Friends of White's Woods
Monthly Newsletter
December

November's Stormwater Webinar Predicts Flooding Problems After Tree Removal

Trees perform Herculean tasks in reducing stormwater runoff, not only by their roots soaking up the rainwater as it hits the ground, but also by intercepting the rain in its canopy before it reaches the ground.

Vincent Cotrone of Penn State's Extension Service in his Nov. 19th webinar reported that urban and suburban areas are increasing tree plantings as a "green" way of reducing flooding at a much lower cost than constructing concrete open channels and retention ponds.

Trees mitigate flooding through their canopy, through increased infiltration into the soils, through evapotranspiration *(process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants)*, through pollutant removal, through soil stablization and as streamside buffers.

The average interception of rainfall by tree canopy cover ranges from 12% to 40% depending on rainfall event. Mature deciduous trees can intercept 500 to 2,000 gallons of water per year while mature evergreens can intercept 4,000 gallons per year.

Cotrone noted that forest floors act as enormous sponges, typically absorbing up to 18 inches of precipitation before gradually releasing it into narrow channels and subsurface flows.

Stream health is also improved by woody vegetation by providing sediment filtering, removing nitrogen and phosphorous, stabilizing stream banks, modifying shade and temperatures, providing aquatic habitat and leafy food, and reducing stream velocity and downstream flooding.

So, removing trees and/or tree canopy increases stormwater runoff and flooding and reduces water quality in area streams and creeks.

UPCOMING WEBINARS

Jan. 14: "Community Forests: Benefits for Birds and People -- Options and Challenges" by Dr. Margaret Brittingham, Penn State professor of wildlife resources and extension wildlife specialist

Feb. 11: "Comfortable Spaces for Uncomfortable Conversations: The Climate and Rural Systems Partnership of Western Pennsylvania" by Indiana native Dr. Bonnie McGill, an ecosysem ecologist and science communicator with Carnegie Museum of Natural History

March (TBA): Family Forest Carbon Capture Program by Kevin Yoder of The Nature Conservancy

The webinars, offered via Zoom from 4 to 5 p.m., are free and open to the public. To register for a webinar, send an email to info@friendsofwhiteswoods.org.

Reminders

• You can order t-shirts (sizes S to XXL) for $15 each and masks for $10 each by sending a check made payable to FWW, Inc., to FWW, Inc., P.O. Box 1271, Indiana, Pa. 15701. Be sure to include size of t-shirt.

Mugs at $10 are available for sale at Commonplace Coffee, 1176 Grant Street (7 a.m. to 4 p.m., M-F and 8 a.m. to 4 p.m., S/S).

• Donations to help cover legal, research, outreach and other essential activities are still needed. Please send checks made payable to FWW to P.O. Box 1271, Indiana, PA 15701. FWW is a 501c(3) nonprofit organization so all donations are tax deductible.

January Webinar: For the Birds

"Community Forests: Benefits for Birds and People - Options and Challenges"

Community forests provide a place for adults and youth to get outside and connect with nature. The importance of this for both mental and physical health is becoming more evident as our society becomes more urbanized as well as more isolated. Community forests also provide important breeding and wintering habitat for birds as well as stopover sites for migrating neotropical forest specialists like warblers, vireos, tanagers and orioles. Habitat quality can be affected by many processes including whether and how the forest is managed. This webinar will explore the types of birds that can be expected in White's Woods and management options to enhance mature forest habitat for birds and people.

Legal Update

A pre-trial conference was held Nov. 25 regarding FWW's pending litigation against the White Township Board of Supervisors.

Dates were established for an end to discovery (Jan. 22, 2021) and for dispositive motions (Feb. 19, 2021).

Although President Judge William J. Martin is scheduled to retire at the end of this year, it is believed that he will remain on FWW's case until its conclusion.

What is an Invasive Species?

Invasive species are animals or plants from another region of the world that don't belong in their new environment. They can harm both the natural resources in an ecosystem as well as threaten human use of these resources. Invasive species are capable of causing extinctions of native plants and animals, reducing biodiversity, competing with native organisms for limited resources, and altering habitats.

Invasive plants can reduce the amount of tree cover by preventing trees from becoming established, causing them to fall down prematurely, or reducing their growth rate. A Harvard University study showed that garlic mustard reduces soil fungi and inhibits the establishment of tree seedlings.

Here are some of the invasive species of plants currently growing in White's Woods:

Garlic Mustard (Alliaria petiolata)
Japanese Barberry (Berberis thunbergii)
Japanese Stiltgrass (Microstegium vimineum)
Oriental Bittersweet (Celastrus orbiculatus)
Autumn Olive (Elaeagnus umbel/ate)
Multiflora Rose (Rosa multiflora)

Garlic mustard, a non-native invasive species, can wreak havoc with native desirable plants. The leaf is easily identifiable (left) while the second-year biennial plant has white flowers and can reach 46 inches in height.

Garlic Mustard (Alliaria petiolata): The Fungi Assassin

Garlic mustard, native to Europe, is a biennial herb, with basal leaves that are dark green and kidney- shaped. Stem leaves are alternate, toothed and triangular. In the spring and early summer, leaves and stems produce a distinctive garlic odor when crushed. Flowers consist of four white petals that narrow abruptly at the base. Each seed pod contains thousands of seeds, black and oblong, contained within siliques, which are narrow, four-sided, linear capsules from 1 in. to 4 ½ in. long. Plants can range in height from 5 in. to 46 in. tall.

Seeds germinate in early April through May and produce only leaves during the first year. Garlic mustard remains green throughout the year. In the second year, plants bolt and bloom from May through early July, and produce fruit in July through August. The plants die after producing seed.

Early settlers brought garlic mustard to North America. Garlic mustard poses a severe threat to natural areas because of its ability to quickly dominate the herbaceous layer to the exclusion of native plants.

Garlic mustard prefers moist, shaded areas. An aggressive invader, garlic mustard tends to spread quickly along roads, trails and streams, and then moves into adjacent forest. Garlic mustard also grows densely, crowding out native plants. Many of those native forest plants extend the reach of their root networks by growing symbiotically with soil fungi. Garlic mustard has no such fungal partners and uses "chemical warfare" to poison the fungal associates of competing plants. This gives garlic mustard an advantage over those plants.

Garlic mustard may threaten some butterfly species. Adults of several native butterfly species lay eggs on garlic mustard, but many or all of the larvae die before completing development.This is of particular concern with the rare West Virginia White Butterfly, which lays eggs on garlic mustard in the absence of the related native host plant, Dentaria [Cardamine] diphylla.

How to remove garlic mustard:

- Control is easiest when garlic mustard plants are in bloom (usually beginning in April) before the plants produce seed.
- Pull at the base of the plant and try to remove the entire root.
- Pulled garlic mustard material will still complete flowering and set seed – do not leave it on the ground! Be sure to bag and dispose of pulled plants as garbage.
- **Mowing garlic mustard is not an effective control because plants will still bolt (send up flowers)and seed.**
- Revisit pulled sites as often as possible to re-pull plants that sprout from left behind root fragments. This is especially important later in the spring as seeds develop.