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Watershed Action on the Island

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On Aquidneck Island, clean water is essential not just as drinking water for some 14, 500 households and businesses, but also as a critical factor in an economy driven by ocean pursuits that include swimming, surfing, fishing, and boating.

Warning signs- from beach closings to polluted drinking water- have led to a unique moment in the island's water quality awareness as more than a dozen initiatives are currently underway this summer, all with one shared goal: protect the watershed, and in so doing, protect the quality of life on Aquidneck Island.

The initiatives- undertaken by state and municipal officials, nonprofit groups, and concerned citizens- range from a feasibility study for a storm-water utility in Middletown, to a watershed study identifying significant parcels of land throughout the island that must be conserved.

"A healthy watershed is and indicator of overall ecosystem health, and on Aquidneck Island, where you have 60,000 people who rely on surface water for drinking water, you absolutely must have a healthy Watershed," said Dr. Jameson Chace, assistant professor of biology at Salve Regina University.

Where is the Watershed? For many people, awareness of watershed issues may be somewhat elusive because the watershed itself isn't obvious. The Aquidneck Island Watershed Council, a grass roots organization formed three years ago to protect the watershed, defines a watershed as "the land over which rain and snowmelt drain to a particular water body such as a stream or a reservoir." On Aquidneck Island, there are seven watershed areas, with three quarters of the watershed land located in Middletown. The names of the seven watersheds give a clue to their location as they correspond to bodies of water: Gardiner Pond, Nelson Pond, Maidford River, Bailey Brook, Sisson Pond, St. Mary's Pond, and Lawton Valley Reservoir. The relationship of watershed health to water quality—both drinking water and the beaches— is alarmingly direct: Some four feet of rain falls on Aquidneck Island in a typical year; the rainwater accumulates in the ponds located in the island's seven watersheds. Those ponds, or reservoirs, constitute the raw source of drinking water for the island; the water is treated before being distributed, but the more contaminated the raw source is, the more intensively it must be treated. If storm-water runoff coursing through the watershed is polluted (from factors typically associated with developed areas, e.g. Lawn fertilizers, pet waste, motor oil and gasoline), the polluted runoff can eventually lead to high bacteria levels in the water at the beach, which triggers a beach closing.

Watershed Study One way to protect the watershed is to protect the land around the watershed from development, and that approach prompted a local nonprofit group, the Aquidneck Land Trust (alt), to

undertake a major watershed study. In announcing the watershed study's completion last week, alt said it had identified 300 open-space parcels, totaling 3,000 acres, at risk of development. "We needed to prioritize those parcels, so we came up with a scoring criteria that looked at whether the parcel was contiguous to a critical water source, whether it contained forested area, wetland, and other factors," explained Ted Clement, alt's executive director. Using those scoring criteria, alt designated 98 of the 300 parcels as Tier 1, the most important to protect. Those 98 parcels amount to 2,000 acres, and with that priority list in hand, alt has begun to contact municipal officials across the island to begin a plan to protect the parcels. An example of a Tier 1 parcel that alt has already acted to protect is the 70 acres of land belonging to St. Mary's Church, off East Main Road, in Portsmouth. The land borders St. Mary's Pond, a key watershed area, and it is also prime farmland and important wildlife habitat. Alt signed an agreement with St. Mary's Church in late May that gives alt two years to raise $3 million to conserve the land.

Seven watershed areas—Gardiner Pond, Nelson Pond, Maidford River, Bailey Brook, Sisson Pond, St. Mary's Pond, and Lawton Valley Reservoir—are critical to the quality of Aquidneck Island's beaches and drinking water. (Photo courtesy of URI Environmental Data Center)

The greatest benefit of the watershed study, in Clement's opinion, is the "very clear marching orders" it gives alt for what parcels to protect. "Right now on Aquidneck Island, only 20% of the land is conserved, versus 40% for places like Block Island and Nantucket," he said. "We're hearing lots of chirps from the canary in the coal mine, if you will, in terms of beach closures, pollution to drinking water, traffic. All these things are telling us that now is the time to be critically focused on protecting the watershed."

Storm-water Utility Another way to protect the watershed is to manage storm-water runoff, as research indicates that "the prime source of marine and freshwater pollution has been identified as storm-water runoff," according to Lorraine Joubert, director of the Nonpoint Education for Municipal Officials (NEMO) program at the University of Rhode Island. Joubert's group is contributing to efforts throughout the state to create storm-water utilities, a practice that many communities across the country have already adopted, but one that has not happened yet in Rhode Island. "A storm-water utility provides the fairest, most effective way to secure steady funding to maintain and improve storm-water infrastructure," explained Joubert. The way storm-water utilities typically work is to assess a fee based on the amount of impervious surface a residence or business has; impervious surfaces include roofs, paved driveways, and parking lots. "Aquidneck Island has a lot at stake, and it would stand to benefit greatly from better storm-water management," said Joubert, who is

Aware of the beach closings the island has experienced. To that end, the Rhode Island Department of Environmental Management has just begun a feasibility study with the town of Middletown, the first step toward Middletown creating a storm-water utility, according to Elizabeth Scott, Deputy Chief of Surface Water Protection in RIDEM's Office of Water Resources. Scott said RIDEM has begun an analysis of Middletown's impervious coverage, using aerial photography to calculate driveway, rooftop, and parking lot coverage, parcel by parcel. "The info will be used as the basis of a proposed rate schedule," said Scott. Scott said RIDEM is working with at least two towns in the state, Middletown and Westerly, and possibly others, to develop stormwater utilities, and identified Middletown because of the town's proactive approach to managing storm-water issues. "We would love to see a regional, multi-town approach to storm-water utility," said Scott, who foresees the possibility of Middletown managing a storm-water utility for all of Aquidneck Island. Tom O'Loughlin, Middletown's Public Works Director, is part of the statewide planning effort for storm-water utilities, an effort that includes cooperation from many groups, including Save the Bay, the Narragansett Bay Estuary Program, NEMO, and RIDEM. "In the future, storm-water will be as carefully managed as wastewater," said O'Loughlin. *Coming in Part 2: Grass Roots Ef- forts, Drinking Water Issues, and What You Can Do to Protect the Watershed.*