CITY OF WILMINGTON

Stormwater Watch

PUBLIC SERVICES DEPARTMENT STORMWATER Summer 2010

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Questions?

Stormwater Services Division

Administration	343-4777
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Stormwater Pollution Prevention Hotline 341-1020

or: wilmingtonnc.gov/reportstormwaterpollution

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Stormwater pollution prevention hotline

Local residents can now call the Stormwater Pollution Prevention Hotline to report water pollution in the City of Wilmington. The city relies on reports from residents to address water quality problems in our community. Examples of problems to report include:

~ Oil, paint, and other chemicals leaking or draining into storm drains or creeks
~ Wastewater piped to a creek or ditch (i.e. from a washing machine, floor drain)
~ Washing equipment outdoors using chemicals or dumping mop water onto pavement
~ Pumping chlorinated swimming pool water into the street, ditch, or storm drain
~ Foam, excess bubbles, a chalky or milky appearance in a ditch, creek or waterway
~ A strange odor coming from a storm drain

When a hotline report is received, a code enforcement officer investigates the complaint. Staff will visit the site to determine if a violation has occurred and try to identify the source of pollution and the responsible party. The responsible party is notified and advised on how to contain and cleanup the pollution. Depending on the severity of the problem, a notice of violation may be issued and the responsible party may receive a fine. Hotline calls can be made anonymously, however it is

helpful for the city to obtain the reporter's contact info in case we need to get more information or follow-up.

When making a report, please provide as much information as possible, including date, time of incident, location, source and type of pollution if known, responsible party, and your contact information.

Hotline: 341-1020
wilmingtonnc.gov/reportstormwaterpollution

Stormwater pollution flows directly into where we fish, where we swim, and what we drink.

Everything that goes into our storm drains - pet waste, fertilizer, pesticides, litter, yard debris, dirt, etc. - makes its way straight to our waterways. Stormwwater pollution is our biggest source of water pollution. Be part of the solution to stormwater pollution!

What goes in here...

...ends up here.

The State of Wilmi
2009 UNCW Surface
(a summary of the current health and condition of m

Water Classifications

The State of North Carolina applies classifications to waterways which define the best uses to be protected within those waters (i.e. swimming, fishing, drinking water supply). These classifications have an associated set of water quality standards to protect their designated uses. These standards may be designed to protect water quality, fish and wildlife, the free flowing nature of a stream or river, or other special characteristics.

In addition, there may be a supplemental classification applied to protect several different uses or special characteristics within the same waterway. Listed below are the freshwater and saltwater classifications that apply to Wilmington's waterways. For more information, visit: http://h2o.enr.state.nc.us/csu/.

Freshwater Classifications

Class C Waters protected for secondary recreation (fishing, boating and other activities involving minimal and infrequent skin contact), wildlife, agriculture, fish and aquatic life propagation and survival.

Saltwater Classifications

Class SA Saltwaters used for commercial shellfishing and marketing purposes, and all SB and SC uses. All SA waters are also High Quality Waters (HQW) by definition.
Class SB Saltwaters used for primary recreation such as swimming, and all SC uses.
Class SC Saltwaters protected for secondary recreation, wildlife and aquatic life propagation and survival.

Supplemental Classifications

Swamp Waters (Sw) Waters that naturally have low flow, low pH, and low dissolved oxygen.
High Quality Waters (HQW) Waters rated excellent based on biological, physical, and chemical characteristics and having primary or functional nursery areas.
Outstanding Resource Waters (ORW) Unique and special waters with excellent water quality and/or having national, ecological, or recreational significance.

Status

NC 303(d) List of Impaired Waters
Section 303(d) of the Clean Water Act requires states to develop and update a list of waters that do not meet water quality standards or which have impaired uses. Unfortunately, many of Wilmington's waterways are on this list because of factors such as bacteria, sediment, and nutrients carried by stormwater runoff into our waterways.

Entire stormwater quality report can be read at: www.uncw.edu/cmsr/aquaticecology/laboratory/

Cape Fear River

Watersheds that drain to Cape Fear River

Smith Creek

Size of watershed: 13,896 acres
State classification: C, Sw
Status: Impaired
Reason: Very poor biological integrity
UNCW Sampling Summary:
UNCW sampled only one station on Castle Hayne Road, and there were no violations of NC water quality standards.

