

Stormwater Watch

PUBLIC SERVICES DEPARTMENT

STORMWATER SERVICES

Spring 2011

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UNCW Surface Water Quality Annual Report

Questions?

Stormwater Services Division

Administration 343-4777
 Drainage/Maintenance 341-4646
 Billing Questions (CFPUA) 332-6550

Stormwater Pollution
 Prevention Hotline 341-1020

or: wilmingtonnc.gov/reportstormwaterpollution

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Canines for Clean Water

Our pets can be beloved members of our families, but their waste is a serious water quality and public health threat. When it rains, uncollected pet waste is washed directly into local waterways with no treatment.

Bacteria, viruses and parasites in pet waste can make surface waters unsafe for activities such as swimming, fishing, shellfishing and drinking. Pathogens in pet waste can make humans sick with diseases and infections such as salmonella, e. coli, giardia and roundworm.

Did you know?

Pet waste is one of the leading causes of pollution in our waterways. Learn how you can help.

Nutrients in pet waste harm our waterways because they produce algae and aquatic weeds which uses up the oxygen that fish and aquatic life need to survive.

A new program called Canines for Clean Water encourages dog owners to



sign a pledge promising to clean up and properly dispose of pet waste.

Pet owners receive a Canines for Clean Water bandana, dog treats and other program materials. Once a pledge is signed, pet owners can then submit a photo of their pet to the online Canines Photo Gallery.

Canines for Clean Water participates in several pet-related events during the year, giving pets and their owners the opportunity to make a difference for clean water.

Information:


For more information about Canines for Clean Water and upcoming events, please visit:
wilmingtonnc.gov/canines



Canines for Clean Water

Pick up after your pooch...it's your "DOODY"!

Protect your health, your waterways, your shoes!

wilmingtonnc.gov/canines 

The NC Division of Water Quality applies classifications to waterways which define the best uses to be protected within those waters (i.e. swimming, fishing, drinking water supply, aquatic life). 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://portal.ncdenr.org/web/wq/ps/csu>

Freshwater Classifications

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

Supplemental Classification

Swamp Waters (Sw) Waters that naturally have low flow and other characteristics which differ from creeks draining land with steeper topography.

Saltwater Classifications

Class SA Saltwaters used for commercial shellfish harvesting, primary recreation such as swimming and all 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 (such as fishing, boating and other activities involving minimal skin contact) and fish/aquatic life propagation and survival.

Supplemental Classifications

High Quality Waters (HQW) Saltwaters rated excellent based on biological, physical, and chemical characteristics and having primary or functional fish habitat and nursery areas.

Outstanding Resource Waters (ORW) Unique and special salt waters with excellent water quality and/or having national, ecological, or recreational significance and outstanding fish habitat.

Status /Reason

Indicates whether or not a creek is supporting its State classification and the reason why.

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 have impaired uses. Unfortunately, several of Wilmington's waterways are on the North Carolina 303(d) list because of pollution such as bacteria and nutrients.



Cape Fear River

Watersheds that drain to Cape Fear River

Smith Creek

Size of watershed: 13,896 acres
State classification: C, Sw
Status: Currently supporting use
Reason: Meets standards for ecological/biological integrity, fecal coliform and aquatic life.
UNCW Sampling Summary: UNCW sampled only one station on Castle Hayne Road. Conditions were generally good except for occasional elevated fecal coliform bacteria levels.

Burnt Mill Creek

Size of watershed: 4,252 acres
State classification: C, Sw
Status: Impaired, on 303(d) list
Reason: Poor ecological and 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 with PAHs, lead, zinc and mercury at levels known to be harmful to aquatic life.

Greenfield Lake

Size of watershed: 2,551 acres
State classification: C, Sw
Status: No current rating
Reason: Inconclusive data from state
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
Reason: Meets standards for ecological/biological integrity
UNCW sampling summary: One station was sampled on River Road which showed algal blooms and high fecal coliform bacteria levels impacting this creek.

