

# Streaming Wisdom

## Watershed Consciousness in the Twenty-first Century

by Peter Warshall

In our towns and cities, two of the essential sources of life—water to drink and soil to grow food—remain hidden from our eyes. The hills and valleys are coated with asphalt, ancient streams are buried beneath housing, and soil is filler between gas, water, and electric piping. Watershed consciousness is, in part, an invitation to peel off (not discard) the layers of industrial and technological activity that hides us from the water and soils of our communities. It is an invitation to reveal where you live and how your body's plumbing and, in many ways, community heart, are connected to Nature's pathways.

### What is a Watershed?

A watershed is a gatherer—a living place that draws the sun and rain together. Its surface of soils, rocks, and plant life forms a “commons” for this intermingling of sun, water and nutrient. Physically, a watershed takes many shapes. It is drawn emblematically in the shape of a teardrop or a cupped leaf or a garden trowel to

depict the oblong dish-shape of the valley with its ascending hillslopes, the slopes that gather runoff toward a central stream and connect to another stream or the coast at the point of a leaf.

But, most watersheds do not faithfully copy emblematic drawings. Uplifting, faulting, downwarping, or layering of each watershed give them a beautiful individuality. The bedrock texture—its granite or shale, sand or limestone—helps create, mold and hold (in a sense, cherish) the watershed's fragile skin or soil. The texture of plants, soils, and rocks accepts rain and snow into its body as soil moisture and groundwater or lets it go: its unused water heading downstream or sky-up; its unabsorbed energy dissipating as heat or reflecting back through the atmosphere. This daily and seasonal passage of solar radiance, water's flow, and the earth's metabolic breaths is as unique in each watershed, as in each human, on the planet.

For humans, the watershed (and its big cousin, the river basin) is a

hydraulic commons—an aquatic contract that has no escape clause. From forested headwaters through agricultural midstream valleys to the commercial and industrial centers at the river's mouth, good and bad news travels by water.

Did my toilet flushing give downstream swimmers a gastrointestinal disease? Did the headwater's clearcut kill the salmon industry at the river's mouth? Did my city's water needs dam and drain off a river and close down an upriver farm that fed me fresh vegetables? Did the toxic waste dump leak into the groundwater and poison people in the next county?

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The watershed journey is right out your window—among the hills and valleys that surround you. It is the first excursion of thought into the place you live. It is not inner geography—the continuing attempt to feel

better by mapping the mysterious meanderings of our hearts and mind—nor is it whole Earth geography—the struggle to gain perspective of our place in planetary history.

Watershed consciousness is a form of home awareness, respect, maintenance and repair. It starts by knowing where your water comes from (besides the faucet or vending machine) and where it goes when you flush; what happens to the rain that runs off your roof; what soils your home and community rest upon; what soils produce your food; and who shares your water supply, including which fish. The Watershed Way is a middle way, singing a local song, somewhere close by, between Mind and Planet.

### Watershed Economy

Watersheds provide free or relatively cheap community services that are often undervalued or not valued in river basin protection. Watersheds have “ecostructures” that gather, store, channel, schedule, disperse, transform, produce (and reproduce) goods, and provide information networks and dozens of crucial

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services for human communities. Water, heat energy and life itself—their abundance, their rhythm, and their quality—move in harmonies and disharmonies with watershed ecology and economics.

Certain aspects of watersheds can be valued by considering replacement costs (cost of replacing a forest killed by acid rain); shadow pricing (cost of restoring commercial fisheries damaged by dams or diversions); prevention costs (cost of purchasing flood-plain vs. replacing destroyed buildings and roads); loss of earnings (loss to eco-tourist industry by damming or rescheduling instream flows); environmental surrogates (cost of a wastewater treatment plant as a surrogate for water conservation, reduce sewage volumes, and a treatment by wetland) as well as others. No one has a good method for pricing sublime beauty of the value of dawn song in spring.

Here are a few of the watershed community goods and services:

- Watershed plants, microbes and soils act as chemical renovators, biocyclers, and filters of water quality. Clay soils are still the best free filters known. Neither virus nor harmful bacteria escape their abilities. For instance,

constructed and natural wetlands cleanse runoff pollution from feedlots, highways, acid mine drainage, clearcuts, polish treated wastewater, and restore some of the habitat destroyed during development.

- Free-running creeks and rivers with their rapids and waterfalls aerate the flow increasing its water purification and supporting salmonid fish.

- Watershed plant life modulates solar energy collection by shading the ground, humidifies and filters the air, and changes the color of the watershed surface compared to surface textures such as asphalt. The Forest Service has estimated that tens of millions of dollars in cooling bills could be saved by urban and desert-city reforestation and many millions saved in health costs.

- Watersheds act as valves of waterflow. They can convert runoff to storage in wetlands or percolate water into soil and bedrock reducing, for free, peak flood damage and flows.

- Watersheds in equilibrium (without massive roadcuts or strip-mining or site clearing) act as hillslope stabilizers, replacing the need for buttresses and sediment traps.

- Stable watersheds are the ultimate production

systems for all animals, their food and shelter. They are the most logical geographic unity for ecosystem management. They are the local green machines of photosynthesis. They prosper when the drainage net, channel, and hillslopes detain water and encourage growth (See “Lingo” page 8). Green growth is a basic production, ultimately more important than industrial production.

In short, drainage nets etch an equilibrium pattern into the watershed’s surface. The drainage net balances channel size and shape with hillslope runoff. Upsetting this balance by paving, channelization, earth moving, and excessive streamflow diversions upsets the balance and leads to huge maintenance or techno-fix costs and reductions in beauty. Love and work with your watershed’s drainage net, respect its resilient peaks, and cherish its living creatures. Reverence and restorative economics can be the river’s voice. 🐟

*Peter Warshall wrote the classic watershed issues for the Coevolution Quarterly (Winter 1976/77), now the Whole Earth Review. He has worked on watershed and community issues in the American West and Africa.*

### Grassroots Voices on Watershed Efforts

Saginaw Basin Alliance, MI

*“One of our greatest challenges is addressing the diversity of land-use issues within the Basin. From highly industrialized Flint and Saginaw to near wilderness in some of the northern range, we respect and invite all to participate. One powerful and essential tool that has helped us address a broad array of interests is education. The Saginaw Basin Alliance’s Water Watcher program has reached people of all ages throughout the watershed. The program has bridged the gaps of generations, creed, color, and class to enlighten people on the issues across the Basin.”*

Barbara Short,  
Environmental Coordinator  
for Board of Directors

The 8,800-square-mile Saginaw River Basin is the most contaminated site in Michigan and one of the top five in the country. The SBA is the citizen-action arm of the Saginaw Bay National Watershed Initiative, a major planning and management effort involving numerous public and private interests.

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