CLIMATE CORNER

May 2021

By Catherine Folio for Brodhead Watershed Association

Climate change makes PA a target for harm

Editor's note: This is part of a 2021 series of articles on the impacts of climate change on our water resources and municipal government's role in working toward a solution.

Here's what we already know from climate studies: Due to the increasing heat, **wet places are getting warmer and wetter.** Is the Pocono area a "wet place"? Yes. The evidence is in the very large trees we have and the constantly active waterfalls. Yes, because we have powerful watersheds in the Delaware and the Lehigh funneling all this water to the Atlantic. Yes, because we have widespread large tributaries in these watersheds: the Brodhead, the McMichael, the Paradise, Cherry Creek, Pohocopo Creek and the Aquashicola. The Pocono area is a very wet place, and getting wetter.

Heat triggers evaporation from the land, plants, lakes, rivers and oceans. Average temperatures in Pennsylvania have increased by 1.8 degrees Fahrenheit in the last 100 years, and are projected by the PA Climate Action Plan to **increase another 5.4 degrees F by 2050.** That will make Philadelphia feel like Richmond, Va., in less than 30 years.

Whatever goes up must come down. Many areas in Pennsylvania have already seen a 20% increase in precipitation since 2001. That is expected to increase by another 8% by 2050. Data from the Northeast Regional Climate Center shows that, in the last 50 years, the frequency of heavy rain events in the northeastern U.S. has increased by 75%, causing more localized pockets of flood damage. PennDOT alone spent $211.6 million from 2011 to 2018 on flood and landslide infrastructure damage. Flooding disables roads, bridges, water treatment plants, wastewater plants, municipal/residential/corporate/educational buildings. Landslides take out the power grid. Flooding moves toxic chemicals into public and private drinking water supplies. Mold, mildew, and disease-carrying insects are all encouraged by increased precipitation. Faster floods threaten our aquatic ecosystems by stirring up sediment pollution and smothering native aquatic plants, amphibians and fish. Flooding destroys our crop harvests, sends valuable topsoil downstream, and takes out economic contributors like agritainment, tourism, and recreational opportunities.

Watershed management by local, county, state and national agencies is critical to minimize these effects. Current infrastructure was built to withstand **previous weather patterns**. All of our infrastructure is now in harm's way in the new normal of climate change. As the state and national agencies wrestle with the big picture of carbon pollution, we do have the power at the local and county levels to protect ourselves from various effects of the changes which are already upon us.

Trees are our most important defense against increased heat, rain and snow. They do it all: replace carbon in the air with oxygen; stabilize the landscape against erosion; slurp up and hold water to mitigate flooding; provide shade and cooling of both land and waters. **TreeVitalize** is a public-private partnership established by the **state Department of Conservation and Natural Resources** to plan for, plant, and care for trees for shade and water absorption. Grants are available to assist local communities in establishing programs which plant, maintain and sustainably manage public shade trees. **PPL and the Howard Nursery** provide seedlings to nonprofit organizations. *Push your organizations and towns to plant trees!*

The Pennsylvania Growing Greener Law of 1999 was established to protect open space, increase farmland preservation projects, clean up abandoned mines, restore watersheds, provide funds for trails and parks in flood-prone areas, help communities address land-use changes, and upgrade water and sewer systems. Got a septic tank? Clean it out every 3-5 years to minimize the release of nitrates into your soil and local waterway. *Push the Growing Greener movement at your municipal meetings.*

PA Grows finances projects such as no-till farming to prevent the release of carbon from farmland soils. The DCNR provides grants to local conservation districts for the installation of multi-functional riparian buffers along streams on both corporate and farm lands. *Urge your district and town to apply for these monies.*

The Pennsylvania Association of State Floodplain Managers (PAFPM) is a statewide organization of floodplain managers, engineers, planners, local, state and federal officials, and water resource professionals. PAFPM's mission is to integrate floodplain management among individuals, groups and municipalities, and to act as a liaison in the exchange of ideas and information. The association recently held its March symposium, covering an array of topics including nature-based approaches to flood mitigation, and public/private partnerships for flood control operations. **The Pennsylvania Silver Jackets** team presented on several interagency projects which assisted local communities across the Commonwealth on flooding issues.

Stay tuned to this space for more on the role of municipal Climate Action Plans in climate change mitigation!

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