

WATERSHED

A Newsletter of the Wood-Pawcatuck Watershed Association

Volume 28 No. 2

Summer 2011

Stormwater Management - What's All the Buzz About? *by Denise Poyer*

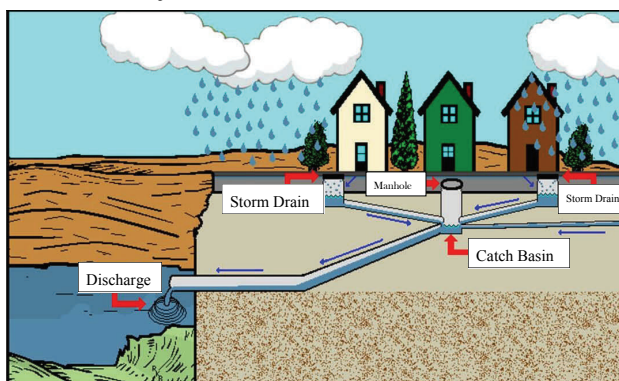
If you have been reading anything about local environmental issues lately you may have noticed that "Stormwater Management" is the new buzz phrase. So, what exactly is stormwater management and why is it important? Let's first take a moment to learn what stormwater is.

Almost all water eventually ends up in the ocean. However, it can take many different paths to get there, depending on the use of the land where it falls.

If rain falls on a forested area, it is first slowed in its descent by the leaves and branches of the trees before reaching the ground slowly. This allows some of the water to be used by plants, some to evaporate, and most of it to seep into the soil and enter the groundwater. Groundwater travels slowly to the nearest river, pond, or bay, taking days, months, or even years to reach its destination. During this time, the soil "treats" or removes pathogens and other pollutants from the water. In a forest, very little rain water ends up running over the ground.

If rain falls on a patch of grass, it moves a little faster, so some of it may run off the patch and some will seep into the ground.

If rain falls on an impervious surface, such as a road, parking lot, or rooftop, it moves quickly and has little or no opportunity to seep into the ground. Most of this water runs off into the nearest stormwater drain or wetland area. The big question that follows is "Where do the stormwater drains carry that water?"



In metropolitan areas storm drains often empty right into the nearest stream, river, or bay. Impervious surfaces cause 95% of the water that falls on them to run off; housing developments about 45%; pastures and lawns about 30%; and forests about 10%. (RI SD & IS Manual, 2010)

Why is stormwater runoff an issue? In areas that are covered with impervious surfaces there is less infiltration or groundwater recharge. This affects not only plants that tap into the groundwater, but also families

and communities that rely on wells for all their water needs. About 30% of the population of RI and 100% of the residents in the Wood-Pawcatuck Watershed depend on groundwater. (RI DEM WQ Programs) Also, the less water going into the ground, the less groundwater there is slowly seeping into our local streams, rivers, and ponds, which could alter the habitat for aquatic wildlife. This will impact the smaller streams that don't have a large volume of water.

Another consideration is that stormwater is always polluted given

what is on the surface of our lawns, fields and roads:

- fertilizer and pesticides from lawns, gardens and homes;
- bacteria from pet waste and improperly maintained septic systems;
- soap from car washing;
- debris and litter;
- Nitrogen and bacteria from livestock and agriculture;
- oil, grease, and automotive fluids;
- sand and salt from winter-time snow removal.

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From the Executive Director

The WPWA staff has worked hard over the last year to maximize efficiency and the result has been outstanding. WPWA is accomplishing more per year than at any other time in its 28 year history. While government scrambles to cut its services and raise taxes, WPWA has increased the level of services we provide without increasing our membership fees. **If there is a renewal reminder sticker attached to the outside of this newsletter it means your membership expired on June 1st 2011.** Please show your support by renewing your membership today!

Thank you for making possible, our campus renovation, the fish ladder construction at Horseshoe Falls, the new line of WPWA merchandise, removal of trees blocking the rivers, more educational and recreational programs, and improving water quality.

We will continue to leverage every dollar that you send towards obtaining grant funding. Typically, your contribution allows WPWA to apply for three times that amount in grant funding annually. While we are all financially strapped in these tough economic times, you can feel good about how far your contribution to WPWA is going and the positive effects it has on your community and quality of life.

None of these improvements would be possible without your continued financial support.



