

Reaching a Watershed

What is a watershed? Simply put, a watershed is the entire area of land that drains into a single stream or water body. It is the land that water, sediment and dissolved materials flow over or under on their way to a stream, river, lake, estuary or wetland. Think of the hills in your neighborhood— a drop of water falling on one side of a hill flows into one watershed, and a drop falling on the other side may roll to another

watershed. Since a watershed encompasses all the areas that would contribute pollution to a particular body of water they are good focal points for managing coastal resources. Watershed management transcends social and political boundaries to take into account the geology, topography, hydrology and pollution impacts of a particular area on a coastal water body.

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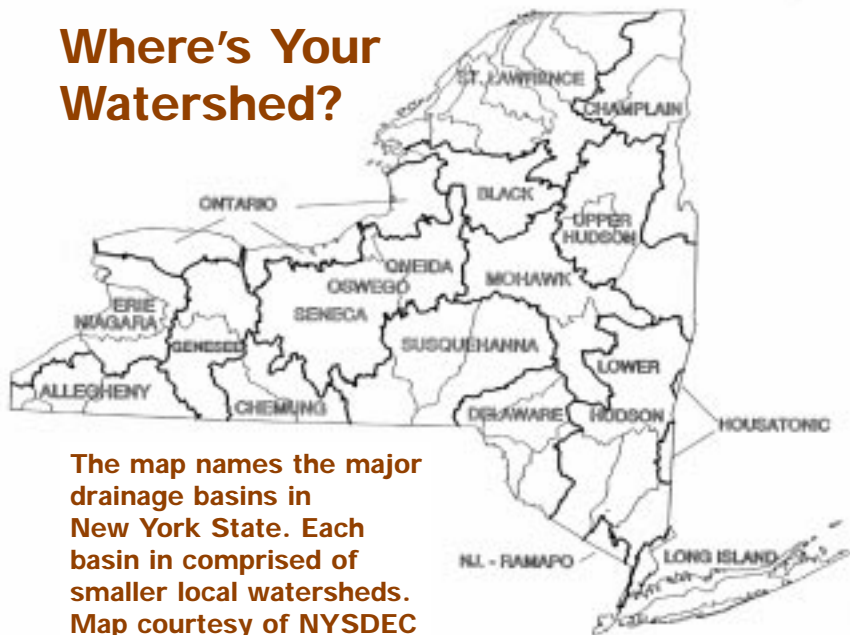
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COAST WATCH

Where's Your Watershed?



The map names the major drainage basins in New York State. Each basin is comprised of smaller local watersheds. Map courtesy of NYSDEC

"Watershed," continued from front cover

Streams and rivers pick up pollutants from human activities that occur in the watershed as they flow down to the coast. Pollution associated with human activities such as farming, gardening, boating, building, driving and even walking the dog or washing the car may ultimately impact the quality of coastal waters. For example, as a river or stream flows through an urbanized or rural area it can gather various

Photo by John Hood



Participants of the Great Lakes Student Summit explored one of the most recognizable waterfalls in the world — Niagara Falls, where the Niagara River plunges over this precipitous drop (see page 13). Water reaches the Niagara River from Lakes Superior, Huron, Michigan and Erie. Further downriver, well below the falls, water drains into Lake Ontario.

contaminants, including fertilizers that wash off lawns or fields, untreated sewage from failing septic tanks, wastewater discharges from treatment plants or industries and sediment from construction sites or agricultural fields. Wherever you are, you are in a watershed. It is important to remember that what happens on land can affect the water.



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// —Kimberly Zimmer

Pollution from these sources on land may have many impacts on the nearby water— loss of habitat, loss of recreational opportunities and loss of economic resources. For example, sewage treatment plants and stormwater runoff can contribute excessive amounts of nitrogen to the watershed. This nitrogen stimulates the growth of algae, blocking light that would normally reach aquatic vegetation. When the algae dies off, the decay process uses up the oxygen in the water, leaving virtually no oxygen for fish and other organisms. This condition, known as hypoxia, may occur with some regularity and may have other contributing factors (see "Sponsoring Sound Research," page 6).

During storm events, sediments wash off into streams and rivers of the watershed. Sediments cloud or muddy the water, smothering organisms living on the bottom, preventing light from reaching aquatic vegetation, making the water unappealing to swimmers and increasing the need for dredging. Sediments can also carry toxic substances. These toxic substances, such as pesticides, metals, polycyclic aromatic hydrocarbons (PAHs)

and polychlorinated biphenyls (PCBs), can accumulate in sediments and aquatic organisms. Toxic materials can also enter through storm drains, industrial and sewage treatment plant discharges and automobile, factory and power plant emissions.

Pathogens, disease-causing microorganisms such as bacteria and viruses, are also present in water-



A heron wades in Downs Creek which drains into Great Peconic Bay. The watershed for the Peconic Bays is comprised of the five east end townships of Long Island.

Photo by Ken Rubino

sheds and can be carried by runoff. Some sources of pathogens are untreated or poorly treated sewage, combined sewer overflows and animal waste. In elevated amounts, waterborne pathogens often result in beach and shellfish bed closures.

Litter or debris, washing in from both storm drains and the tide, is one of the more widespread pollution problems found in coastal ecosystems. Debris comes from many sources, including improper disposal of trash on land, stormwater runoff and combined sewer overflows and seagoing vessels. Once litter gets into coastal waters, it can adversely affect wildlife, the environment, humans and our economy.

Today there are many watershed management efforts underway in

New York State (see map on page 4 for locations) which strive to understand the cumulative environmental impacts on our coastal waters and ways to mitigate these impacts. This watershed management approach provides an opportunity for municipalities and non-governmental organizations to work together within a defined geographical area to consider the relationship between land use and the impacts to surface and

ground water during the decision-making process. Watersheds transcend political, social and economic boundaries and therefore, it is important to include all interests when designing and implementing a watershed plan. As our population grows, the demands imposed on our natural resources increase, and protecting these resources for all their natural, economic, and aesthetic values becomes even more important.

—Kimberly Zimmer

***New York Sea Grant
Extension Support Specialist***



The lower Hudson River is the site of current Sea Grant research and extension efforts. Hudson Valley specialist Nordica Holochuck's activities include outreach for a submerged aquatic vegetation workshop at the Institute for Ecological Studies sponsored by NYSDEC, Cornell University and NYSG.

Photo by Hudson Roditi

Watershed Tips

What happens in your watershed can affect another, sometimes hundreds of miles away. Help protect your watershed and coastal waters by becoming informed and getting involved.

- ▶ **Follow proper lawn care and waste disposal practices. Use pesticides and fertilizers sparingly and correctly. Compost organic waste.**
- ▶ **Learn how to properly dispose of toxic substances. Many areas have hazardous waste collection days or sites for disposing paint, automotive fluids and cleaning products.**
- ▶ **Curb your dog and properly dispose of pet waste by placing it in the trash. Do not leave it on the ground or throw it down a storm drain. Pet waste contains bacteria and viruses that can contaminate shellfish and cause the closing of bathing areas.**
- ▶ **Inspect your septic tank annually if you have one. Pump it out every 3 to 5 years. Proper maintenance and careful waste disposal will prolong the life of your system and prevent discharge of untreated sewage to ground and surface waters.**
- ▶ **Pick up litter when you see it. Make sure to properly dispose of your own trash and remember to recycle.**