

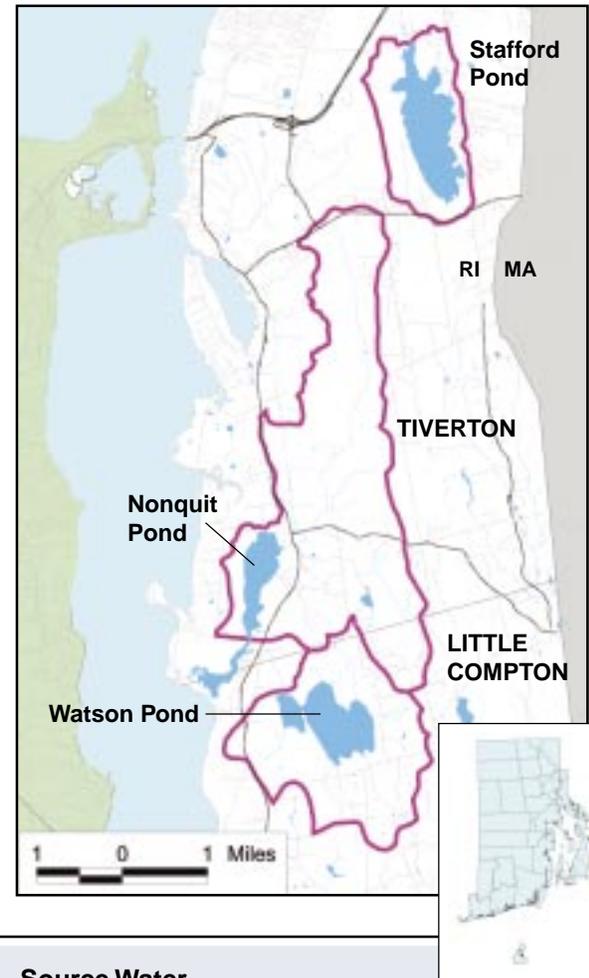
## Tiverton and Little Compton Drinking Water Assessment Results

Stafford, Nonquit, and Watson Ponds are vital drinking water resources for southeastern RI. Stafford Pond is a public water supply for the Stone Bridge Fire District and also a popular fishing and recreational area. The Pond and its watershed – the area of land that drains to the reservoir – are located entirely in northeastern Tiverton. The public water district, which includes most businesses and about half the town’s population in northern Tiverton, is served directly by the Stone Bridge Fire District or through the Tiverton and North Tiverton Fire Districts. On an as-needed basis, the Stone Bridge Fire District sells water to the Portsmouth Water District. In addition the reservoir outflow, which flows north into Massachusetts, provides an emergency supply for the city of Fall River.

The Nonquit Pond watershed, located almost entirely in Tiverton, and the Watson Pond watershed in Little Compton are backup supplies for Newport Water’s Lawton Valley distribution system in Portsmouth. Both watersheds are also important natural areas valued for unique habitat, fisheries, scenic value, and low intensity recreation.

### Key Findings

- All three watersheds have limited development keeping pollution risks in the low-moderate range. However, scattered commercial development, waste disposal sites, and dense shoreline development in Stafford Pond magnify pollution risks locally.
- Water supplies meet drinking water standards, but high nutrient inputs are overfertilizing Stafford Pond. The RI Dept. of Environmental Management (RIDEM) has taken steps to correct the main source, a dairy farm. Because nutrients may still be recycled from pond sediments, any additional inputs are a major concern.
- Future industrial and residential development is expected to raise pollution threats in the Stafford Pond watershed from moderate to high levels. Land use risks in the Watson and Nonquit watersheds are likely to remain low provided runoff and fertilizer use is controlled and buffers to surface waters and wetlands are protected.
- Protecting future drinking water quality depends on how land-owners manage their property, strict enforcement of existing development standards, and continued implementation of town watershed protection measures.



