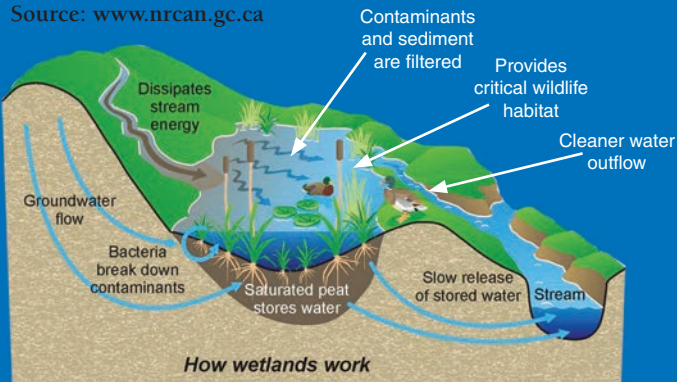


Source: www.nrcan.gc.ca



Wetlands

more than land that is wet...

Wetlands help to control flooding. Soils along with plants in swamps and marshes absorb heavy rains and release water slowly over time. The water in a wetland can choose to sink into the ground and become part of groundwater. The water can also leave as surface water. This is water we see with our eyes above ground in the form of streams, creeks, lakes, rivers, or oceans.

Wetlands help to filter out pollutants. The soils and plants in a wetland can soak up some types of pollutants in water run-off such as road salts, pesticides, fertilizers, and automobile oil leaks. This does not mean that wetlands can serve as dump sites. Too much of a bad thing has bad consequences.

Wetlands are a habitat for many endangered species and others. The soggy soils, variety of plants, and unique spaces provide important habitat needs (food, water, and shelter) to a lot of different types of animals. From dragonflies, to bog turtles, to beaver and muskrats; wetlands can be a nursery for populations of creatures.

A Bog Turtle

Wetlands help migrating birds on their journey. Have you ever stopped at a hotel while on vacation? Hotels provide us with food, water, and shelter while we're always from home. A wetland does the same for migrating birds. Their flights last longer than a day and rest stops at a bog, swamp, marsh, fen, or prairie pothole give birds a chance to recuperate before traveling on. Although there are many ducks and birds that stop at Lancaster County wetlands, Tundra Swans and Snow Geese are two birds that stand out with large populations stopping by in the fall and the spring.

A Tundra Swan

Soak up some good reads about wetlands:

- [Everglades](#) by Jean Craighead George
- [Salamander Rain: A Lake & Pond Journal](#) by Kristin Joy Pratt-Serafini
- [Mallard Duck at Meadow View Pond](#) by Wendy Pfeffer
- [Turtle in July](#) by Marilyn Singer
- [Near One Cattail: Turtles, Logs, and Leaping Frogs](#) by Anthony Fredericks

Today we will all help wetlands by sharing with others why they are an important ecosystem. Please go outside and get your feet wet and muddy. Be the "UNLESS" that Dr. Seuss talked about in his tale of the Lorax.

Lancaster County Conservation District
717-299-5361 • www.lancasterconservation.org

Financial and other support for this project provided by a Small Community Grant from the **ALCOA foundation**

