TANOMA

Welcome to our
Tanoma AMD Wetlands Educational Site
and Outdoor Classroom
(On Rayne Church Road,
just off Tanoma Road, located
between Clymer and Indiana)

We invite you to come out any time and take a walk on our self guided wetlands path. Learn how a passive treatment system can work to clean our streams.

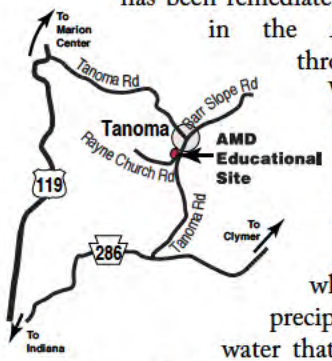
Contact us for guided tours and/or structured activities at a time that works for you.

Who will be the next stewards of our precious resources if we don't foster a passion for the environment in this generation.

There is a lot to do at Tanoma!

This ten-acre AMD (Abandoned Mine Drainage) site is owned and operated by the Evergreen Conservancy, whose mission is to Advance the Preservation, Protection and Stewardship of Natural, Cultural and Historical Resources in and around Indiana County.

The Tanoma Passive Mine Drainage Treatment Project was initiated in 1995 by the Crooked Creek Watershed Association. This innovative project relocated mine discharge by drilling vertical boreholes into the mine pool. Stroll down our 1100' educational trail to learn how abandoned mine drainage has been remediated here and at other sites in the Appalachian Coalfields through this passive system. Water, flowing by artesian pressure, from the subsurface deep mines enters the first sediment pond and travels through nine other ponds where heavy metals are precipitated. After treatment, water that has been acclimated to the local ecosystem and cleaned of iron is discharged into Crooked Creek. The Tanoma Discharge was the first major pollution input to the Crooked Creek watershed, impacting Crooked Creek and then the Allegheny River.



Iron is the Culprit at the Tanoma Discharge. Iron is a trace element necessary for most forms of life. Along with coal it is a vital component of this region's industrial heritage. As a pollutant in water systems it's devastating. Iron hydroxide is a habitat killer. It covers the stream bottom decreasing the amount of stream insect habitat. It negatively impacts fish spawning areas and smothers insect and fish eggs. Without somewhere clean to spawn and with a reduction of its food web, fish have a hard time surviving. AMD is contaminated when water comes in contact with reactive minerals that have been exposed through mining activities. The mineral responsible for the vast majority of contamination is pyrite, often called fool's gold. Pyrite reacts when it comes in contact with water and oxygen. A series of chemical reactions occur to form contaminated water. Sulfuric acid (H_2SO_4), a product of this reaction, is a strong acid capable of having devastating environmental consequences for plants and animals. Yellow boy ($Fe(OH)_3$), also known as iron hydroxide, can form an orange or yellow sludge, coating the bottoms of streams. This is the orange material that can easily be seen in the Tanoma Wetlands. If this weren't enough, the acidity generated by this reaction can further dissolve other minerals (such as clays), which can have high aluminum content, as well as other metals. The contaminated water may thus carry a variety of pollutants. In some mine pools, like the pool where the Tanoma discharge originates, the mineral limestone may also be present in the geologic strata. As contaminated water comes in contact with limestone, a beneficial reaction sometimes occurs. The limestone, also known as calcium carbonate ($CaCO_3$), acts to counteract, or neutralize, the acidity generated by the pyrite reaction. The AMD may actually become alkaline. While it may still carry a variety of other contaminants, such as iron hydroxide in the Tanoma Discharge's case, the impacts are not as far reaching as if the acidity were present.

The mine discharge in Tanoma produces about 126 lb. of iron each day; that's 23 tons a year. Most of that now settles in this first basin.

www.evergreenconservancy.org
info@evergreenconservancy.org

Evergreen Conservancy

Educational Activities We Offer:

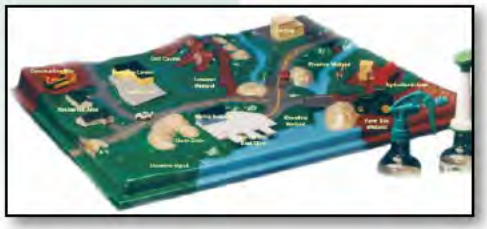
Water Testing

Stream Critter Catches

Outdoor Classroom Activities To Order

Passive System Tours

A Variety of Activities to Learn About Water



Enjoy the Handicap Accessible Walking Trail over 1000' Long

Fun Activities for Scouts & School Groups

Would you like to Tie-dye a Tee-Shirt with Iron Oxide from our ponds?

Make Iron Oxide Chalk and use it in Your Class.

Make Book Marks or Stamp Pictures with Iron Oxide Ink.

Experience Geocaching
Learn about AMD Treatment while Searching for "The Last Bridge" geocache.

Learn About Plants and Trees

Pick up a plant and tree ID brochure at our pavilion for the wetlands path or ask for a guided tour of the plants at this wetland.

Learn About Alternative Energy Systems

Observe up close how renewable energy can power an aerating fountain and electricity for our pavilion. See a wind turbine, a water turbine and solar panels at work.

Make use of this environmental resource any time of the year. If you come out on your own - let us know - send us a picture of your group at Tanoma. Tell us what you learned!

If you would like to schedule a program please contact us.
info@evergreenconservancy.org