

# The Relationship between Student Service Learning and Technical Assistance in Mine Water Reclamation

By Kelsea Palmer, Josh S. Vinglish, Melissa A. Reckner and Dr. William H.J. Strosnider



# Overview

- What is the Center for Watershed Research and Service?
- The structure of the Center
- Funding
- Projects: Weirs and more!
- Outcomes



# Home base... Saint Francis University in Loretto, Pennsylvania



Founded 2008





# The Center for Watershed Research and Service

- Established in 2012
- Mission: Serve the needs of the local and international watershed restoration efforts as a resource of technical, labor and volunteer needs.





# Our Partners

- Saint Francis University
- Clearfield Creek Watershed Association
- Shade Creek Watershed Association
- Kiski-Conemaugh Stream Team
- Stream Restoration Inc.
- BioMost Inc.
- Stoneycreek-Conemaugh River Improvement Project
- PA Foundation for Watersheds
- Somerset, Blair and Cambria County Conservation Districts



# Our Structure



Volunteer



In-Class  
Projects &  
Research



Fee for  
Service

Student Learning Experience

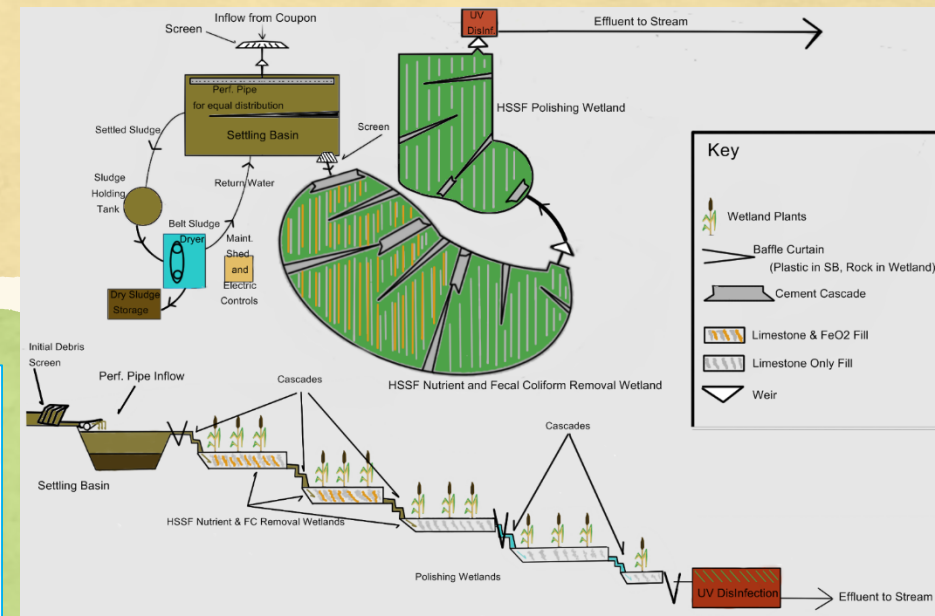


# Volunteer Projects





# In Class Projects





# Research Projects





# More cool research...

- Post Doctorate
  - Research
    - Class project
      - Project of watershed interest





# Fee for Service



- Pollutant loading studies
- Preliminary designs/redesigns
- Data collection & reporting



# Flexibility of the program



- SEED – Teaching teachers
- Support other Science outreach projects as they come up
- Support partner needs relatively last minute.
  - In class vs. CWRS board member availability



# Funding



COMMUNITY FOUNDATION  
FOR THE ALLEGHENIES

SERVING BEDFORD, CAMBRIA, SOMERSET, AND INDIANA COUNTIES



Grant  
effort...  
SUCCESS!



GROWING  
GREENER









# Weirs!



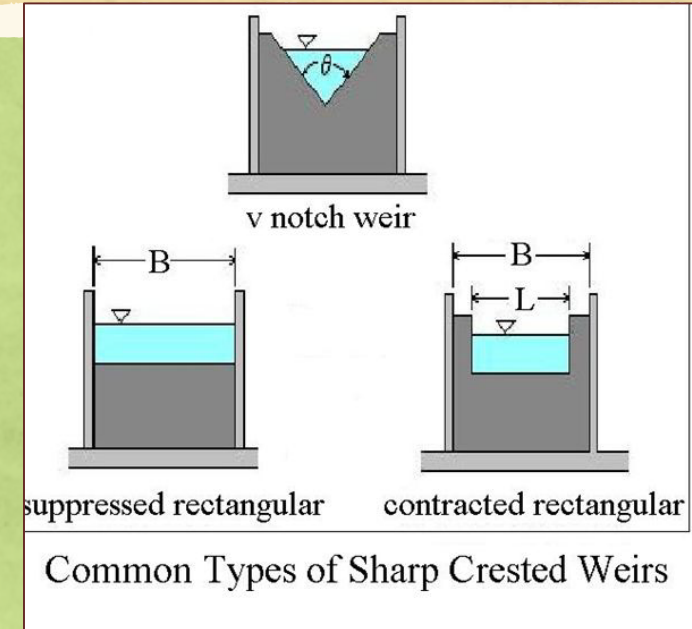


# Where the watershed outreach began

- What's a weir?
- 20+ weirs
- How we decide when to put in a weir...
  - Fluid Mechanics Lab
  - Research
  - By Request
  - Fee for Service

$$Q = 3.33 (L - 0.2H)H^{\frac{3}{2}}$$

$$Q = 2.49 H^{2.48}$$



Bright Hub Engineering



# Outcomes: Student Experience



- Encourages Enrollment
- Networking & conference @ undergraduate level
- Brings multiple disciplines together
- Encourages volunteer work & strong work ethic!





Students Here in Spokane!





# Outcomes: Watershed Support

- Promote knowledge of mine drainage issues to local and international public
- Encourage and support volunteer work
- Provide creative and otherwise time consuming efforts to evaluate watershed issues





# The take away

## *Academia*

- Give your students excellent opportunities
- An effective driver to grant writing

## *Organizations and Companies*

- Co-writing grants
- Student efforts are free or cheap
- Support the up-in coming versions of yourself



A WEIRD question for you...





Questions for me?

