

THE GREEN PAGES

In 900 words, here's how the watershed buoys your business



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From your morning cup of coffee to a high-volume manufacturing process, almost everything requires water. Because of water, entire economic communities were born along riverbanks and shorelines, ours being the Lehigh and Schuylkill.

THE GREEN SCENE

While the battle over water rages in frier parts of the country, Pennsylvanians — with our 83,000 miles of streams, almost 4,000 lakes, and 80 trillion gallons of groundwater — typically don't worry about water outside of usage rights, withdrawal permits or other provisions of the Clean Water Act.

Meanwhile, human life simply cannot exist without it.

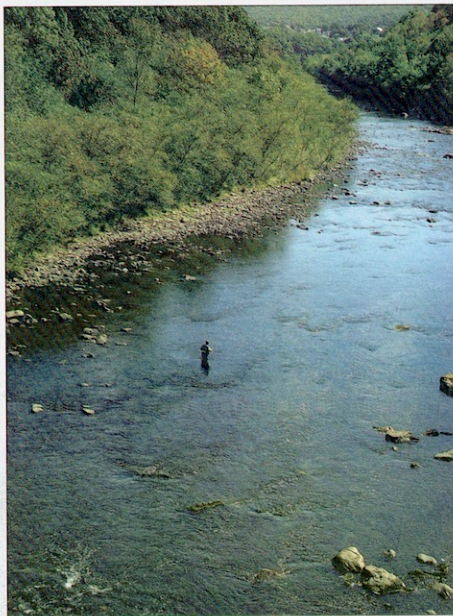
Water makes up 60 percent of our bodies. Plus, ours is the only planet we know of with a continuous, liquid supply, and even though the earth seems to be flooded with water, 97 percent is undrinkable saltwater. So if water is so precious, how do we break down the walls that block our water consciousness? The first step is to understand how the earth captures and distributes water. We need to know what a watershed is.

This compound word does not translate to a little building that stores liquid (as logic would imply). It's an ecological system — a collection of parts in a geographic location — that equates to a hydrologic master plan. The parts include fallen rain, underground aquifers, bubbling springs, as well as puddles, bogs, marshes, ponds, lakes, creeks, streams, rivers and estuaries.

Land plays a role as the system drains to the ocean, so it too is included in the watershed definition. The highest ridges that surround one drainage network are what define a particular watershed's geographic boundaries. No matter where you are, you are in a watershed.

You may be reading this in the Lehigh River Watershed. Starting in Gouldsboro, the Lehigh River travels 103 miles before ending in Easton.

The catch basin surrounding it covers 1,360 square miles. If you are in the 1,900-square-mile Schuylkill River Watershed, your story starts in Tuscarora Springs and travels 128 miles before end-



A fly fisherman enjoys a sunny afternoon in the Lehigh River near Jim Thorpe.

Photo by Ruth Heil

ing in Philadelphia. Since both drain to the Delaware River, they are considered sub-watersheds of the 12,755-square-mile Delaware River Watershed.

In addition to water provision, a healthy watershed performs functions — called environmental services — that would be very expensive to replicate. It filters the water, mitigates flooding, houses wildlife, cleans the air and sequesters carbon.

A 2011 economic-impact study determined that, in Southeastern Pennsylvania, these services provide at least \$132 million in annual cost savings and estimated economic benefits.

Degrade watershed health, and you reduce this value; improve the watershed, and you increase it.

For instance, if the land was covered in concrete or the rivers penned inside man-made impoundments, the earth would be unable to do its job. On concrete or other

nonporous material, water rushes forth, building pressure as it is funneled into pipes and drains, causing flooding and erosion. It picks up pollutants and toxins that cling to the same hard surfaces. Over organic cover and within natural waterways, however, the water is captured and retained for a while. Some evaporates to become rain another day, some slowly drains into the stream, lake or aquifer. Thanks to this, it need not be raining constantly for us to have constant water. Sadly, bricks-and-mortar barricades us from the natural process.

In a typical commercial building, the water comes in through pipes and goes out through pipes.

A municipal authority provides incoming water; a wastewater treatment plant handles the outgoing water. We don't get to see the authority draw the drinking water — called source water — from a stream intake or well. Still, it comes

from the earth. We aren't present when the wastewater plant cleans the water to government standards before releasing it into the stream. Still, it goes back into the earth. Your wastewater eventually becomes someone else's drinking water, and the cycle continues.

Eventually the riverwater flows to the ocean where it mixes with salt, rendering it useless for human consumption.

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Before it does, however, it passes through an estuary. Estuaries are some of the most exquisite places on earth. The murky mix of freshwater and saltwater creates a food supply mecca filled with fish and plant life to which birds and other mammals flock for food and protection.

Our Delaware Estuary supports the world's largest breeding population of horseshoe crabs, and it is one of the four most important shorebird migration sites in the world.

Industry uses the estuary, too, because ocean barges and other supply-carrying vessels can calmly dock in its waters. The Delaware port system generates \$19 billion in annual revenue and is the world's largest freshwater port. In fact, 70 percent of the oil shipped to the East Coast passes through the Delaware Estuary.

In short, it is the frontline. If the fresh water is forced to retreat, the percentage available for drinking is reduced. If the water in the estuary becomes toxic with pollution — picked up anywhere on its route including your building or parking lot — it will enter both the birds' — and our — food supply.

We are all connected to the cycle no matter where we get or how we dispose of our water.

We can disagree on the spiritual or non-spiritual source of life; we can disagree on legislation, regulation and protection strategies; but we cannot disagree on the importance of maintaining a clean, fresh, abundant water supply. After oxygen, it is the second most important requirement of life.

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