Burnt Mill Creek

Size of watershed: 4,252 acres
State classification: C, Sw
Status: Impaired
Reason: Poor biological integrity
UNCW Sampling Summary:
This creek has very poor water quality, with large algal blooms in the lower portion of the creek and frequent high fecal coliform levels. Creek sediments are polluted by PAHs at levels known to be harmful to aquatic life.

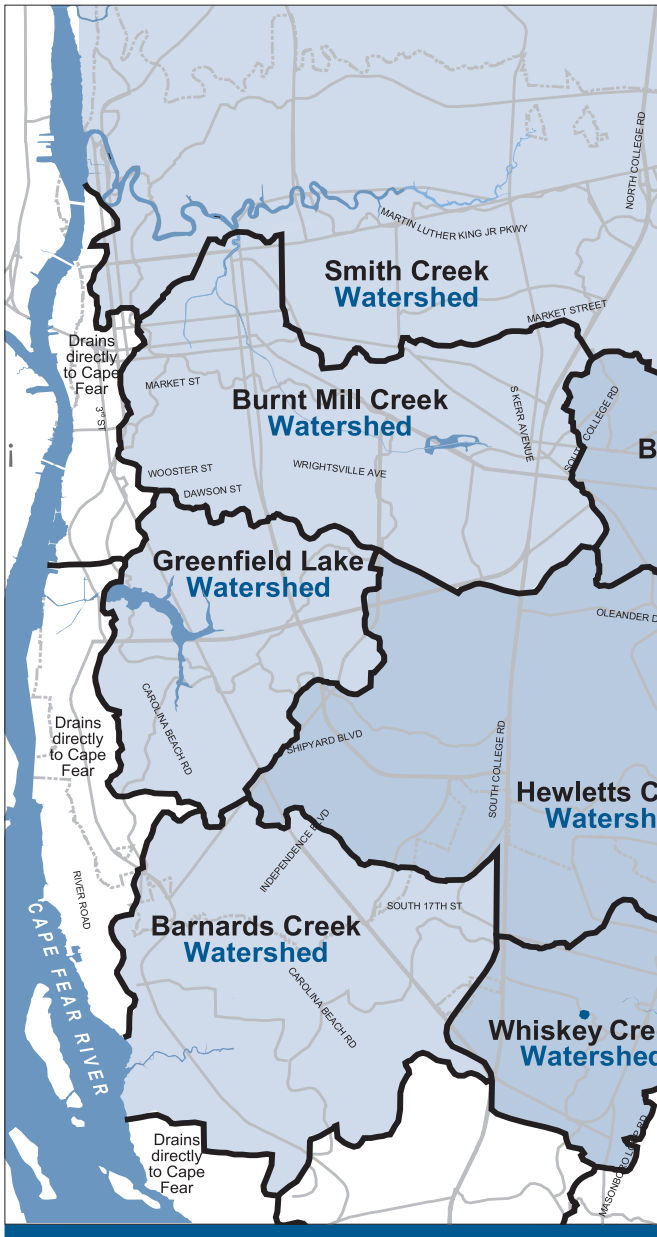
Greenfield Lake

Size of watershed: 2,551 acres
State classification: C, Sw
Status: Impaired
Reason: Nutrients entering lake, aquatic weeds/algae
UNCW Sampling Summary:
Tributaries into the lake had problems with severe low dissolved oxygen. The main lake had problems with algal blooms and high fecal coliform bacteria, but had mostly good DO levels.

Barnards Creek

Size of watershed: 4,161 acres
State classification: C, Sw
Status: Currently supporting use
UNCW sampling summary:
One station, on River Road, was sampled showing no real problems with turbidity or algal blooms, however low DO and high fecal coliform bacteria levels impact this creek.

The State of Wilmington's Waterways, 2009 UNCW Surface Water Quality Report is a summary of the current health and condition of the major creeks that fall within Wilmington's city limits. UNCW water quality sampling information was provided by Dr. Michael Mallin of the UNCW Center for Marine Science and lead scientist for the Wilmington Watersheds Project. Each water quality sampling summary is based on data collected between the months of January-December 2009 and is



UNCW Results Summary:
It is important to note that the four creeks with the worst water quality als impervious (hard) surface coverage - Burnt Mill Creek, Greenfield Lake, S

Clearly, the number one pollutant impacting area waterways is fecal colif extensive closures of shellfish beds for harvest.

ngton's Waterways
Water Quality Report

ajor creeks, not drinking water, within the City limits)

presented from a watershed perspective, regardless of political boundaries.

