

Coastal Salt Ponds & Their Watersheds

What is a watershed?

A watershed is an area of land from which all the surface water and ground water flows from higher elevations downhill to a common body of water (MA Department of Environmental Protection, *Lawns and Landscapes in Your Watershed*). Three coastal salt ponds on West Tisbury's south shore--Tisbury Great Pond, Long Cove Pond, and Big Homer's Pond--have watersheds that make up over 1/6 of Martha's Vineyard (over 12,000 acres), extending over much of West Tisbury and Chilmark. The water that flows within the boundaries of these watersheds will eventually reach the ponds.

Why are the ponds and their watersheds important?

Coastal salt ponds are rare, treasured habitats restricted to the shores of southern New England. The coastal salt ponds in West Tisbury provide 10,000 bushels of oysters--over 1/2 of Martha's Vineyard's annual harvest--are home to rare species, and are relatively unspoiled ecosystems. Over 100 native plants line the shores of these ponds. River Otter still frolic in the ponds' waters. Over thirty species of fish live in the ponds and streams, with many more historically recorded. In the West Tisbury watersheds, farming is still a strong tradition, and rare habitats like Scrub Oak shrublands, sandplain grasslands, and coastal heathlands can still be found. Elsewhere coastal ponds have not fared as well, making these ponds some of the best examples of coastal salt ponds in the world.

What are the threats to these ponds?

In southern New England, other ponds have been more impacted by air pollution, exotic species, pathogens, jetty construction, excessive pond uses, and excess nitrogen from septic systems, sewage treatment plants and other sources. Although West Tisbury's coastal salt ponds are less impacted by these threats than most other coastal salt ponds, already parts of the West Tisbury ponds are showing signs of disrepair. As housing construction continues within the watersheds of these ponds, the ponds will become increasingly at-risk to nitrogen overload from septic systems and other human sources.

What can I do as a resident of the watershed?

You do not have to live right on a pond or other body of water or even near one to be an important part of your watershed. You could be 5 miles away! Everyone who lives on Martha's Vineyard lives in a watershed and everyone needs to be good watershed neighbors.

What you do in your home and business and on your property directly affects the body of water in your watershed. How you wash your clothes, the kinds of chemicals you apply to your lawn and vegetation, how much water you use, what you put down your drain--all of these everyday, seemingly simple acts, can seriously impact the ponds and water supply of our Island. Fertilizers, pesticides, herbicides, petroleum products, household chemicals, septage, battery acids, and more all can end up in the ponds and in your neighbors' drinking water. These pollutants don't observe property lines; they go wherever the water takes them (*Lawns and Landscapes in Your Watershed*).

There are many ways you can help to protect these ponds into the future. Find out more in the pages to come.

Conservation Partnership *of* Martha's Vineyard

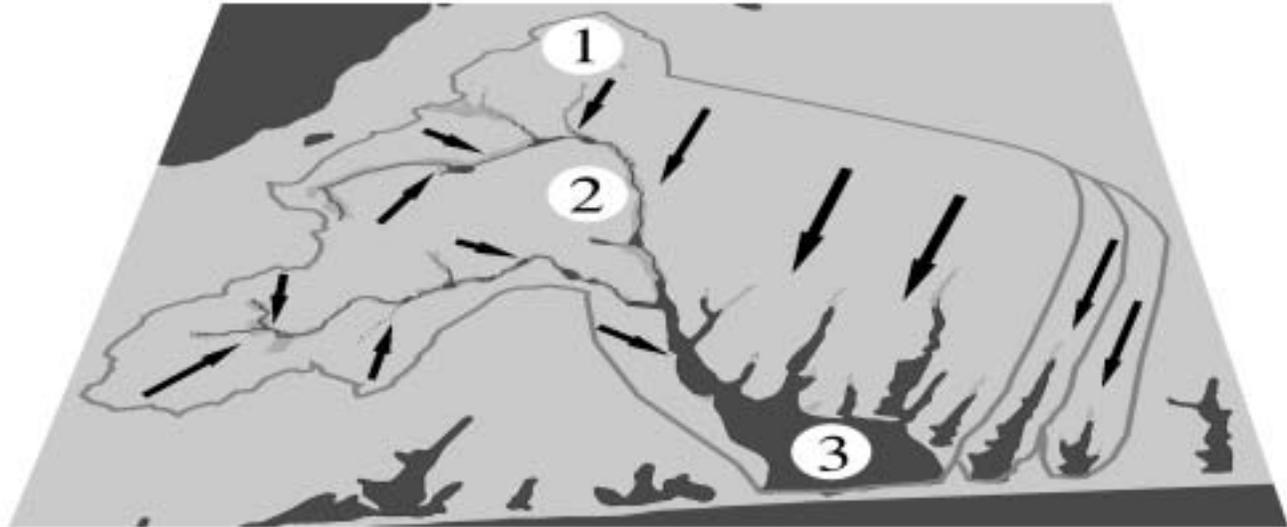
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From Raindrop to Tisbury Great Pond: The Life of a Drop of Water



When a raindrop falls on your roof, where does it go from there? Let's follow the life of a drop of water from the time it leaves its cloud as a raindrop to the time it reaches the Atlantic Ocean. Meet Bob, he's our raindrop guide for today and will be showing us his trip through the Tisbury Great Pond watershed (outlined on the map). The story that unfolds is shown in the diagram below as Bob moves from the number one to the number three. Arrows on the map show the direction water will travel as it moves through the ground.