Stormwater Management

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The worst part is that none of this polluted stormwater, whether it runs overland or through storm drains, is treated. Instead, it is dumped directly into the nearest water body carrying all the contaminants it picked up on its way there. Many studies of "problem areas" in the Rhode Island have consistently pointed to stormwater as a contributing factor to poor water quality. The polluted runoff plays a large part in the closure of beaches and fishing grounds, threatens drinking water resources, harms natural areas, and contributes to flooding.

The good news is that recent federal and state regulations require many cities and towns to develop plans to treat their stormwater before it gets into a natural water body. In the Wood-Pawcatuck Watershed, municipalities such as South Kingstown and Westerly must submit a Storm Water Management Program Plan in order to receive a general permit to discharge. Besides best management practices to reduce the pollution loading from stormwater, the towns must also provide public education to community members and encourage that they participate.

WPWA has taken many steps to help the state and local municipalities with their public outreach and education goals. First, in all of WPWA's watershed education programs the issues of stormwater and its impacts to local water bodies are addressed.

Second, WPWA provides resources and watershed models to teachers for use in their classrooms, including an EnviroScape, a detailed model that provides a great visual account of what happens to pollutants in a watershed when it rains.



Educators work together to use the EnviroScape

WPWA also provides a biannual course on watershed science for teachers. This course includes activities relating to stormwater, including causes, their effects, and management options. During the most recent course, (Winter 2010-2011) Shannon McManus from URI's NEMO program gave a special presentation on RI's stormwater programs. Papers and presentations posted on the education page of the WPWA website from teachers taking the course include several lesson plans which address stormwater issues. Third, we work with many agencies in the state to contribute our outreach capabilities to teach folks about stormwater. Lastly, as part of the WPWA campus upgrade, that you read about in the last issue of *Watershed*, WPWA will be taking steps to reduce stormwater flow from Arcadia Road and the campus parking areas in order to protect the Wood River using low impact development practices.

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No discussion about storm water issues would be complete without pointing out that public participation is critical to reduce impacts. Therefore you must be wondering what you can do to help.

Around the home:

Don't dump cleaners, oils, or medicines down the drain, bring them to a proper disposal facility. Maintain your septic system; have it pumped out and inspected regularly. Switch to less toxic or "Green" cleaners.

Around the yard:

Fertilize sparingly, once a year in the fall is best.
Water only once a week, for a total of one inch of water.
Use a rain barrel to water gardens.
If you live near water, don't mow to the water's edge and consider planting a buffer.

Animal care:

Pick up after your pet, bring plastic bags with you wherever you walk your pet.
Keep livestock away from natural water sources.
Don't feed the wildlife, including waterfowl.

Car care:

Wash your car at a car wash, where they are required to treat the waste water.
If you change your own oil, remember to recycle it and the used filter at your transfer station.
Dispose of hazardous waste such as antifreeze at your state's Eco Depot.

For citations & more information about stormwater solutions & recycling visit:

<http://www.rirrc.org/resident/household-hazardous-waste/> <http://www.dem.ri.gov/programs/>
<http://www.ristormwatersolutions.org/index.html> & <http://www.epa.gov/owow/nps/toolbox/>



Upcoming Fall & Winter Events That You Won't Want to Miss!

9.23.2011 - 5:30pm - **Autumnal Equinox Paddle** - Participants will meet at the WPWA campus on Arcadia Road and launch canoes and kayaks at the handicapped accessible fishing pier on the Wood River. Appropriate for all levels of experience. Member price \$10 / Non Members \$15

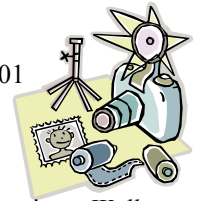


10.4.2011 - 6:30pm - **Digital Photography 101 - Knowing Your Equipment** - WPWA member and volunteer, Tom Tetzner will teach participants of all ages and backgrounds. Bring your own digital camera and

learn how to make the best use of it during this two hour class, which will focus specifically on equipment usage.

10.11.2011 - 6:30pm - **Digital Photography 101 - Lenses & Focusing** - The second in the Tetzner Photography 101 series, this class will be spent learning about lenses and focusing.

10.18.2011 - 6:30pm - **Digital Photography 101 - Composition** - You guessed it - this class is on composition!