### Source Water

The focus of this assessment is on public drinking water supply “source” areas – the wellhead protection area that recharges a well or the watershed that drains to a surface water reservoir. Source water is untreated water from streams, lakes, reservoirs, or underground aquifers that is used to supply drinking water.

This fact sheet summarizes results of a source water assessment conducted for the Stone Bridge Fire District and the city of Newport Water Division. It identifies known and potential sources of pollution to drinking water supplies and ranks their susceptibility to future contamination. The goal of this study is to help water suppliers, local officials, and residents living in drinking water supply areas to take steps to keep water supplies safe.



# Current Land Use & Threats to Water Quality

To locate high-risk threats most likely to affect water quality, this study evaluated and ranked each watershed based on land use and natural features including: high intensity land uses, forested shoreline buffers, and estimated nutrient sources such as septic systems and fertilizers. A rating from low to high was assigned to each factor and summed to create an average pollution risk score for each assessment area, and an average susceptibility rank for the whole supply.

## Susceptibility to Contamination

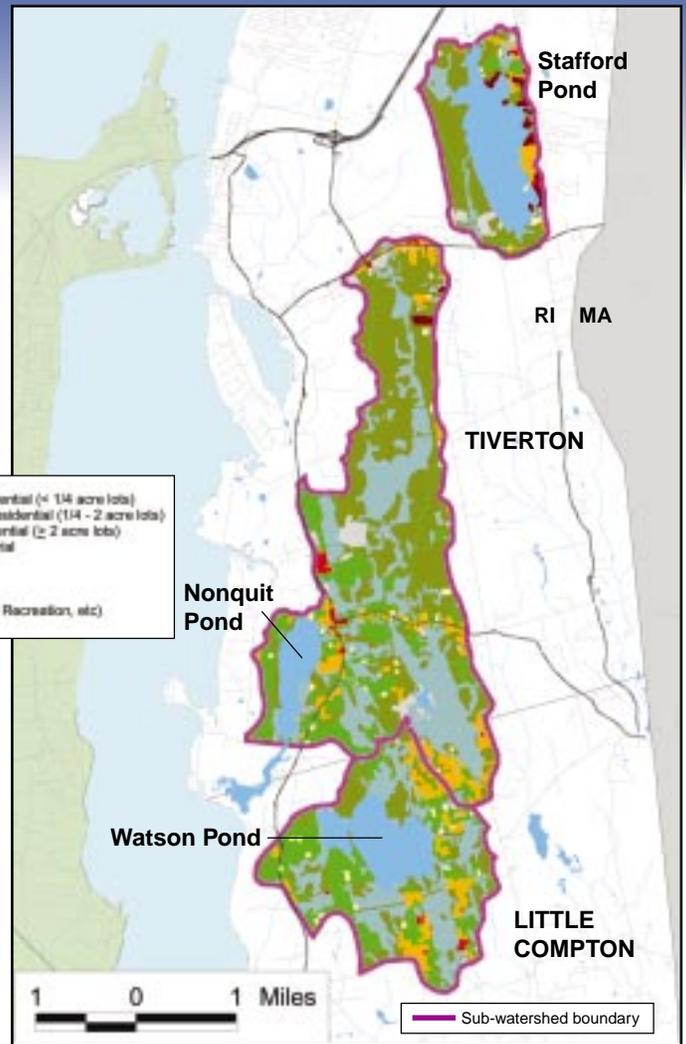


The results show that the Stone Bridge Fire District and Newport Water supplies are moderately susceptible to contamination. This is an average ranking for each supplier based on land use and existing water quality. Individual watersheds may be more or less susceptible to contamination.

Note: A moderate ranking means that the water could become contaminated in the future. Some contaminants can affect taste, odor, and cost of water treatment at levels below safe drinking water standards. Protection efforts are important to assure continued water quality.

## Current Conditions

- Forests and wetlands cover at least one half of each watershed. Shoreline buffers are largely undisturbed in Nonquit and Watson watersheds. These are important factors in maintaining water quality.
- Watson and Nonquit watersheds have farmland where fertilizers may be used. However, use of good management practices minimizes risk of nutrient and sediment movement.
- The eastern shore of Stafford Pond watershed is intensely developed with homes on lot sizes one quarter acre and smaller. Many of these homes have sub-standard septic systems that are not providing proper treatment of nutrients and bacteria, even without obvious signs of failure.