Part I (see map #1)

A July thunderstorm creates a downpour over West Tisbury and Chilmark. Bob, the drop of water, falls from the thunderhead and lands high up on Indian Hill. He slides off an oak tree leaf and drops to the ground next to a huckleberry plant. Slowly, he sinks into the coarse sandy soil. Some of his fellow drops get sucked into the roots of the huckleberry. Bob moves on and becomes part of the groundwater, where he gathers with millions of other water drops. At this point, Bob is a fairly complex character. Inside him is nitrogen from acid rain, sulfur, many different types of salts, pollen, dust, and various particles from air pollution. After a year of travelling very slowly through the groundwater, Bob is pumped into someone's house and ends up in their failed septic system. There he becomes filled with nitrogen, phosphorus, *E. coli*, and other pollution and pathogens. Bob seeps back through the sandy ground and doesn't feel well.

Part II (see map #2)

Two years later, Bob surfaces and begins to flow with other drops of water. He passes under Red Maples and Beetlebung trees and soon enters Priester's Pond. There he meets many different drops of water, which came from all parts of the upper Tisbury Great Pond watershed. Each tells its own story of the path they took to reach the pond. Finally, Bob flows over the pond's dam, flows along the Mill Brook, and heads towards Tisbury Great Pond, passing through farmland, forested wetlands, and Mill Pond.

Part III (see map #3)

Soon thereafter, Bob enters Tisbury Great Pond. There he mingles with not only water coming from the Mill Brook, but also from the Tiasquam River, groundwater from the Great Plain and salty ocean water. The pollution inside Bob and other drops of water creates an algae bloom. Bob then enters an oyster, which filters him through and picks up some of the pollution. After circling around the pond for a bit, Bob flows through the barrier beach and out into the ocean.

The Land-use Connection: What People Do in the Watersheds Affects the Quality of the Ponds

The ponds in West Tisbury are threatened by human uses in the watershed: as too much nitrogen enters a pond the entire ecosystem changes. Shellfish beds may close, sites may become unswimmable, plants and animals may disappear. The number of houses within a watershed and the choices that each homeowner makes will determine the future of Tisbury Great Pond, Long Cove Pond, and Big Homer's Pond. Many options are available to help protect these ponds. A healthy pond depends on watershed landowners who help reduce their impact on the ponds.

The figure below shows structures within the watersheds (black dots) and protected open space (dark grey). The nitrogen from these structures and other sources is already threatening the ponds, although techniques exist to reduce nitrogen using more advanced septic systems. The potential exists for development within most of the undeveloped and unprotected lands in the watersheds. If the watersheds were built-out, the water quality of the ponds would diminish significantly, altering them forever. The potential also exists to increase the amount of protected lands. Protected space preserves water quality both for drinking water and the health of the ponds and provides other benefits such as open space recreation and wildlife habitat.

The back of this sheet gives some watershed practices that are crucial to keep our watersheds clean. Please read and post them in your house.



Good Vineyard Watershed Practices

Some Pond-friendly advice from Bob the Water Drop...



POST THIS IN YOUR HOME

1. Clean septic systems out every 2-3 years.

Do not put solids, grease, oil, poisons of any kind, paint, paint thinners, colored toilet paper, medicines, disinfectants, acids of any kind, coffee grounds or any sort of hazardous chemicals down your drains or poured anywhere on your property.

Do not use a garbage disposal if you have septic. A disposal will contribute an excess of solids to your system and increase your need to pump out more frequently.

2. Motor oil and other machine liquids should be carefully monitored and disposed of. Make sure your car, lawn mower, boat or any other combustion engine machine does not leak motor oil, gasoline, antifreeze or other chemicals. Recycle any unused machine liquids.

3. Landscape with native plants that require less water and fertilizer.

Try to keep as much of your land as natural as possible.

Reduce the use of fertilizers, pesticides, herbicides: use organic, no phosphate, or slow-release fertilizers.

Leave landscape naturalized around bodies of water with minimal mowing.

4. Practice water conservation in your home. Be aware of your water usage and try to reduce it. Buy appliances that utilize less water such as washing machines and dishwashers. Use phosphate free detergents.

Do not run water unnecessarily such as when brushing your teeth, washing your hair or watering your foliage.

When washing cars, use biodegradable soap and water sparingly.

When cleaning boats, use a scrub brush and no soap.

Use reduced-flow showerheads, faucets and toilets. Keep leaks repaired. Use appliances when fully loaded. Try to spread washing, bathing and general water usage out over the day and week rather than doing it all at once and overloading your septic system. Take short showers instead of baths.

5. Take any hazardous waste to the Island Waste Recycling days which are announced in the newspapers. These include medications, solvents, old oil filters, motor oils, pesticides, car batteries, anti-freeze, herbicides, paints, paint thinners, batteries, acids, poisons, and more. For more details, call 508.693-6756 in West Tisbury and 508.645-3760 in Chilmark.

6. Conserve land or contribute to land conservation. Development is a leading cause of watershed pollution due to the proliferation of septic systems and increased use of chemicals that result when new houses are constructed and occupied. By putting a conservation restriction on your land or contributing to Vineyard organizations which buy open land, you can help limit development, reduce water pollution and help protect the rural nature of Martha's Vineyard.

7. Be active in your neighborhood. Encourage others to be good watershed neighbors. Copy this list and give it to your friends and neighbors.