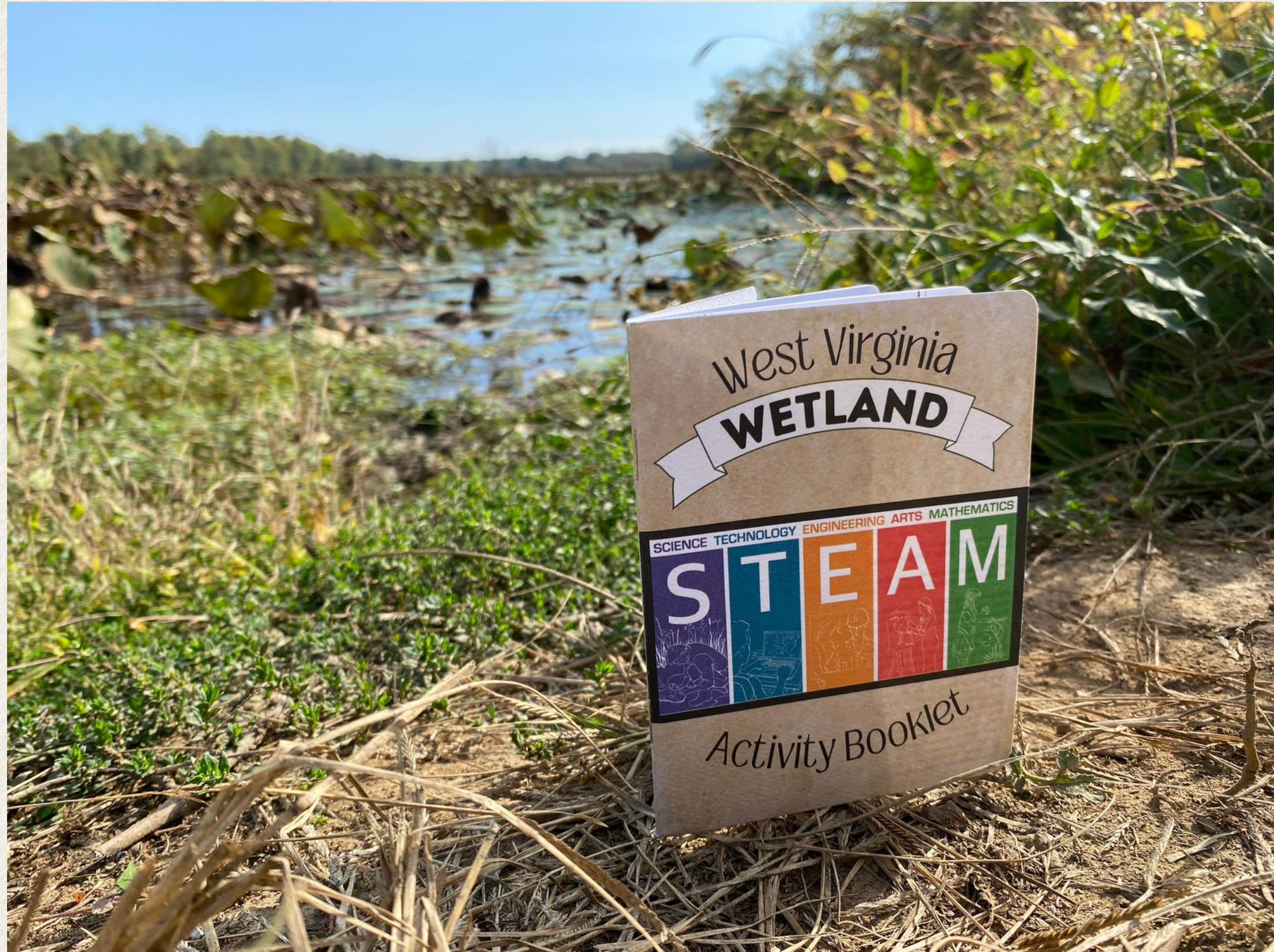
Flooding and Sediment Reduction



Wetland Program Development Grant

Created the WV Wetland STEAM Booklet *Suitable for (K-12)/Public*

- Free to download!
- Canva design has been shared with other Project WET Coordinators to make their own for their state!
- Printed through grant to distribute at water festivals, STEAM camps, and other events I host through Project WET.



