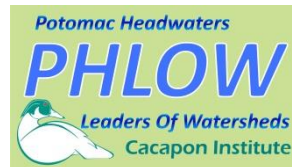


# Potomac Headwaters Leaders of Watersheds Spring 2019 Application



*Educating future generations of environmental stewards through classroom education and on the ground conservation practices at schools.*



## About PHLOW

Potomac Headwaters Leaders of Watersheds (PHLOW) has continued to grow since being established in 2008. Over the years PHLOW has had many funders, but since 2011, it has been largely funded by the USDA Forest Service, the National Fish and Wildlife Foundation (NFWF), and the Chesapeake Bay Program funding through the WV Department of Environmental Protection (WVDEP). PHLOW has spread from its WV base and now includes schools in Western Maryland and the Shenandoah Valley.

Through PHLOW, Cacapon Institute (CI) teaches students that hands-on conservation in their local watersheds can provide significant environment benefits for the greater Chesapeake Bay Watershed. PHLOW has three sub-programs: *Grow-a-Garden*, *Growing Native*, and *Plant-a-Tree*. Each program follows the distinct PHLOW model- educate students on environmental issues then inspire them to participate in hands-on conservation at their school.

Each program has a main focus and a conservation project that proposes a remediation. *Grow-a-Garden* lessons focus on stormwater runoff; students then install a rain garden to capture runoff from their school. *Growing Native* is an in-depth study of trees and the importance of native trees to the Potomac Basin. Students grow trees in a grow-out station at their school. *Plant-a-Tree* has one classroom lesson that focuses on the overall structure of trees and the role they play in the environment. Students then participate in planting established trees throughout their school landscape.

All of these programs empower future generations of watershed stewards by being environmentally literate. PHLOW has engaged over six thousand students and adults through all of its school programs.

### What is a Watershed?

An area of land where all the water drains into a local stream.

**Application due by Friday, February 1<sup>st</sup>**

## Grow-a-Garden

*Grow-a-Garden* focuses on stormwater runoff pollution, the harmful materials from hard surfaces such as rooftops and parking lots that rainwater carries to streams. Unmanaged stormwater runoff pollution carries oil, agricultural waste, and nutrients and sediment to streams which degrades drinking water quality and harms wildlife.

*Grow-a-Garden* helps students discover the connections between land use practices and the health of rivers while simultaneously linking learning standards. Students discover that human impacts on land and water affect the organisms that live in streams through classroom exploration of four instructor-led classes.

### What is a Rain Garden?

Rain gardens are a shallow depression or low laying area that collects stormwater runoff, allowing it to be cleaned and infiltrate back into the ground.

### Lesson Topics:

- Watersheds: What are they? Do I live in one?
- Nutrient and Sediment Pollution: How does this pollution harm rivers?
- Benthic Macroinvertebrates: What are they? What do they tell us about the health of our rivers?
- Rain Gardens and Native Plants: What are they and how do they reduce pollution?

### Program Includes:

- Four fifty-minute classroom education sessions led by CI's Watershed Education Specialist
- Assistance with selecting rain garden location on school property
- Rain garden design and planting plan
- All plants and mulch (unless donated)
- Professional preparation of rain garden prior to planting
- Rain barrel or cistern installation, where applicable and site dependent

At the conclusion of the education sessions, students understand the role their rain garden will play in their local watershed and ultimately the Chesapeake Bay. The rain gardens not only capture stormwater runoff pollution, they provide an outdoor classroom for the school to use in science, art, and math lessons.



**PHLOW Goals:**

- Educate future stewards on the importance of reducing pollution on land and in streams
- Assist with design and installation of rain gardens, grow-out stations, and tree plantings at schools
- Increase awareness within the community on the function of conservation practices
- Demonstrate that students can make a difference at their school and within their communities
- Foster the importance of clean rivers for future generations
- Promote long-term care of conservation projects within the school system and community

**Project Partners:**

- National Fish and Wildlife Foundation
- U.S. Forest Service
- Chesapeake Bay Program / West Virginia Department of Environmental Protection
- Cacapon Institute

**Requests welcome from:**

- Public or private schools within the Potomac River Watershed, including those located in the Eastern Panhandle of West Virginia, the Shenandoah Valley of Virginia, or Western Maryland

**Application Requirements:**

- Program takes place within a school system and on school property
- School located within the Potomac River Watershed
- Commitment to coordination of class lessons instructed by Cacapon Institute
  - Education sessions beginning February 4<sup>th</sup>
  - Concluding on or before April 26<sup>th</sup>
- Assistance in the planning and execution of the conservation practice installation
  - Conservation practice installations occurring between April 19<sup>th</sup> thru the end of the school year
- Keep an ongoing record of volunteer contribution for submission of final project report at the conclusion of the project
- Ongoing maintenance of rain garden

**Application Components to be submitted by Friday, February 1<sup>st</sup>:**

- Cover Sheet
- School History
- Description of Need
- Objectives and Goals
- Evaluation
- Volunteer Contribution
- Site Check List
- Maintenance Agreement