Settlers and Mills changed our Wetlands and Waterways

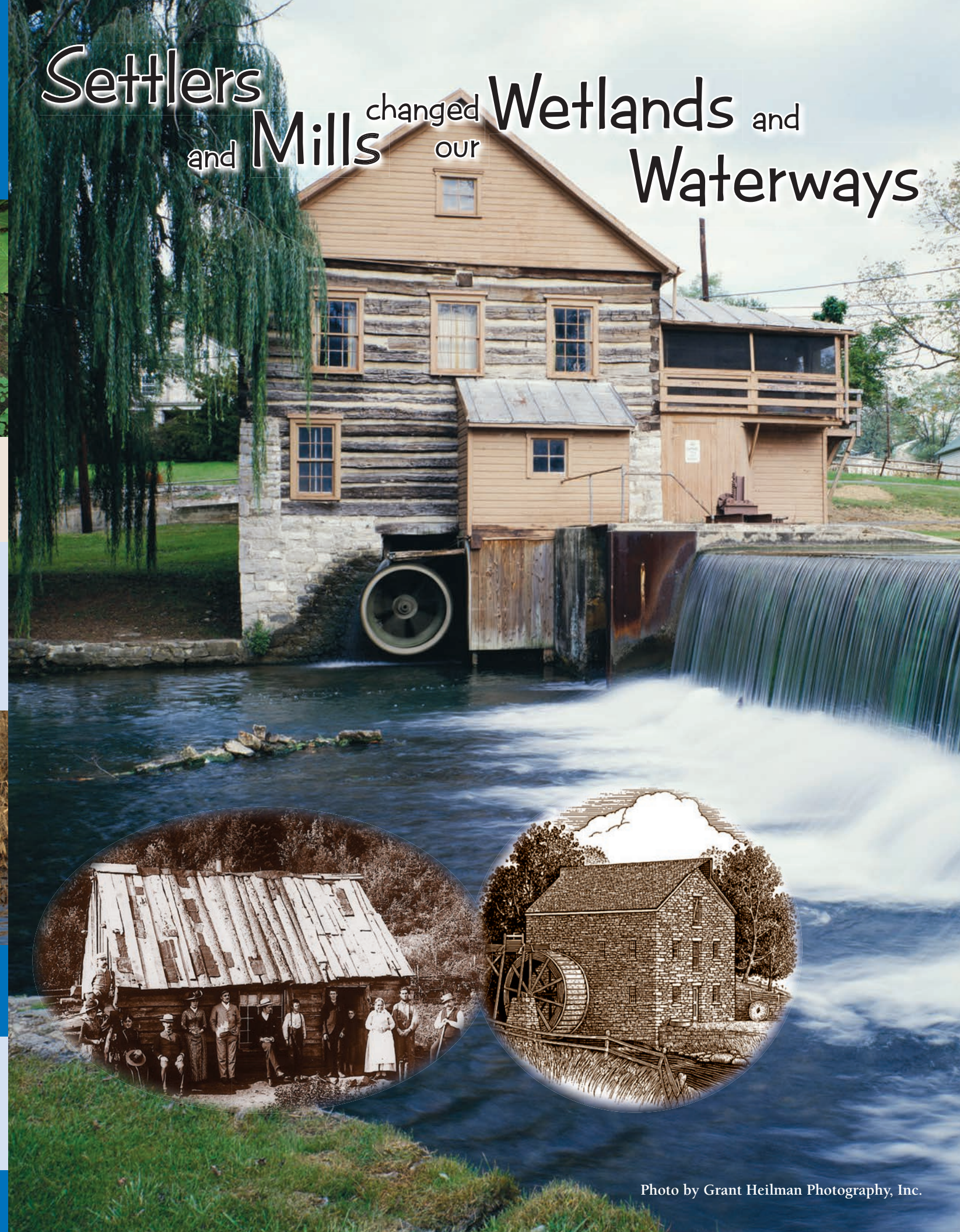


Photo by Grant Heilman Photography, Inc.

As Lancaster County became settled in the 1700's, large tracts of land that included **wetlands** were dried and transformed into agricultural land to grow crops such as grain. Grain then needed to be transported and processed. It became more economical to have the grain processed closer to where it was grown rather than transporting it long distances. **Grist mills** began popping up throughout Lancaster County for this purpose. The heavy mill stone used to grind the grain couldn't move without power.



Types of grain = wheat, barley

A mill stone

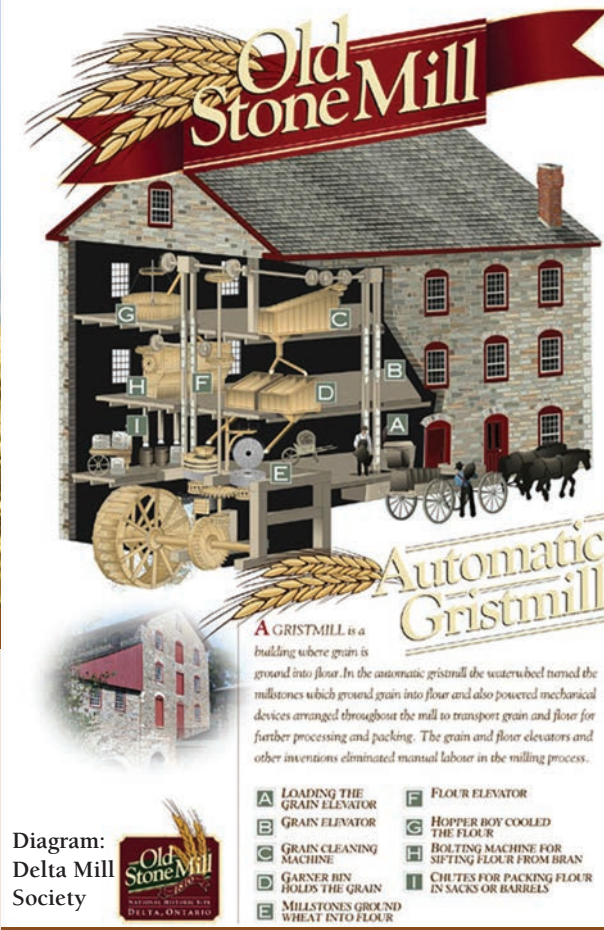


Diagram: Delta Mill Society

Mills were built with two to three floors, so that power could be transported up and down to different floors through gears. Mill ponds located up stream above the mill allowed gravity to add more force in the water as it pushed against the water wheel.