10.15.2011 - 9:00am - **Stepstone Falls & Ben Utter Trail Hike** - Join WPWA for the first listed hike in their publication - *Walks in the Watershed*. Three miles, gentle and scenic. Proper footwear required!

10.25.2011 - 6:30pm - **Digital Photography 101 - Light** - Tom Tetzner will wrap up the series with this final photography class.

11.05.2011 - 10:00 am - **Breakheart & Shelter Trail Hike** - The second hike in *Walks in the Watershed* will take hikers on a moderate, six-mile hike in Exeter, RI. Proper footwear, blaze orange vests and plenty of stamina and good cheer required!



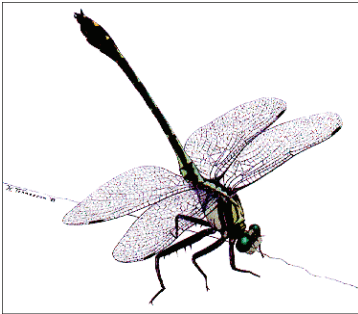
COMING IN WINTER 2011-2012 - A BIRD IDENTIFICATION PROGRAM LED BY ROGER MASSE



Pre-registration is required for all WPWA events and is easy to do online at www.wpwa.org/events.php
All Digital Photography 101 & Fall and Winter Hikes are offered to members and the public **free of charge**.
Please consider making a donation to help offset the cost to WPWA for providing these events. Thank You!

**WATERSHED
KIDS
CORNER**

This edition of WPWA's Kid's Corner features information about the insect order Odonata! Please spend a few minutes with your child to read the article and poem together!



**THE DAZZLING, DELICATE
DRAGONFLY
and DAMSELFLY, TOO!**

Have you ever noticed any dragonflies or damselflies in your yard, or perhaps while you were out exploring in nature? If you have, then consider yourself lucky! These little insects are truly spectacular!

These colorful insects have **really cool life cycles**. Once they hatch from their eggs, they spend most of their lives in the larval stage (called nymphs). During this time, they live in the water, sometimes for over five years! When the nymph is fully grown, it emerges into its adult stage - this is what we are used to seeing flying around. This change, or metamorphosis, is really neat. The nymph will crawl out of the water, usually on the stem of a plant and shed its skin (called the *exuvia*). After a short period of time, it will fly off to find food and a mate. This adult stage often lasts only about a month or two.

Which Stage is Which?

Label each with the correct number and then color!



1. Nymph
2. Adult
3. Eggs
4. Adult Emerging

Correct order: 3, 1, 4, 2

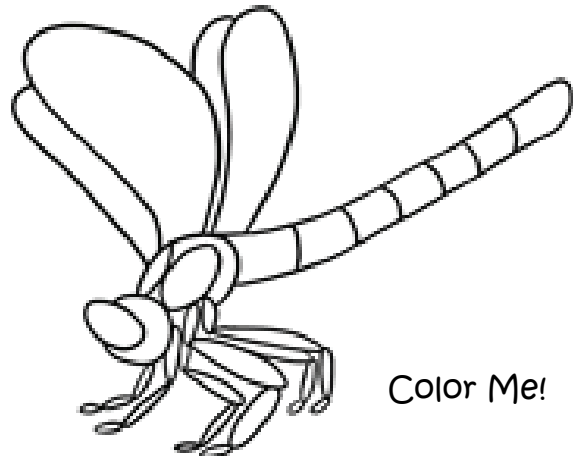
The main difference between a dragonfly and a damselfly is their wing position when they are resting. Dragonflies keep their wings spread out flat and damselflies fold their wings up. Can you decide which one the picture above is? How about the one on the bottom of the page? (Can you color it brightly?) *The answers are at the very bottom of the page.*

These insects are always eating! If you see one flying around it is probably looking for food, a mate or a place to lay its eggs. They mainly eat other insects and even mosquitoes. Isn't that awesome?

The Dragonfly

The dragonfly's a timid thing,
He's very pretty, too;
His lacy wings are clear as glass
And delicate as dew.
I don't know why the dragonfly
Has such a fearful name.
I never saw a dragon
That was nearly half as tame.

By THOMASINA WEBER



Color Me!



WATERSHED GREEN CORNER

This article is brought to you by RI NEMO - Thank You!