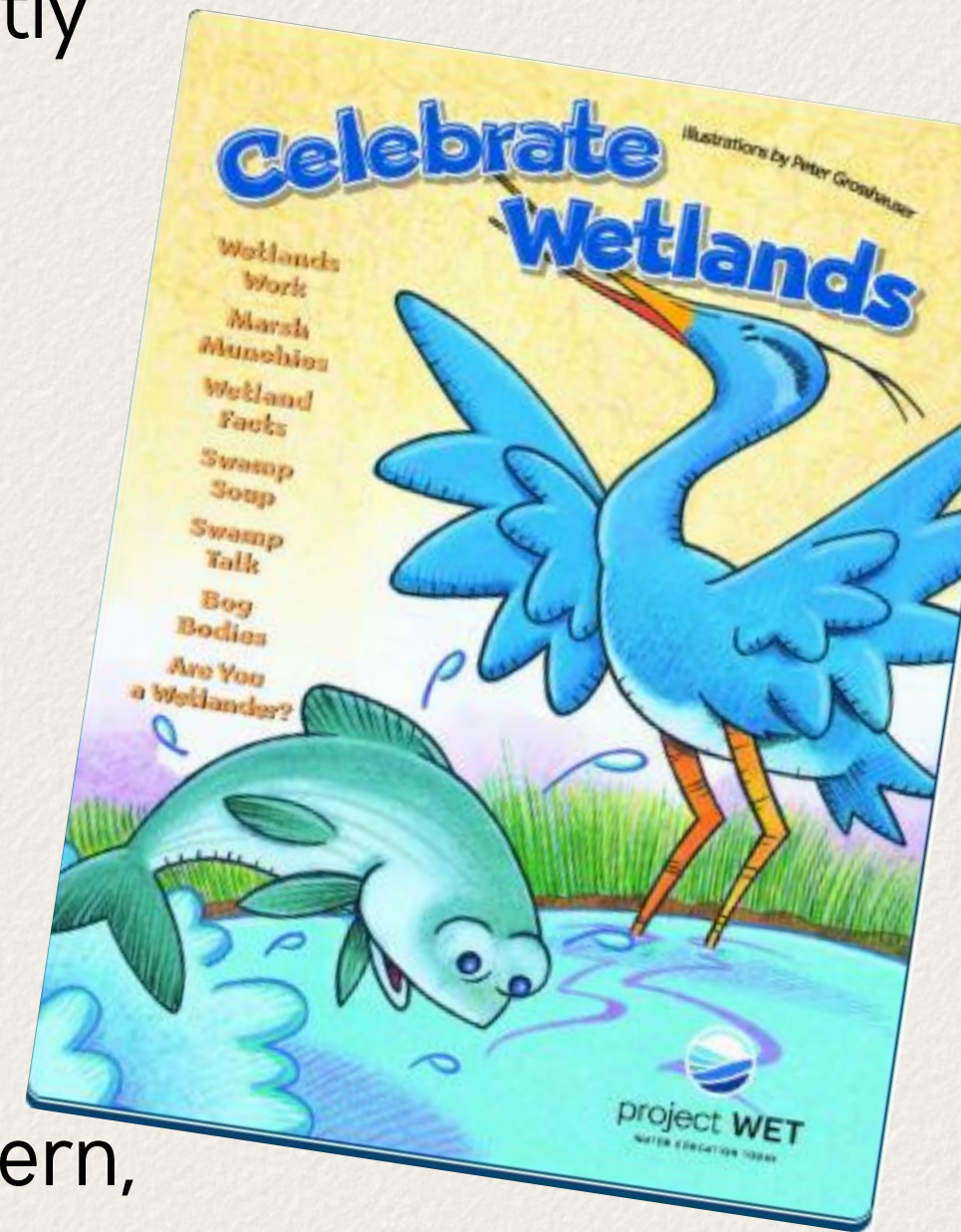
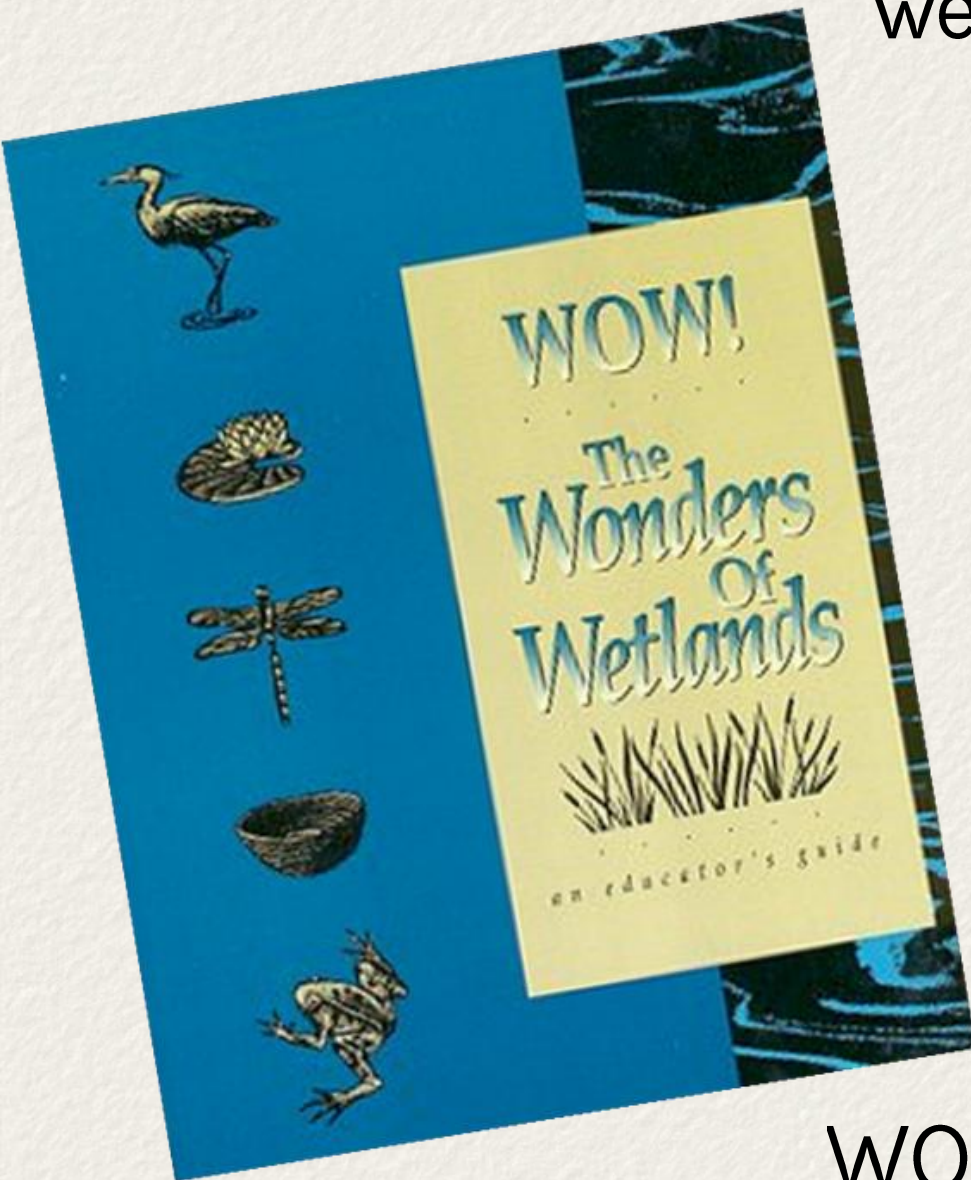
Trained Teachers with our PWET Wetland Resources