The summary describes each watershed, by size, state classification, status, reason for impairment and sampling summary. For more information on the current health of Wilmington's waterways and to read Dr. Mallin's entire report, please visit: www.uncw.edu/cmsr/aquaticecology/laboratory/

so have the most developed watersheds with the highest amount of Smith Creek, and Bradley Creek.

orm bacteria, which has led to posted warnings for human contact and

Intracoastal Waterway

Watersheds that drain to Intracoastal Waterway

Howe Creek
Size of watershed: 3,518 acres
State classification: SA, ORW
Status: Impaired, closed to shellfishing
Reason: Fecal coliform bacteria
UNCW sampling summary:
On occasion there are problems with algal blooms, but the primary problem is high fecal coliform bacteria. Fecal bacteria pollution in stormwater runoff has resulted in shellfish bed closures in this creek.

Bradley Creek
Size of watershed: 4,631 acres
State classification: SC
Status: Currently supporting use
UNCW Sampling Summary:
In 2009, there were no problems with algal blooms or high turbidity, but high fecal bacteria counts impact the upper creek's sampling stations. It is noted that construction activity has been ongoing upstream in this creek.

Hewletts Creek
Size of watershed: 7,435 acres
State classification: SA, HQW
Status: Impaired, closed to shellfishing
Reason: Fecal coliform bacteria
UNCW Sampling Summary:
Minor problems with low DO, but no major algal blooms occurred. High levels of fecal coliform bacteria pollute this creek. Problems in this creek have resulted from polluted stormwater runoff and sewer leaks and spills.

Whiskey Creek
Size of watershed: 2,095 acres
State classification: SA, HQW
Status: Impaired, closed to shellfishing
Reason: Fecal coliform bacteria
UNCW Sampling Summary:
One station was sampled on Masonboro Loop Rd. There were minor problems with low DO, but no problems in 2009 with turbidity, fecal coliform, or algal blooms.

Water Definitions

Algal Bloom Rapidly occurring growth and accumulation of algae in a waterway resulting from excess nutrients that can lead to low dissolved oxygen levels and fish kills. (Sources: fertilizers, grass clippings, pet waste)

Best Management Practice (BMP) A practice or landscape modification that reduces the amount of pollution and/or the quantity of stormwater flowing into waterways. BMPs can be structural, such as rain barrels or shoreline buffers, or non-structural, such as picking up after your pet.

Dissolved Oxygen (DO) The amount of oxygen available in water. Fish and aquatic organisms require adequate levels of DO to survive.

Fecal Coliform Bacteria Bacteria present in the intestines and feces of warm-blooded animals. High levels of fecal coliform bacteria in a waterway indicate the presence of other disease-causing pathogens which can cause sickness and disease in humans. (Sources: pet waste, sewer overflows, septic system failure)

Hypoxia Low DO levels in a waterway; can result in fish kills. Algae blooms can cause hypoxia.

Nutrients Substances needed by plants and animals for growth (i.e. nitrogen and phosphorous), however, excessive nutrients in a waterway can lead to harmful aquatic weed and algae growth, low DO levels and fish kills. (Sources: fertilizers, pet waste, yard waste)

Pathogens Disease-causing organisms such as bacteria and viruses. (Sources: pet waste)

PAHs (Polycyclic Aromatic Hydrocarbons) Chemicals that are produced by burning fossil fuels, which can be toxic to humans and aquatic life and can persist in the environment for a long time. (Sources: auto exhaust, parking lot sealcoats, roofing tars, coal power plants, cigarette smoke)