By Lorraine Joubert, Director, RI NEMO, URI Cooperative Extension. Produced by the RI Stormwater Solutions project, which is funded by RI DOT, in partnership RI DEM and RI municipalities. This article has been formatted by WPWA to fit this space.



Make Smart Moves as the Seasons Change

With summer sailing by and fall looming, there are a few things you can do to maximize benefits to your lawn and landscape while making this annual transition.

Late summer is vacation time for many families, and with those get-aways come last-minute checklists of items to do before taking off.

If you have automatic sprinklers for your lawn, please turn them off before you leave. Think of all the water that would be wasted if it rained the entire time you were gone! Most established lawns only need about one inch of water per week, including rainfall, so chances are good that your lawn will be just fine while you're away.

If you can't take time off or simply take a Rhode Island "day-cation", remember these all-season recommendations:

Recycle Rainwater

Rain barrels, cisterns, rain gardens – even downspout extenders – can be a great way to deflect roof runoff from hard surface (impervious) areas, where it picks up pollutants on its way to local waterways. Recycling water also helps raise groundwater levels which increases the water supply for local wells. It also provides life-sustaining water to streams and rivers where the trout will thank you.

Water Wisely

Outdoor water conservation reduces the potential for contaminants to wind up in local waters: monitor your water use: don't water in the heat of the day; limit watering to 1 inch per week; and make sure sprinklers don't hit paved surfaces. Consider letting your lawn go dormant, as established lawns will come back with fall's wet weather.



Lawn care becomes more sophisticated year-by-year, but there are some elementary rules that are always worth repeating:

A Clip Job

As you no doubt have heard from your parents or nearest and dearest, "That lawns not going to mow itself." That doesn't mean that you should furiously shave it down to the dirt! Instead, utilize this advice to maintain a healthy lawn and prevent harmful runoff at the same time:

Mow High

Ideally, never cut off more than a third of the grass blade, leaving it about 2½ to 3 inches tall. It will look marvelous, even if you can't putt on it.

Leave Clippings on the Lawn

This not only reduces your fertilizer need by 50 percent, but improves your soil quality. A two-fer! Do not put yard waste into wetlands, where it will unsafely raise nutrient levels, and can clog the natural flow of water through the wetland. Two wrongs definitely don't make it your right to dump yard waste wherever looks convenient.

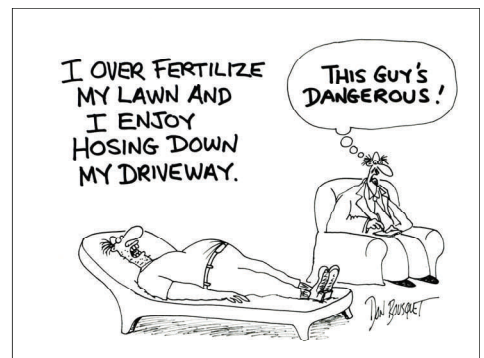
Fertilize in the Fall

If you have to fertilize your lawn at all, do it during the period from September through mid October. Most lawns need little or no fertilizer, and once just before the leaves turn colors is the ideal time as this is when grass is building strong roots for next year.

Smaller and Slower is Better

Using more fertilizer is worse, not better. Also, use slow-release fertilizer, which allows nutrients and phosphorous to stay in the soil as food for plants, rather than run off into waterways or leach into groundwater. Liquid fertilizer is not slow-release, even if it came to you dry and you were the one to mix it with water.

Continued on next page



Make Smart Moves *Continued from previous page*

Location, Location, Location

If you live near a river or stream, your main goal should be reducing the amount of phosphorous from fertilizers that reach the water. If you drink well water, or live near coastal waters – which is pretty much everyone in the Wood-Pawcatuck watershed – your main concern should be preventing too much nitrogen from getting into drinking supplies or Little Narragansett Bay.

Sweep Up Spilled Fertilizer

Anything spilled on pavement is likely to get washed into storm drains, so be sure to sweep spills back onto the lawn (where it can help) and don't hose down paved surfaces to clean them, as this causes polluted runoff (which can hurt).

Create a Buffer Zone

Do not use fertilizers (or pesticides) within 75 feet (minimum) of a waterway or wetland. Here pollutants can easily reach surface waters and cause immediate damage.