*Current Land Use - Forests, wetlands and open lands currently help maintain water quality. Scattered commercial uses and development clustered in shoreline areas are currently the most serious threats.*

- RIDEM studies show that in addition to farm wastes, primary sources of pollution to Stafford Pond are runoff, substandard septic systems, fertilizers, and boats. The risk of pollutant movement to surface waters is greatest on wet soils and lands adjacent to surface waters and wetlands.

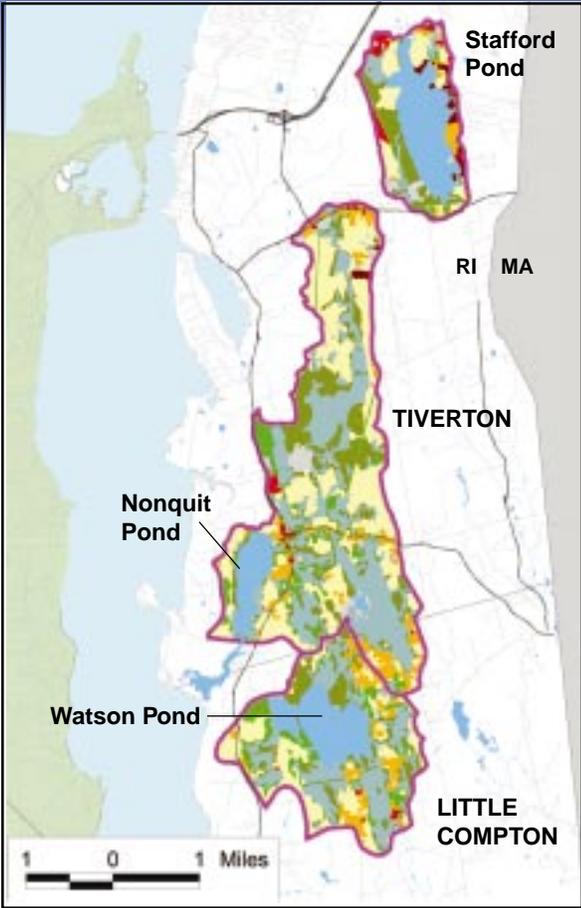
*Nonquit Pond photos courtesy Tiverton Land Trust*



# Future Land Use Threats

The vast majority of the watershed is in private hands and subject to development. Under current zoning: 25-30 percent of each watershed could be converted to new home sites; up to half the forest in the Tiverton watersheds could be lost or seriously fragmented; and two thirds of the farmland in the Watson Pond watershed could be developed.

- Stafford Pond, already impaired by excessive nutrients, is at greatest risk of degradation from industrial and residential development, including infill on substandard lots. Expected impacts include a 50 percent increase in the number of septic systems and a jump in impervious cover from low to high levels, with associated increases in sediment and nutrients in stormwater runoff.
- In the Nonquit and Watson watersheds the shift from forest and farmland to low-density residential means nutrient inputs will stay about the same but runoff, lawn fertilizers and septic systems will become more significant sources. Actual impacts are highly uncertain and may be much greater if landowners develop their properties intensively and if highly marginal wet soils are developed.
- Most remaining unprotected land is wet, with water table within 3 1/2 feet or less from the ground surface. These areas require careful design to prevent increased runoff volume. In addition, advanced wastewater treatment systems used to build on wet sites are sure to fail without routine maintenance.