The State of Wilmington's Waterways 2010 UNCW Surface Water Quality Report

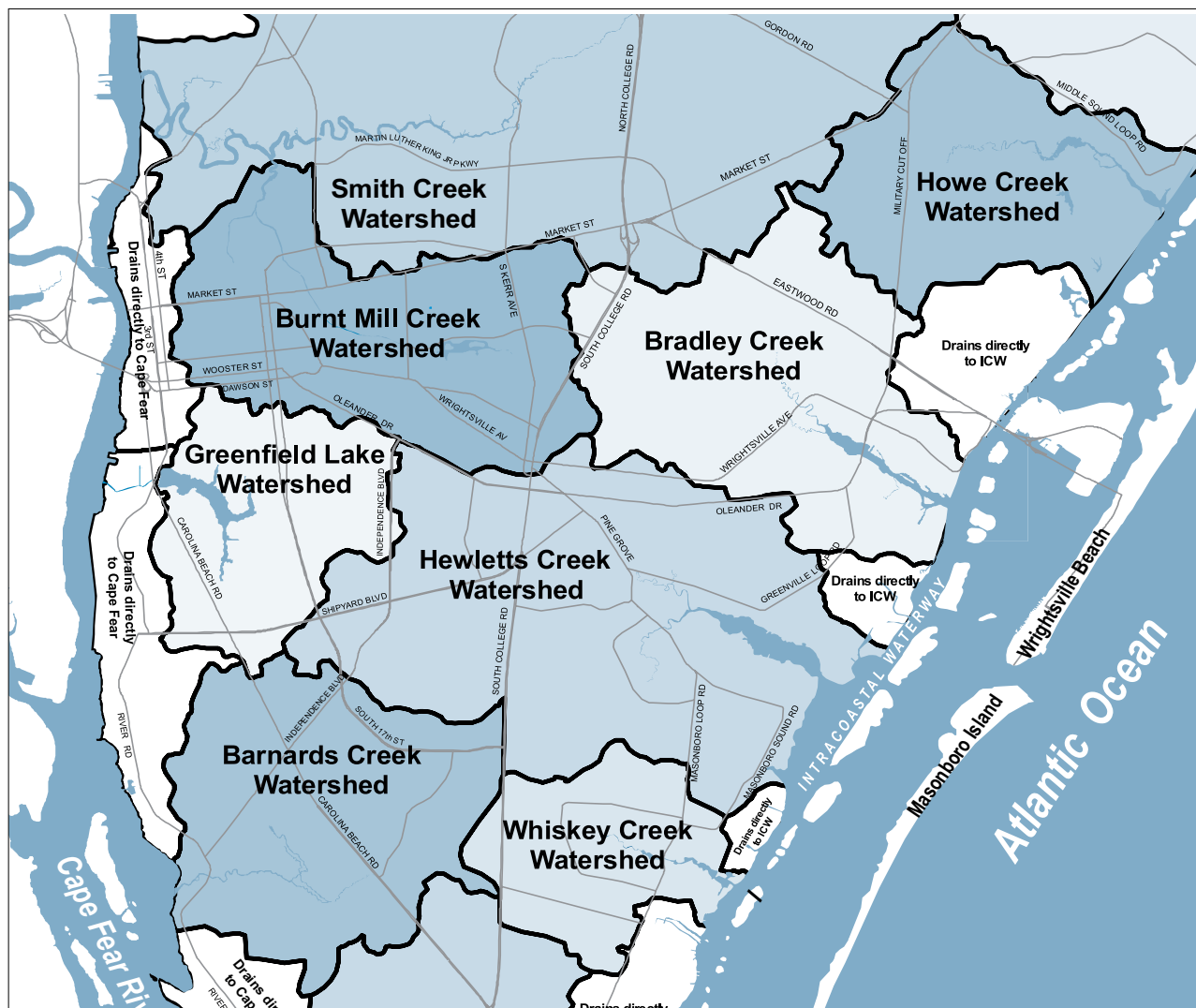
(A summary of the current health and condition of major creeks and waterways, not drinking water, within the City limits)

The State of Wilmington's Waterways, 2010 UNCW Surface Water Quality Report is a summary of the current health and condition of the major creeks and bodies of water 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 August and December 2010

and is presented from a watershed perspective, regardless of political boundaries.