K-12 guide with 70 pages of background material followed by 40+ cross-referenced activities to gently introduce wetlands to students and teachers. Activities are neatly organized into six sections:

1. Wetlands & People
2. Defining Wetlands
3. Wetland Functions
4. Wetlands as Home
5. How People Manage Wetlands
6. Action for Wetlands

WOW was co-created in 1995 by Environmental Concern, Inc. (in Maryland) and The Watercourse (in Bozeman, MT).

The last update of the guide was 2008. Long-term goal to update this guide.



With teachers, I take a pulse....

- How do you feel about wetlands?
- Do you think wetlands are important? Why?
- Create a Pro/Con list on a board.



Sample WOW! The Wonders of Wetlands Activity

Wetland Metaphors

(Page 12 of STEAM Booklet)



Summary:

Consider a selection of common objects as physical metaphors for natural wetland functions.

Grade Level:

1-12

Subject Areas:

Environmental and Earth Science

Duration:

30 Minutes

Skills:

Analyzing and Interpreting



Each Educator Received a Wetland Resources Supply Kit!



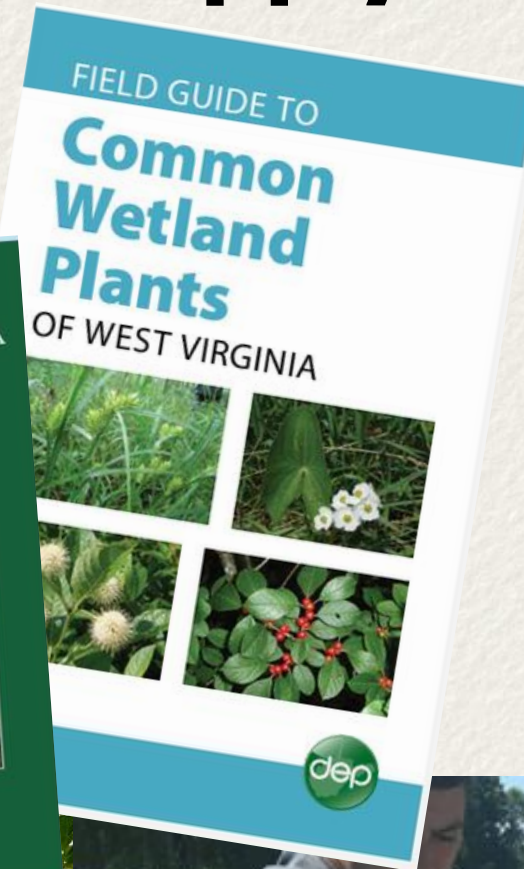
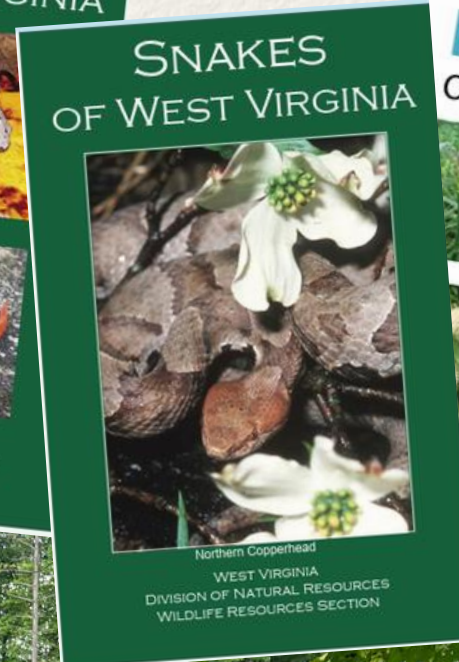
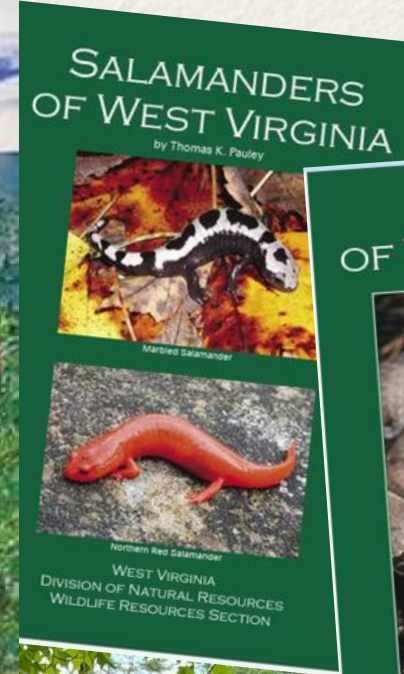
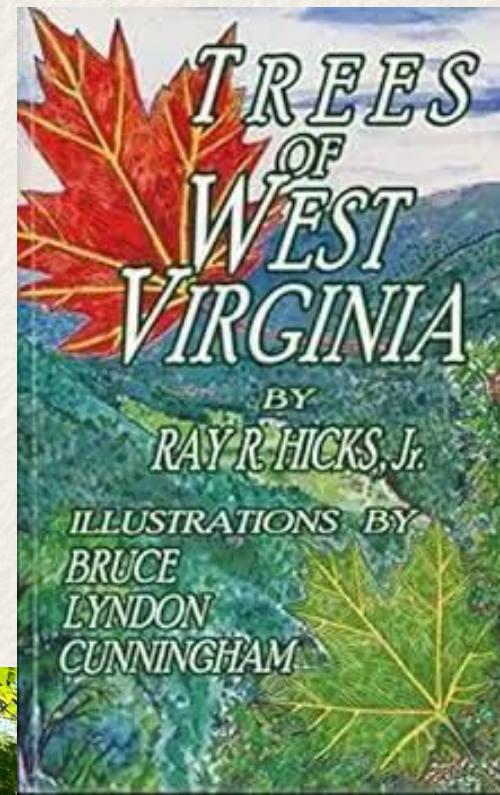
WETLAND RESOURCES SUPPLY KIT