*Future Land Use - The future land use map shows how the watershed will change with full future development, or "build-out" based on current zoning. Forest and fields will shift to low density residential; commercial and industrial uses will expand.*

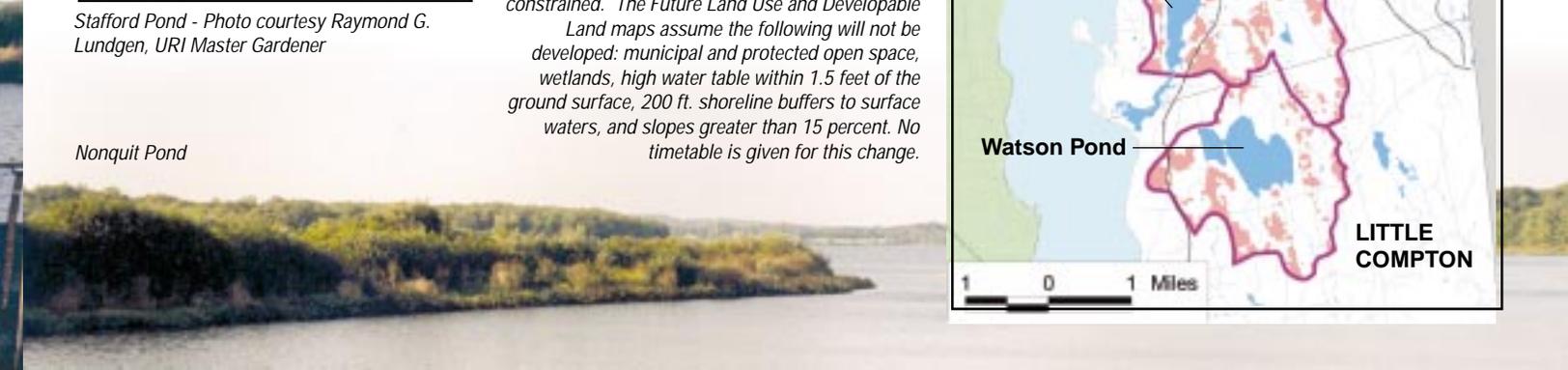
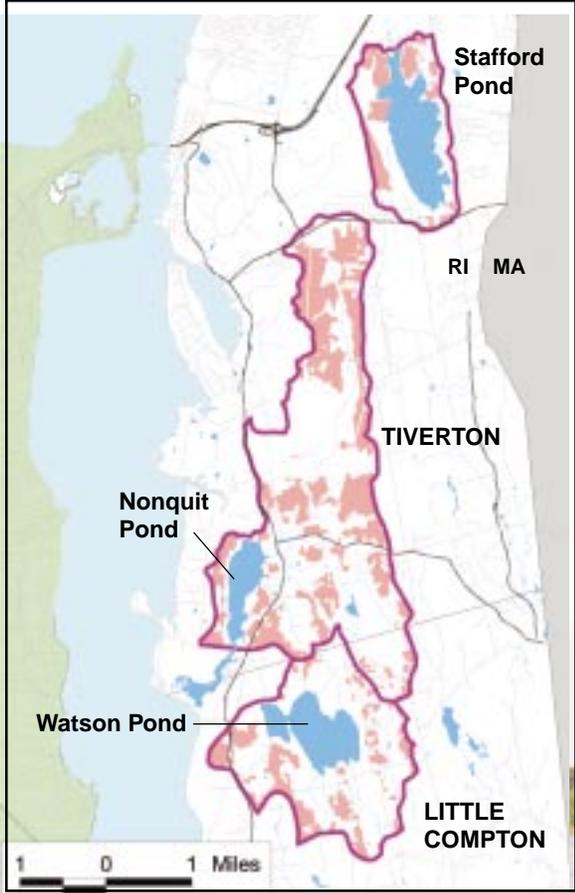


*Watson Pond - Photo courtesy Eastern RI Conservation District*

*Stafford Pond - Photo courtesy Raymond G. Lundgen, URI Master Gardener*

*Nonquit Pond*

**Developable Land** - This map shows all land that could be developed after taking away land that is already developed, protected or otherwise constrained. The Future Land Use and Developable Land maps assume the following will not be developed: municipal and protected open space, wetlands, high water table within 1.5 feet of the ground surface, 200 ft. shoreline buffers to surface waters, and slopes greater than 15 percent. No timetable is given for this change.



