

Stormwater 101: Car Washing

Wash your car on the grass or at a commercial car wash!



When vehicles are washed on the street or driveway, the soap and dirty washwater flows into storm drains and ditches, which drain directly to our creeks and larger waterways. Many car washing soaps also contain chemicals that destroy the external mucous layer on fish, making them more susceptible to bacteria and parasites in the water. The chemicals in soap can also promote excessive aquatic weed and algae growth in our waterways.

What can you do to stop this type of water pollution? It's simple!

- ◆ Wash your car on the grass to let the soap and dirty water be filtered naturally by the soil. Doing this will not harm the grass!
- ◆ Purchase phosphate-free car wash soaps and detergents.
- ◆ Use a commercial car wash establishment. The dirty water is sent to the wastewater treatment plant or is recycled on-site.



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Newly-Installed Stormwater Wetlands Aid Hewletts Creek & Burnt Mill Creek

A 17-acre tract of land located in the **Hewletts Creek Watershed**, formerly known as the Dobo property, has been transformed into an almost 12-acre stormwater wetland with plans for a passive City park on the site.

The wetland, designed to help improve water quality in Hewletts Creek and reduce flooding in the area, provides treatment of stormwater runoff from an approximate drainage area of 590 acres, easily making this the largest man-made stormwater wetland in the area. The wetland enhances downstream water quality by using soil and vegetation to filter nutrient and bacterial pollution from stormwater runoff.



The property was originally purchased by New Hanover County, based on recommendations from the New Hanover County Tidal Creeks Program (now known as the Watershed Management Advisory Board). The NC Clean Water Management Trust Fund (CWMTF) agreed to provide roughly \$2.76 million in funds for construction and monitoring. The City provided \$576,000 in matching funds, and the County provided \$240,000 in funding for design and permitting services.

Plans for the passive park include walking trails and picnic shelters and will also serve as an outdoor educational facility. Hewletts Creek is classified as an SA, or Shellfish Harvesting Water, but most of the creek is currently closed to shellfishing due to pollution. UNCW will continue to monitor the effect the wetland has on the water quality of the creek.



In May, local residents, along with Stormwater Services, NCSU,

and Cape Fear River Watch planted a new stormwater wetland in Mary Bridgers Park in the **Burnt Mill Creek Watershed**. Residents in the surrounding neighborhood assisted in designing the wetland. B+O Design Studio also donated their services to help design & landscape the wetland to fit in with the nearby neighborhood.

The wetland is part of an ongoing project that aims to improve the health of Burnt Mill Creek and is funded by an EPA (Environmental Protection Agency) grant. The main goals are to 1) reduce stormwater pollution in the watershed by installing stormwater Best Management Practices (BMPs), such as wetlands and rain gardens, and 2) educate watershed residents about stormwater pollution prevention.

Several grant-funded BMPs have already been installed in the watershed, including rain gardens at Port City Java on Market



Street, Gregory Elementary School, Anderson Tabernacle Church, and in resident's backyards throughout the Bottom Neighborhood.

Permeable pavement and rain gardens have also been installed at the Wilmington YMCA and a stormwater wetland was installed at Stonestrow Townhome Condominiums. NCSU and UNCW are monitoring the effect of these BMPs on the water quality and health of Burnt Mill Creek.

Stormwater Watch Newsletter

2007 Summer Issue

Stormwater Services

Stormwater Services maintains and improves the public drainage system for the protection of our community and the environment.

Save the Dates!
Stewardship Development
Award application deadline:
July 31st
www.stewardshipdev.com
Big Sweep Clean-Up
Saturday, Sept. 29, 2007
Call 798-4404 to volunteer!

*This newsletter is printed on 100% post-consumer recycled fiber. Processed chlorine-free. Forest Stewardship Council certified. Made with windpower.

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Keeping Up With the Flow: The Manual Ditching Crew

In Wilmington, stormwater runoff is channeled through a complex, interconnected system of storm drains, pipes, ditches, ponds, culverts, creeks, and stormwater BMPs like bioretention areas and constructed wetlands. Maintenance of the storm drainage system is comprehensive and consists of four primary areas:

- ◆ Open Drainage
- ◆ BMP Maintenance
- ◆ Closed Drainage
- ◆ Street Sweeping

In the Open Drainage section, the Manual Ditching Crew is responsible for maintaining the flow of stormwater through open drainage routes such as ditches, swales, creeks, lakes, and ponds. Specific maintenance activities include routine mowing, pruning ditches, clearing trash/debris, and erosion control activities like stabilizing washouts on streambanks. Crew members are also charged with re-setting storm drains that have become dislodged throughout the City, mainly due to heavy vehicles and traffic.

The Manual Ditching Crew consists of George Patrick, Mike Richardson, Ivory Myers, Kahan Qatazap, Vincente Munroe, Michael Eason, and Stanley Montgomery. Satisfaction for this crew comes from solving problems out in the field and seeing the positive results of their efforts. "I swell with pride maintaining a vital system for the City of Wilmington," says Kahan Qatazap. "We're happy to see a job well done and the water flowing properly."