The summary describes each watershed, by size, state classification, current 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/aquaticceology/laboratory



UNCW Results Summary:

Fecal coliform bacterial contamination continues to be the number one pollutant impacting Wilmington watersheds. It is notable that all of the tidal creeks (which drain to the Intracoastal Waterway) in the city limits are closed to shellfishing due to these high bacterial counts. Watersheds with the highest levels of development are also those that are most polluted, including Burnt Mill Creek, Greenfield Lake and Bradley Creek.

In addition, North Carolina has listed all waters in the state as impaired for mercury due to high levels found in the tissues of several fish species.



Intracoastal Waterway

Watersheds that drain to Intracoastal Waterway

Howe Creek

Size of watershed: 3,518 acres
State classification: SA, ORW
Status: Impaired. On 303(d) list and closed to shellfishing
Reason: Fecal coliform bacteria
UNCW Sampling Summary: On occasion, there are problems with algal blooms and low dissolved oxygen, but the primary problem continues to be high fecal coliform bacteria pollution in the upper and middle portions of the creek.

Bradley Creek

Size of watershed: 4,631 acres
State classification: SC
Status: No current rating
Reason: Inconclusive data from state
UNCW Sampling Summary: There were no problems with algal blooms or high turbidity, but high fecal bacteria counts impacted the upper creek and there were minor dissolved oxygen problems.

Hewletts Creek

Size of watershed: 7,435 acres
State classification: SA, HQW
Status: Impaired. On 303(d) list and 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 polluted three of five sampling stations in this creek. Problems in this creek have resulted from polluted stormwater runoff and sewer leaks/spills. Creek sediments were not polluted by metals or other toxic compounds.

Whiskey Creek

Size of watershed: 2,095 acres
State classification: SA, HQW
Status: Impaired. On 303(d) list and 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 otherwise good water quality.

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

Best Management Practice (BMP) An action or landscape modification that reduces the amount of pollution and/or the quantity of stormwater flowing into waterways. BMPs can be non-structural such as picking up after your pet, or structural such as a rain barrel or rain garden.

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 dissolved oxygen levels in a waterway which can result in fish kills. (Source: excess nutrients, algal blooms)

Nutrients Substances needed by plants and animals for growth (i.e. nitrogen and phosphorous). 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. Can be toxic to humans and aquatic life and 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



- 1) Prevent yard waste, sediment, trash, or debris of any kind from entering the storm drainage system
- 2) Keep all ditches and drainage ways clear of obstructions so stormwater can flow freely

**OR YOU COULD RECEIVE A
\$250 FINE!**

PLEASE BE RESPONSIBLE FOR PROPER DISPOSAL OF DEBRIS

Debris clogs the stormwater drainage system and pollutes our waterways.

DO:

- Blow yard waste back onto a landscaped area, not into the street or storm drain.
- Collect and contain yard waste for city collection service.
- Grasscycle! Grass clippings can stay on the lawn to provide nutrients and moisture to the soil and reduce the need for fertilizer.
- Compost yard waste and use material in landscape beds.
- Keep all drains, drainage ditches, and drainageways free of obstructions.

DO NOT:

- Do not blow, sweep, dump, direct or place yard debris, sediment, or trash into any street, storm drain, ditch, pond, creek, waterway, etc.
- Do not put yard waste in the regular trash; it is not allowed in NC landfills.

Only rain down the storm drain!



Hotline: 341-1020

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