## What You Can Do to Protect Water Quality

### Municipal Boards and Government

Tiverton has adopted watershed protection zoning (3 acres in Stafford Pond watershed, maximum 10 percent impervious and cesspool phase out) and is implementing a wastewater management program. Little Compton has a 100 foot wetland buffer setback. Continued implementation of these programs and updating of town plans and development standards is needed to protect future water quality.

#### **Town planning and land use ordinances**

Select a working group to review assessment results, evaluate gaps in current ordinances, and incorporate key recommendations into town plans and ordinances.

#### **Controlling runoff and nutrients**

- Adopt standards to limit site disturbance and keep runoff volume at pre-development levels.
- Set maximum impervious cover at current levels or no more than 10 percent, excluding wetlands from the calculation.
- Increase shoreline setbacks in critical areas for maximum nutrient and sediment removal.
- Use "conservation development" techniques to preserve forest and control site disturbance.
- Apply strict erosion controls. Assign field inspectors in erosive sites.
- Develop standards for redevelopment and infill to reduce impervious cover, retrofit storm water systems, and restore wetland buffers.

#### **Keeping septic systems functioning**

Establish septic system management programs requiring regular inspection and maintenance in critical areas. Restrict new alternative systems on highly marginal land. Phase out cesspools. Require additional site analysis, advanced treatment, and maintenance requirements for large systems.

#### **Community education and good housekeeping**

Expand community pollution prevention education. Start by mailing this fact sheet to watershed residents and water users. Adopt model practices at municipal garages, schools, and parks.

#### **Open space for water protection and recreation**

Open space protection should be a priority throughout the watersheds. Focus on acquisition of buffers to shorelines and tributaries. Coordinate with neighboring towns, water supplier, land trusts, and others to link open space

### Water Supplier

- Implement recommendations in the latest water supply system management plan.
- Continue to acquire land for protection, focusing on intake areas, shorelines and tributary buffers.
- Work with local officials to implement land use protection measures and education programs.
- Inspect water supply and protection area regularly for potential pollution sources.
- Expand reservoir sampling to monitor nutrient enrichment levels. Track frequency and duration of algal blooms.

### Homeowners

- Maintain wooded buffers or restore natural vegetation along wetlands or watercourses that run through your property. Reduce fertilizer and pesticide use. Limit watering.
- All septic systems need regular care to function properly, keep your well safe, and avoid costly repairs. Inspect annually and pump tank when needed, usually every 3-7 years.
- For information about protecting your well contact URI Home\*A\*Syst (401) 874-5398, [www.uri.edu/ce/wq](http://www.uri.edu/ce/wq)

### Farmers and Landowners

Work with the USDA Natural Resource Conservation Service to develop a conservation plan that addresses proper nutrient, manure, pest, and irrigation water management. Contact them at (401) 828-1300, [www.ri.nrcs.usda.gov](http://www.ri.nrcs.usda.gov)

### Commercial and Industrial Businesses

Adhere to all laws, regulations, and recommended practices for hazardous waste management, above and underground storage tanks, and wastewater discharges. Check local regulations and RI DEM Office of Water Resources (401) 222-4700, [www.state.ri.us/DEM/program/benviron/water/index.htm](http://www.state.ri.us/DEM/program/benviron/water/index.htm)

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### For More Information

- **R.I. Department of Health, Office of Drinking Water Quality**, (401) 222-6867, [www.HEALTH.ri.gov/environment/dwq/Home.htm](http://www.HEALTH.ri.gov/environment/dwq/Home.htm)
- **URI Cooperative Extension Nonpoint Education for Municipal Officials (NEMO)** (401) 874-2138, [www.uri.edu/ce/wq](http://www.uri.edu/ce/wq)
- **Stone Bridge Fire District** (401) 624-4486
- **Newport Water** (401) 847-0154 [www.cityofnewport.com](http://www.cityofnewport.com)

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