- | | |
|--|---|
| <input type="checkbox"/> 1 Mesh Bag (write your name on white patch) | <input type="checkbox"/> 1 Field Guide to Common Wetland Plants of WV |
| <input type="checkbox"/> 1 Lab Tray | <input type="checkbox"/> 2 Laminated SOS Macroinvertebrate Guides |
| <input type="checkbox"/> 1 pH Water Test Kit | <input type="checkbox"/> 1 Project WET Discover Wetlands Booklet |
| <input type="checkbox"/> 1 Aquatic Net | <input type="checkbox"/> 2 WVDNR Herpetology Guides |
| <input type="checkbox"/> 1 Box of 10 Scaples | <input type="checkbox"/> 25 Wetland STEAM Booklets |
| <input type="checkbox"/> 1 Trees of WV | <input type="checkbox"/> 1 Modeling Clay |
| <input type="checkbox"/> 2 Forceps | <input type="checkbox"/> Wetland Envirofact Sheet |
| <input type="checkbox"/> 3 Folding Loupe Magnifiers | <input type="checkbox"/> Partner Brochures |



A SPECIAL THANKS FOR OUR DONATIONS FROM WVDEP, WVDNR, WVDOF, AND FOR FUNDING FROM THE EPA WETLANDS DEVELOPMENT GRANT.



How we Empowered Educators

- Paid them a **stipend** to attend the workshop.
- Introduced them to a wetland in their community, **TOOK THEM OUTSIDE** and looked at soils, plants, and wildlife.
- Trained them in three resource guides to help them meet **curriculum standards**.
- Gave them a **wetland supply kit** for them to use with students, as well as booklets, and a follow-up offer to **support** a field trip to a wetland site.
- Shared videos and fact sheets, as well as **Wetland STEAM Booklets** for their classrooms.



Connecting Teachers & Wetlands

- Trained over 100 formal educators with this wetland program.
- Taken teachers out to six different wetland sites.
- Highlighted local partners and made new and stronger connections in our wetland network.
- Introduced teachers to our sister programs, Project Learning Tree and Project WILD. **These programs are in your state!**



Connecting you to Project WET

WHERE WE ARE

FILTER BY ☐ LOCAL PARTNERS ☐ SPECIAL PROJECTS ☐ WATER SANITATION & HYGIENE (WASH)

