



River News

Our Mission: To restore, protect, celebrate and sustain the natural resources of the Westport River and its watershed communities of Westport, Dartmouth, Fall River, Freetown, Little Compton, Tiverton & Adamsville.

WRWA Annual Meeting
March 19, 2011 3 P.M.
Westport Grange Hall

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Herring Run into Cockeast Pond Restored

In December, work was completed on a project to correct the position of the culvert between the pond and the river to allow migrating herring, eels, and white perch to easily reach the pond to spawn in the spring. The previous culvert pipe sat too high for the fish to readily migrate into the pond during spawning season, which jeopardized the vigor of the herring population.



This project was made possible by the cooperation and involvement of a number of different groups, all with a common focus of preserving a local resource. This project was coordinated by the WRWA and the Westport Fishermen's Association, and included efforts from the Westport Highway Department, the Massachusetts Division of Marine Fisheries, the Westport Fish Commissioners, Field Engineering, Bodington Plumbing, Westport Excavating Co. Inc. and Pond Meadow Water Trust.

—Charlie Gerrior

The Footprint of a Watershed

When you hear or see the word watershed, what do you imagine? Perhaps the area around a body of water, such as a river or harbor. Or perhaps a larger land area, like a town or village. Well, you would be right on both accounts, but neither fully describes what a watershed is. **We all live in a watershed**—the geographical area that drains to a common waterway, such as a river, stream, lake, estuary, wetland, or, ultimately, the ocean. Watersheds come in all shapes and sizes. They cross town, county, state, and national boundaries. No matter where you are, you're in a watershed.

Watersheds can be as small as a person's footprint or as large as to encompass all the land that drains into Buzzards Bay. Ridges and hills that separate two watersheds are called the drainage divide. A watershed consists of surface water—lakes, streams, reservoirs, and wetlands—and all the underlying

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The Planning Board is proposing a LID By-Law at the next Annual Town Meeting.

What the heck is LID?

LID stands for "Low Impact Development." Low Impact Development seems like an oxymoron, because isn't all development high impact?

Everything is relative.

Years ago, before modern zoning was in place, there was no or very little control over development in any meaningful way.

In Westport, the Zoning By-Law has slowly evolved from requiring 20,000 square-foot (SF) then to 40,000 SF and now to 60,000 SF of area to become a legal building lot. These changes reflect reaction to the rapid development of many areas in town during the 60's and 70's, and the desire to decrease the impact of development on our local ground water supplies from individual cess pools, and now Title 5 septic systems.

Over time, following the lead of MA DEP, requirements for stormwater remediation were incorporated into the town's Subdivision Rules and Regulations. They currently require that applicants submit engineered plans with a 20% reduction in storm water run-off from any proposed subdivision site. (They must also adhere to MA DEP's stormwater rules and regulations.). Achieving these requirements usually entails the installation of a storm water system, which includes catch basins, large pipes and large retention and/or detention basins. These structures are large, expensive and require some degree of ongoing maintenance. They are engineered to infiltrate a maximum amount of the stormwater runoff back into the ground. Oil, fertilizers, pet waste, soaps and other debris can be carried through the infrastructure and discharged into surface and groundwater.

The Planning Board has a consulting engineer verify all of the calculations before approval of the subdivision plans incorporating these storm water systems.

Why is this necessary? The major reason is that with the development of a site, much of the land is disturbed and replaced with hard impervious surfaces, i.e. roofs, driveways, roadways, etc.

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River News is published by the **Westport River Watershed Alliance**, a nonprofit citizens' organization working to protect the environment and improve the economic, aesthetic, and recreational value of the Westport River watershed and its coastal environs.

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Mark Your Calendars for

June 18, 2011

RIVER RUN

Kayak/Canoe/SUP the
Westport River



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Evolution of WRWA's River Testing Program – Ten Years of QAPP

This year brings an anniversary to the table. Ten years ago we authored our first QAPP (Quality Assurance Project Plan) to guide our water quality monitoring program's protocol. This QAPP is a document, approved by state and federal environmental agencies, that spells out the technical and analytical specifics of our river testing program. Having this certified document, allows local, state, or federal agencies to use our data to officially document the environmental conditions in the river.