**Application Deadlines:**

- Application submitted by COB: February 1<sup>st</sup>
- Notification of Program Approval: February 4<sup>th</sup>
- Education Programs Begin: February 4<sup>th</sup>
- Conservation Practice Installations: April 19<sup>th</sup> thru the end of the school year
- Final Program Report Due: June 28<sup>th</sup>

**To Apply:**

- Email Application: Watershed Education Specialist, Cacapon Institute  
[phlow@cacaponinstitute.org](mailto:phlow@cacaponinstitute.org)



use planting and site pictures for future publications. (Check Box)

**1. School History.** Be sure to address the following:

- School's mission, goals and objectives
- Current or past environmental education programs
- School structure (grade levels, staff, student's groups)
- Has your school installed a conservation project before? Explain.

**2. Description of Need.** Please be sure to address the following:

- What do the teachers plan to gain from an external educator leading classroom sessions?
- What do teachers hope their students will gain from the four educational sessions?
- How will a rain garden be an asset to the school in regards to reducing stormwater runoff pollution, flooding or mud issues, and future educational uses?

### **3. Objectives and Goals for this Request**

What are the short-term and long-term objectives, goals, and benefits of this program?  
How will the program foster community involvement and outdoor learning opportunities?

### **4. Evaluation**

How will you measure the success of the project? Describe how you will care for the rain garden and monitor its growth?



## Site Checklist

### Sunlight Exposure

Other:

### Moisture Level

Other:

### Topography

Other:

### Soil Texture

Other:

### Soil Compaction

Other:

### Other Soil Features

### Potential Conflicts

Overhead Wires

Structures

Pavement

Heavy Pedestrian Traffic

Wetland Present

Mowing Conflict

Storm Drain

Underground Utilities

Other:

### External Downspouts

Describe:

### Choose a Native Plant Bundle (See page 10 for details)

Shrubs (optional):

Explain any potential height restrictions and the main use for the rain garden area.

Examples include outdoor classroom, butterfly habitat, solution to water troubles, etc.



## Maintenance Agreement Form

In consideration of Cacapon Institute’s PHLOW Programs providing technical support, native plants, and materials, we agree to:

1. Grant Cacapon Institute volunteers, agents, contractors permission to inspect and/or provide maintenance on conservation practices installed at:

Project Address	City	State	Zip
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2. Provide proper maintenance for rain garden planted through the program for five (5) years by:

- a. Checking soil moisture weekly during the months of May-September and providing 5-10 gallons of water each week, as needed, depending on soil conditions and precipitation.
- b. Maintain a three inch layer of brown hardwood mulch in the rain garden.
- c. Remove any plant species that were not initially planted in the garden; example: Johnson grass, before it can establish in the garden.
- d. Remove any trash that might be carried into the rain garden by stormwater runoff
- e. Avoid the use of fertilizers, herbicides, and other chemicals without performing soil tests of consulting a “Licensed Pesticide Applicator”. Results of such tests are to be reported to Cacapon Institute before application.
- f. Will not mow over any rain gardens planted through the program. We agree to maintain the rain garden shape and height during all pruning events.

3. Maintain rain barrel/cistern by: (if installed)

- a. Removing any leaf matter that may accumulate in the fall
- b. Draining and leaving the valve open during the winter month with temperatures below freezing

4. Hold Cacapon Institute and its volunteers, agents, contractors harmless from any liability arising from the planting or care of any trees planted under this agreement.

***Failure to fulfill these maintenance requirements will make your group ineligible to apply for programs in the future.***

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Email: \_\_\_\_\_ Phone: \_\_\_\_\_

### Native Plant Bundle Options\*

Native Plant Bundle	Height Range	Species	Shrubs (optional)
Petite	1-5 feet	Cinnamon Fern, Tussock Sedge, Eastern Columbine, Butterfly Milkweed, Purple Coneflower, Wild Blue Indigo, Golden Knees, Mist Flower, Common Boneset, Cardinal Flower, Great Blue Lobelia, Monkey Flower, Black-eyed Susan, Blue Vervain, Blue Flag	N/A
Butterfly	3-6.5 feet	Eastern Columbine, Swamp Milkweed, Butterfly Milkweed, Purple Coneflower, Wild Blue Indigo, White Turtlehead, Mist Flower, Common Boneset, Cardinal Flower, Great Blue Lobelia, Bee Balm, Black-eyed Susan, Blue Vervain	Black Chokeberry (6 feet) Button Bush (12 feet)
Wild & Wonderful	1-10 feet	New York Fern, Tussock Sedge, Purple Coneflower, Swamp Milkweed, White Turtlehead, Golden Knees, Joe-Pye Weed, Common Boneset, Cardinal Flower, Great Blue Lobelia, Bee Balm, Black-eyed Susan, Blue-eyed Grass, New York Ironweed	Black Chokeberry (6 feet) Silky Dogwood (12 feet) Button Bush (12 feet)

\*dependent on nursery stock availability and subject to substitution or change