ARKANSAS ENVIRONMENTAL EDUCATION ASSOCIATION

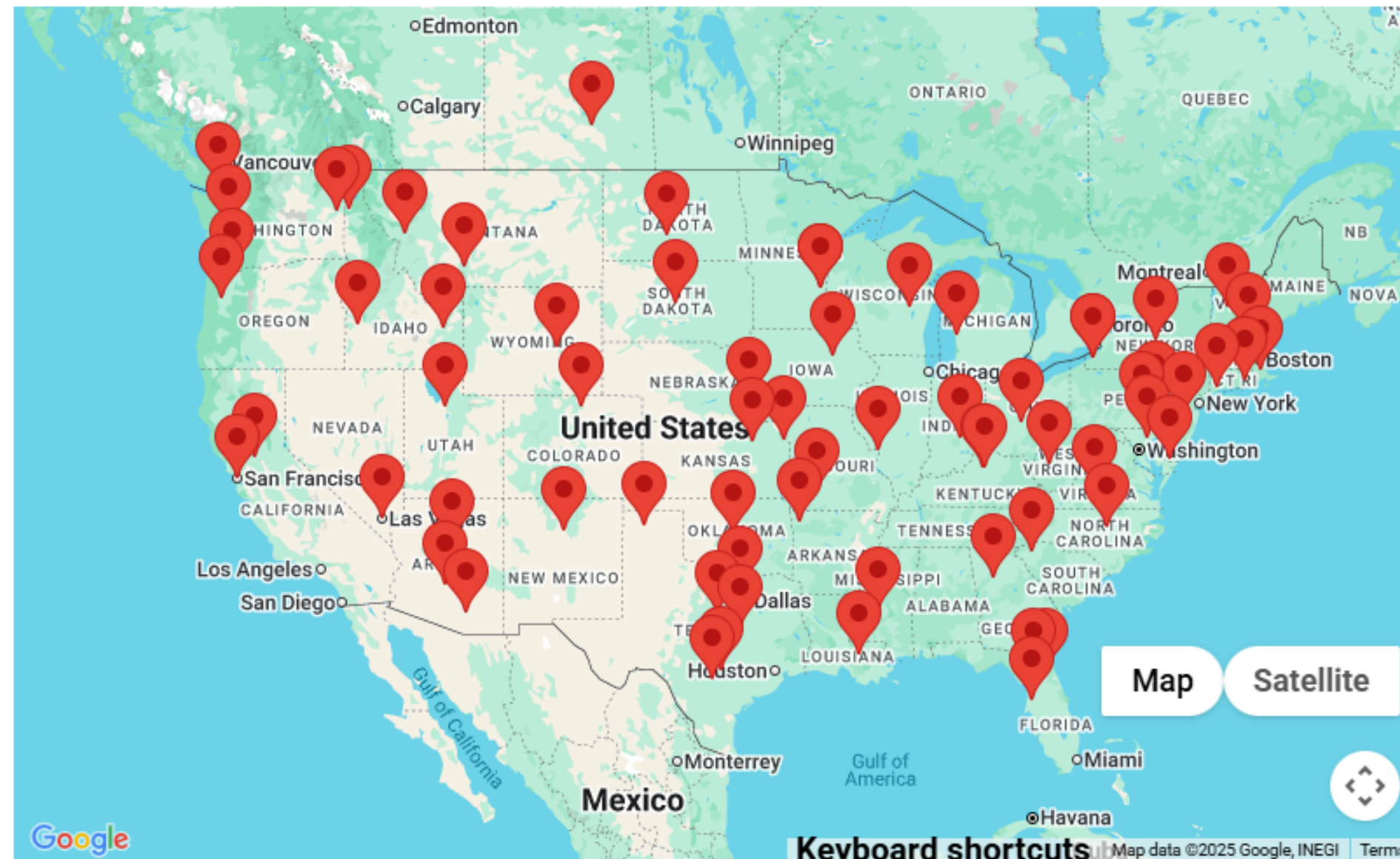
Greenland, AR
Local Partners

ASSOCIATION FOR THE FRIENDS OF THE PATAGONIA

Buenos Aires, Buenos Aires
Local Partners

BAYLOR UNIVERSITY - CENTER FOR RESERVOIR & AQUATIC SYSTEMS RESEARCH (C.R.A.S.R.)