This year also marks a shift in efforts for WRWA. We have been working since 1991 to assess and document the pollution problems affecting the Westport River. Without the work done by WRWA, we wouldn't know the extent of bacteria and nutrient pollution in the river. The job of monitoring and assessing the water quality conditions in the river is no small task, but our Board of Directors decided WRWA needed to do more to clean up the river. The challenge lies in being able to either stop the source of pollution or "clean it up" before it gets into the river. The even bigger challenge is picking which problem location to work on, so that when you fix it, you'll be able to measure the improvement in water quality.

In 2006, after many years in the works, the first big project to "clean up" pollution before it reaches the river was completed. WRWA and the Buzzards Bay National Estuaries Program helped the Town of Westport to secure funding to construct a man-made wetland at the Head of Westport to treat stormwater runoff (a huge source of pollution). The work is complete for the stormwater drainage on the east side; WRWA is helping the Town secure more grant funds to "clean up" the west side stormwater drainage.

In 2009/10 more work was done to search out pollution hotspots. A grant from the Massachusetts Environmental Trust allowed us to test a direct stormwater discharge pipe that drains runoff from Main Road into the river at Westport Point. The results were interesting; the pipe was not a big nitrogen source, and the bad stuff (heavy metals and oil and grease) was almost always below detection. Bacteria levels, on the other hand, were high, and it shows that the conditional shellfish closure is warranted for the area (even if it was for another reason).

In 2010, we worked to find more locations where projects could be done to "clean up" pollution before it reaches the river. Using the Buzzards Bay National Estuaries Program's report: *Atlas of Stormwater Discharges in the Buzzards Bay Watershed*, we tested stormwater runoff for bacteria at priority sites; two spots (one on Drift Road, one on River Road), where there is direct stormwater runoff piped into the river. We are still in the data gathering phase and with our limited financial resources, we believe doing the scientific "legwork" first will help make the appropriate decisions on where to work on remedial projects, before investing more time and money. There are many more spots to test; would you like to help be a runoff detective? Email or call Roberta Carvalho at water@wrwa.com or 508-636-3016.



Untreated Road Runoff flows into a brook on Drift Road.

—Roberta Carvalho

The Footprint of a Watershed, continued

groundwater. Larger watersheds contain many smaller watersheds.

We all know that water flows downhill and carries with it whatever it touches on the way—such as pollutants. Nutrients such as nitrogen and phosphorous, bacteria, oil, gas, pharmaceuticals, and other pollutants that migrate into surface waters or ground

waters from land sources in these towns travel through the watershed, working their way towards the Westport River and ultimately Buzzards Bay. What and how much eventually reaches the bay depends on pollutant source, soil type, bedrock formation, land use, proximity to surface waters or water table, and precipitation amount and duration.

Not all water drains out of the watershed, however. Some amount is stored as groundwater or surface water, taken up by vegetation, lost as evaporation, or infiltrates the soil. This is the water budget for a watershed, and determines the capabilities of a watershed to maintain a natural balance of water vital to ecosystem health, as well as the health of our community. Land use especially influences the stability of a watershed. For example, New Bedford can be considered a sub-watershed, yet is one that, because of its large population and amount of impervious surface, produces a lot of stormwater as direct runoff into drains, which pipe directly into the bay. This also makes the city susceptible to flooding and drain overflow.

In contrast, Westport has quite a lot of open space and a relatively small population, allowing more precipitation to go back into the ground or into ponds, lakes, and streams, which act to filter the water before it reaches Buzzards Bay. Precipitation is also allowed to recharge local groundwater aquifers, which are the major sources of drinking water from wells in Westport. However, when pulses of ever increasing contaminated stormwater and groundwater are allowed to enter the Westport River or infiltrate wells, the capability of the watershed to accommodate and filter these pollutants is compromised. As a result, land use changes and practices, as well as pollutant sources, must be seriously considered throughout the watershed. No town is an island when it comes to water quality remediation. The strategies required to restore water quality or prevent degradation will be most effectively achieved through planning and implementation on the watershed level and with the cooperation and partnership of watershed towns and residents.