The crew confronts many challenges while working in the field, such as effect that beavers have on the storm drainage system. Crew members can clear a ditch of debris and come back the following week to find a beaver dam blocking the flow of water in same ditch.

Another challenge the crew faces is the lack of understanding on the part of homeowners who discard trash, debris, and yard wastes into ditches, creeks, and other drainage routes. "I think people are unaware of the damage they cause by doing such things as throwing leaves in the ditch," says George Patrick. "It's not until their or their neighbor's property is flooding do they realize they've caused a problem."

It's not good for water quality either because nutrients, fertilizers, and pesticides attached to yard wastes can cause algal blooms and impact aquatic habitat once it reaches our waterways. "Homeowners need to understand their impact on the drainage system. Everything flows from yards and streets through ditches and storm drains and straight to our waterways", says Mike Richardson." On occasion, the crew has even had to remove couches and other large items that have been carelessly discarded into drainage ways.

Temporary easements are an important tool for the Manual Ditching Crew. At times, they are unable to complete a job because they aren't granted a temporary easement to access private property. It's frustrating for the crew and nearby property owners because they can do only part of a job, but not all of it due to access constraints.

The crew is considered "essential personnel" during hurricanes meaning they are out in the field maintaining the system during storm events. During one hurricane, crew members responded to a citizen request and found themselves in knee deep water which quickly rose to their chests. On other occasions, the crew goes into areas inhabited by water moccasins, beavers, waterfowl, and other wildlife. They like seeing "nature do it's job everyday" but also state that "the greenery is leaving the City very fast."

When asked what people should appreciate about the job they do, many responded by saying they appreciate when citizens say "thank you" for their efforts and realize they are doing the best job they can everyday. For safety reasons, they also appreciate when vehicles slow down and respect them when they are doing work in or near the roadway.



Save Water, Save Money, Save Our Sewers (S.O.S)

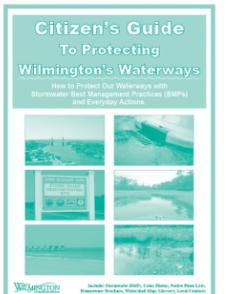


Water is arguably our most valuable resource. Unfortunately, most of North Carolina is experiencing drought conditions this summer, and the Wilmington-area is no exception. With little rainfall and an over-burdened (sanitary) sewer system, the need to conserve and limit water usage is essential, both indoors and out.

In addition, conserving water has positive benefits for our creeks and waterways when you consider that recent sewer spills have directly impacted these waterways. Reducing water use is good for us, our sewer system, and the environment.

The following are **Water Conservation Tips** which offer proven ways to conserve water outdoors:

- ◆ Water your lawn in the evening or very early morning, when temperatures are cooler, to minimize evaporation. Do not water your lawn or garden in the afternoon.
- ◆ Avoid watering on windy days or within two days of rain. You're just wasting water.
- ◆ Water the landscape, not the street, sidewalk, or driveway. Adjust sprinklers if necessary.
- ◆ Use a broom instead of a hose to clean off your driveway or sidewalk. Save up to 80 gallons of water every time. This keeps yard waste and dirt out of the storm drainage system too!
- ◆ You're more likely to notice leaks indoors, but don't forget to check outdoor faucets, sprinklers, and hoses.
- ◆ Install an automatic rain sensor on your irrigation system. This inexpensive, highly effective device will automatically shut-off your irrigation system during rain events.
- ◆ Use a hose nozzle and turn off the water while washing your car. Save more than 100 gallons each time.
- ◆ Use a rain barrel or milk jugs to collect rainfall which can be used to water plants. Rainwater is free and plants like it because it's chemical-free.
- ◆ Plant drought-tolerant native plants to reduce irrigation needs. Native plants are adapted to this region, require much less water, and generally don't require pesticides and fertilizers.
- ◆ Download the **Citizen's Guide to Protecting Wilmington's Waterways** to find extensive native plants lists for Southeastern NC and info about rain barrels. <http://www.wilmingtonnc.gov/publicservices/stormwater>.



WATER FACTS:

- ◆ Wilmingtonians use an average of **138** gallons of water a day! If everyone used **5 gallons less** each day, we could save over **200** million gallons annually!!
- ◆ Nearly 97% of the world's water is salty or otherwise undrinkable. Another 2% is locked in ice caps and glaciers. That leaves just 1% for all of humanity's needs - all it's agricultural, residential, manufacturing, community, and personal needs.
- ◆ Water is composed of two elements, 2 parts hydrogen and 1 part oxygen (H₂O).
- ◆ There is the same amount of water on the Earth now, as when it was formed. The water from your faucet could contain molecules that dinosaurs drank.
- ◆ Water regulates the Earth's temperature. It also regulates the temperature of the human body, carries nutrients and oxygen to cells, cushions joints, protects organs and tissues and removes wastes. 75% of the human brain is water; 70% of your skin is also water.
- ◆ Water is part of a deeply interconnected system. What we pour on the ground, ends up in our water and what we discharge into the air, eventually ends up in our water. Adapted from Tulsa County Blue Thumb Water Quality Education Project