An excellent source of information is the University of Rhode Island's Healthy Landscapes Web site, at: <http://www.uri.edu/ce/healthylandscapes/> In its Healthy Lawncare and Renovation section, also look for a box that can link you to an extremely useful guide on fertilizing. This information was developed from new research specifically targeting the New England region, and is for folks who care about their landscape and minimizing stormwater pollution. (That's you, right?)

All of the above are very simple steps you can take to end up with a naturally robust and resilient lawn – one that's safe for your family and can save you money as well. For more information and ways to help prevent stormwater pollution in your neighborhood, go to: www.ristormwatersolutions.org.



Fishing Fun For EVERYONE!

As you probably already know, July is Learn To Fish Month at WPWA and thanks to some dedicated volunteers and cooperating summer weather, WPWA hosted two learn-to-fish events. The first, which took place on July 15th, was specifically for learners ages 4 to 14 and focused on the basics of fishing. The second, held on the 29th, for learners ages 14 and up, taught the art of Fly Fishing.

The first event, that took place at the Carolina Trout Pond, met each of the eleven kids and teens that partici



Audrey Craig checks that her line is stretched out to the "11 o'clock" position.

pated with success, as each one caught a fish! It was great to see everyone working together.

The second, held at the WPWA campus, had only five participants, which ended up being just right so that everyone had enough room to stretch out their long fly lines.

Special Thanks To All Who Helped make these programs a lot of fun

- Jay Boyer
- Mal Rochford
- Kim Sullivan
- Al Truchon
- Al Williams
- Hope Valley Bait & Tackle
- DEM's Aquatic Resources Education Program



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In addition to my dues, I am enclosing an extra, tax deductible, contribution of \$ _____

Checks Made Payable To: WPWA OR Circle Credit Card Type: MC / Visa

CC # _____ Exp. _____ CSC # _____ Signature of Cardholder _____

HOORAY! NEW WPWA **SHOP** ITEMS ARE IN!

Mail this completed form with your check or credit card information to WPWA.

These items will soon be available to view in full color at www.wpwa.org/shop.php

Have any special instructions or sending this as a gift? Just let us know!

Thank You so much for your order!



Description	Price	Specs	Qty	Subtotal
Carabiner Key Chain - Great for keeping keys together or using as a clip to keep important items close at hand. Laser engraving on both sides means the WPWA logo won't flake off! <i>Not For Climbing Use</i>	\$3.00	Select Color: Green Blue		
Reusable Sandwich Container - Put an end to using disposable baggies with this oversized sandwich container. The attached lid means no more searching for the right fit! Perfect for the back-to-schoolers in your home.	\$5.00	n/a		
Ball Cap - This washed twill cap is 100% cotton and has a velcro closure that tucks in on the backside, so no more hanging velcro strips! WPWA & the logo are beautifully embroidered on the front.	\$15.00	One Size Fits Most		
Green Tee - Show everyone that you support your favorite watershed organization with this 100% cotton, preshrunk short sleeve tee by Gildan. On the back is a list of our five favorite rivers in the watershed.	\$15.00	Select Size: S/M/L/XL/2XL		
Navy Polo - This classic, three-button polo is perfect for any occasion! It's a breathable blend of poly and cotton and will keep you looking good as you show your support with its high quality embroidered WPWA logo.	\$25.00	Select Size: S/M/L/XL/2XL		
Reusable Market Tote - Picking up a few groceries at the local farmer's market has never looked so good! This 100% cotton canvas bag's bottom is gusseted to ensure years of use and there is even a small zippered pocket to keep your keys and cash handy.	\$12.00	n/a		
Wood-Pawcatuck River Guide - A comprehensive fold-out map and guide to paddling the Wood and Pawcatuck Rivers.	\$5.00	n/a		
Walks in the Watershed - A pocket guide detailing 20 of the watershed's best loop hikes in southwestern RI and adjacent Connecticut.	\$5.00	n/a		
Earth Friendly Alternatives - A concise guide for anyone who wants to lessen the impacts of toxins and chemicals in and around the home.	\$7.00	n/a		
<p align="center">Shipping Rates on Order Totals</p> <p>Up to \$15: \$5 shipping Up to \$30: \$8 shipping Up to \$50: \$12 shipping</p> <p align="center">Orders over \$50 receive Free Shipping!</p>			Subtotal	
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