The Westport River Watershed (dark blue)

—Betsy White

LID By-Law, continued

Woodlands with underbrush are also supplanted with large expanses of lawn. These changes have many impacts to the natural hydrology of a site, including the ability of the stormwater to rush off, requiring some method of slowing it down and trying to replace the land's inherent ability to absorb this flow with manmade, hard structures.

Is this the best way?—No.—Best management practices now show that a better way is to not generate as much runoff in the first place.—Enter Low Impact Development.

Low Impact Development techniques use an integrated approach to site design, stormwater management, and water conservation to protect the natural terrain and hydrology of the land.

Some of the techniques are:

- Make roadways narrower and shorter if possible
- Use pervious pavements if possible
- Use vegetative drainage swales along the roadways instead of catch basins
- Don't use curbs
- Use rain barrels for roof runoff
- Share driveways
- Do not direct roof and driveway runoff onto the street
- Plant trees and other vegetation to absorb more of the water AND the nitrogen
- Use "rain gardens" instead of large retention/detention basins
- Use other smart growth techniques, such as clustered housing (OSRD)
- Encourage small building envelopes
- Leave significant areas of the parcel undisturbed if possible.
- Use site design to minimize stormwater impacts downstream

These and other smart growth techniques can enhance the quantity and quality of water which is infiltrated to recharge our aquifers instead of letting the stormwater get dumped directly into our streams, ponds and rivers.

Using these Low Impact best management practices and other smart growth techniques can have positive impacts on our environment, the quality of life, and the character of Westport. It can also potentially reduce the cost of construction and thus the cost of housing in Westport.

The Planning Board is proposing a Low Impact Development By-Law at the next Annual Town Meeting. Before this is submitted to you for a vote, the Planning Board will discuss this By-law in a Public Hearing on March 2, 2011. Please participate! Come listen and give your input on this important issue for Westport.

—Jim Whitin

2010-2011 Business Members

WRWA encourages members to patronize these local businesses that support our work and our mission.

2nd Story Theatre
A.J. Potter Jr. & Sons, Inc.
A.S. Deams
ABC Rent-A-Tent
Acoaxet Club
Acoaxet Veterinary Clinic, Inc.
Adamsville Healing Arts Center
Adamsville Wine & Spirits
Alden Hill Real Estate
Alexandria Mauck Photographic Designs
American Canine at Manypaws Pet Villa, Inc.
Amy C. Lund, Handweaver
Antiques for the Birds
Bakers Beach Associates, Ltd
BankFive
Bay-Breeze Inc./Riptide Oyster
Bayside Restaurant
Beetle, Inc.
BG Reed Landscaping
Bittersweet Farm Restaurant and Tavern
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F. E. Brayton, Jr. Auto Sales & Services, Inc.
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Fiduciary Trust Company International
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Graphix Plus
Green Gal Catering
Hair Design by Eva
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Huntington Theatre
Inner Wisdom
Janet Egan Design
JOALS Garage
Joe Camara Landscaping
Johnny's Selected Seeds
Joseph Abboud Manufacturing
Katzenbach & Company Real Estate
Kendall Associates
Lafrance Hospitality
Lapointe Insurance Agency
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Northstar Farm
Ocean's Catch, Inc.
Olio di Melli
Osprey Sea Kayak Adventures
P.M.'s Maintenance & Landscaping
Partners Village Store
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Sakonnet Bay Manor
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Sovereign Bank
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Spencer Muscular Therapy
Spindle Rock Club
Spindrift Soda
Starfish Bakery
State Representative Michael J. Rodrigues
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The Back Eddy
The Cedars Assisted Living Community
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Wicked Kickin' Savory Cheesecakes
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