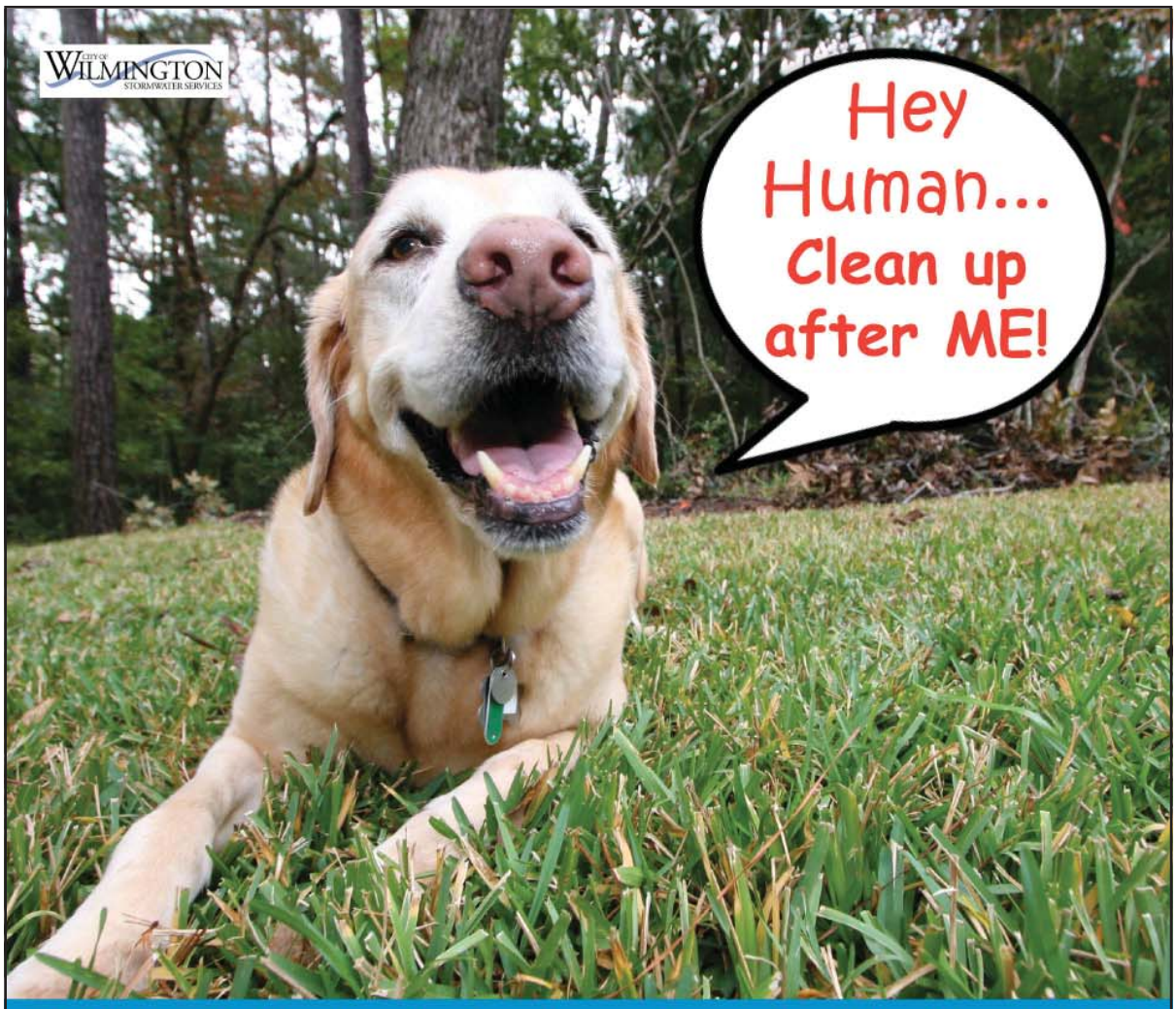
Sediment Particles of silt, clay, dirt, or sand that wash into waterways as a result of land-disturbing activities or natural weathering. Sediment is the #1 water pollutant in NC and can settle to the bottom or remain suspended in water. (Sources: construction sites with failing sediment/erosion control, eroding streambanks, and exposed soil)

Tidal Creek A saltwater creek that is influenced by tides. Many tidal creeks have oyster reefs along their shorelines.

Turbidity A cloudy condition in water caused by suspended sediment.

Watershed An area of land that drains into a specific body of water such as a creek, lake, or river.

Stormwater Watch



Did you know? Leaving pet waste on the ground causes harmful bacteria and nutrients to wash into our waterways when it rains. This bacteria can make humans really sick too!

- **Clean up after pets on any public property** (streets, sidewalks, parks, etc)
- **Always carry a clean-up device** (bag, scooper) **and be able to show it to a Code Enforcement Officer**
- **Dispose of pet waste in a closed trash can or refuse container**
- **Do not flush animal waste down the toilet** (CFPUA Ordinance)
- **IT'S THE LAW!! Fines are $250 for non-compliance**

It's your Doody!

Be a Good Neighbor...Clean up after your pet!

Questions? Call City of Wilmington - Stormwater Compliance at 341-0092