Iron furnaces were also built near streams. In some cases streams were diverted from their natural paths to reach the water wheel near the furnace. The water wheel at a furnace operated large **bellows** that blew air into the furnace fire making it hotter so that the iron ore would melt.



Photo by Delta Mill Society

Photo by Ken W. Watson

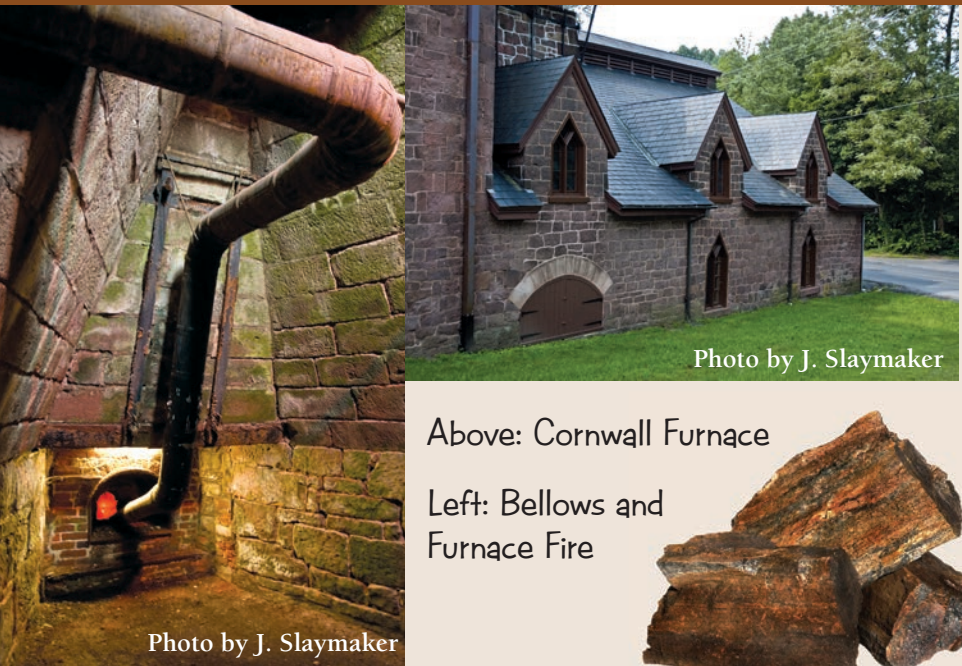


Photo by J. Slaymaker

Above: Cornwall Furnace

Left: Bellows and Furnace Fire

Photo by J. Slaymaker

At the same time Lancaster County sat near the largest area of iron ore rock in the country. Iron ore was found in the area of Cornwall, PA. Iron masters who owned Iron Furnaces needed iron ore rock, limestone rock, and charcoal made from trees to create iron products which settlers purchased including iron frying pans, stoves, door hinges, and horseshoes. The iron couldn't be formed without heat to burn the charcoal and melt the ore. Power was needed to create the heat.



Iron Ore



Wetlands...

Cattail, A Wetland Plant

Both of these processes used power or energy that was created by water. Water is a renewable natural resource on the planet Earth. We, as humans have worked for hundreds of years to harness water to generate power for products we can consume. Each time we use this **natural resource**, we impact the resource sometimes for the better and sometimes for the worse.

Mill ponds were created when water in a stream was blocked and retained to power a water wheel. Water was typically stored up stream from the mill or furnace. It was tricky to transport the power of water wheels over long distance so the mill was often built near the stream.

A Water Wheel



could be created by mill ponds backing up water, slowing the flow of a stream to broaden out over a wider area. During the 1700's and 1800's, streams could also be channeled away from their natural flow direction removing natural wetlands that once surrounded the stream.

Today changes in stream channels or stream beds from two hundred years ago still exist. As mills and iron furnaces closed, dams that held water or diverted water were not maintained. Mill buildings and stone furnaces were not maintained either in most cases. As the buildings have crumbled and practically disappeared, streams follow the path created for them so long ago.

Lancaster County wetlands appear around streams and ponds. They may also be found in forested areas. Wetlands form between dry land and water where land collects water on the surface and the ground.

Vernal Pool: Type of wetland found in forests following spring and fall rains.



Photo by S. Gregory