Waco, TX
Local Partners

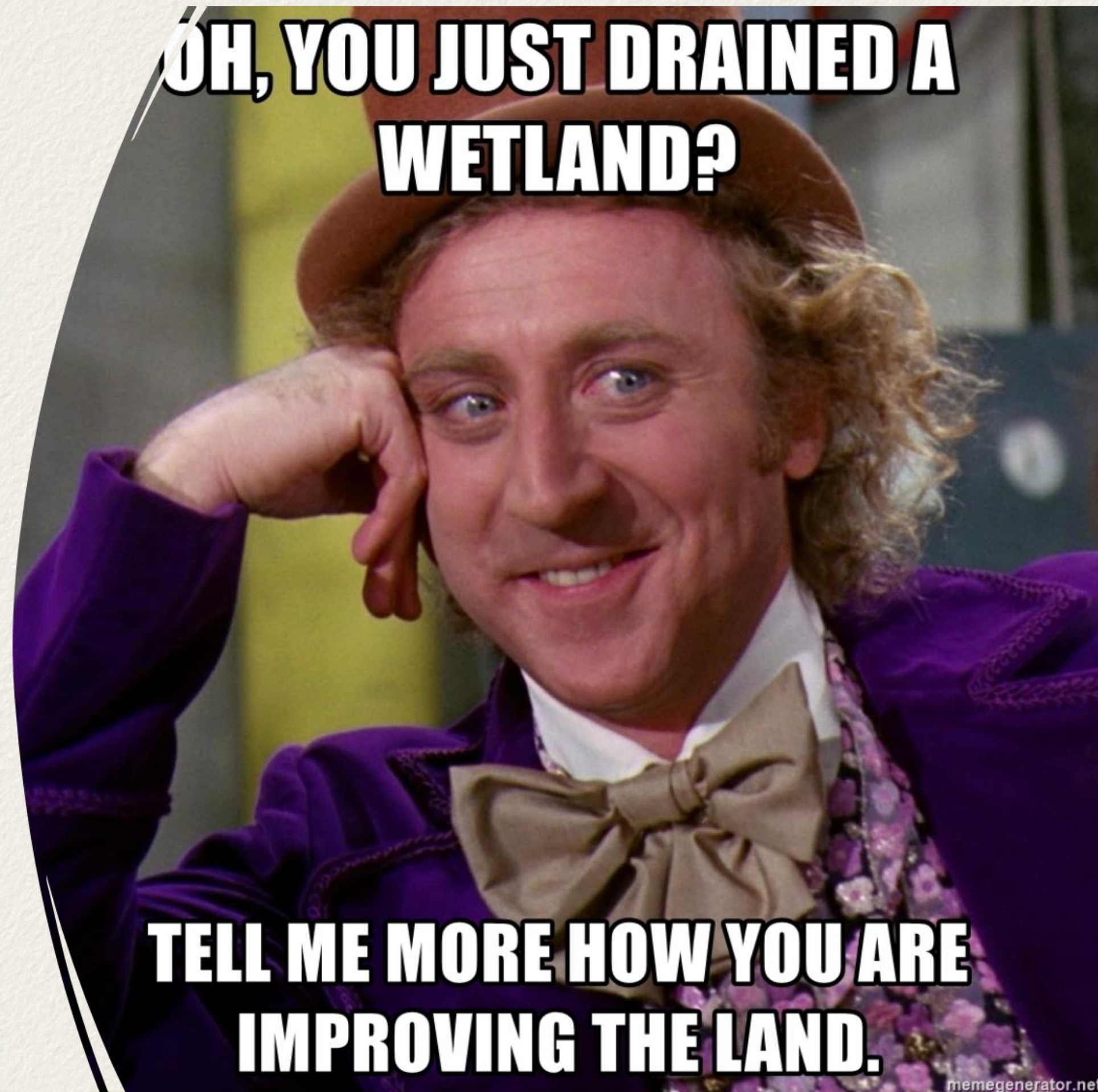


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Find a training near you.

Don't see a partner near you? **Contact us** about becoming a partner.

Thank y'all
for the work
you do!



Any questions?

Tomi Bergstrom (She/Her)

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WILD & WONDERFUL WETLANDS STEP OUT & EXPLORE BIODIVERSITY



with project **WET**
WATER EDUCATION TODAY

west virginia **dep** department of environmental protection
Watershed Improvement Branch