



# STORMWATER steward

A Stormwater SMART publication

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at a  
glance

WHAT TO DO WITH  
DOGGY DOO  
COMPOSTING YOUR PET  
WASTE



RUNOFF RUNDOWN:  
RAIN GARDENS



CLIMATE CHANGE &  
NATURAL DISASTERS



CHANGING CLIMATE IN  
NC AND IMPACTS ON  
WATER



GET INVOLVED:  
FOUR WAYS YOU CAN  
MAKE A DIFFERENCE



UPCOMING EVENTS

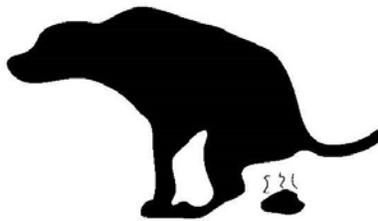


PIEDMONT TRIAD  
REGIONAL COUNCIL

## WHAT TO DO WITH DOGGY DOO: COMPOSTING FOR YOUR PET

### What to do with doggy doo?

People typically compost items such as left-over food, coffee grinds, nut and egg shells, and newspaper. But did you know you can also compost your pet waste? Composting removes raw waste from the environment where it could pollute local bodies of water. Good composting destroys pathogens and produces a quality soil additive that improves the physical condition and fertility of the soil.



### Why is it important to pick up after my pets?

In the Piedmont Triad, there are approximately 404,480 dogs. That equals about 133,478 pounds of dog poop each day. When you add that up, that's about 48,719,616 pounds of raw sewage per year. Pet waste is a big source of pollution. When it rains, stormwater runoff picks up that pet waste and can carry it to lakes, rivers, and streams. Even if you don't live near a body of water, pet waste can be transported through storm drains.

### What's the big deal?

Dog waste contains harmful bacteria, such as *E. coli* and giardia. Decaying pet waste takes in oxygen and can release ammonia into the water.



In addition, nutrients from pet waste, such as phosphates and nitrates, can cause algal blooms. These algal blooms take away oxygen from fish and other aquatic life.

### What do I do?

Always bring a bag with you when you walk your dog(s) and dispose of waste in the proper place. You can throw it in the trash or compost it! Regularly remove pet waste from your yard to keep our water clean.

## 5 EASY STEPS FOR COMPOSTING YOUR PET WASTE

1. Choose a dry, sunny spot near the dog area for your compost bin. Your bin can be a trash can, a wire cylinder, or another type of container\*. Keep in mind that this area should not be near pregnant or nursing dogs, or where runoff from the compost pile could flow into the yard.

2. For every two shovels full of dog waste, add a shovel of sawdust or other carbon source (fallen leaves, chopped straw or hay, shredded newspaper, dog bedding). Mix thoroughly. Add water in small amounts until the compost mixture is as moist as a wrung-out sponge.

3. Continue to add material, alternating between waste and carbon source, until the compost is two to three feet deep.

4. Once bin is full, stop adding materials. Place a cover over the compost mixture. Microbes will

breakdown the organic material, releasing heat as they work.

5. Turn the entire compost pile every two weeks to ensure that all the materials reach the high temperatures needed to kill pathogens. After several cycles, the compost will no longer heat up. This indicates that the compost process is complete.

\*If you wish to have a compost pile that requires less maintenance, leave the bottom of your bin open so that the bottom is the soil/ground way, the compost breaks down and you can continue to add to it without having to turn the materials regularly. However, when you wish to use the soil from the compost pile, you will have to dig down to the bottom of your bin to access it.

For more information, visit: [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_035763.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_035763.pdf)

## Did you Know?

Stormwater runoff picks up heat, break pad dust and other pollutants.



Sediment is the #1 pollutant in NC rivers.



The first inch of rain picks up most of the pollution that is on the surface of lawns, roads and parking lots.



Rain gardens reduce the amount of nutrients in the runoff by 50%



Because lawns are compacted they will only absorb 10% of the rain that falls on them.



Rain gardens increase infiltration by 30-40% compared to the lawns they replace.

## RUNOFF RUNDOWN: RAIN GARDENS

### What is a Rain Garden?

A rain garden is a shallow depression that collects a few inches of rain water and allows it to be absorbed into the ground of by plants, instead of running off directly into streams and lakes. Plants and soil trap, absorb, and filter pollutants found in stormwater runoff, including fertilizers, pesticides, metals, and pet waste.

Rain gardens help us:

- Improve water quality
- Increase the amount of water that filters into the ground, therefore recharging the aquifer
- Prevent flooding, erosion and drainage problems
- Protect streams and lakes from pollutants carried by urban storm-



A Piedmont Triad rain garden in action. during the first rain after installation. Photo courtesy of Dr. Leister

water

- Provide valuable habitat for birds, frogs, butterflies and beneficial insects
- Enhance the beauty of our communities

### Location Matters

Rain gardens can be located to capture and treat rooftop runoff before the gutter waters the street and the shingle debris ends up in a stormdrain. They can also be used treat driveway or road runoff and remove the oil, grease and brake dust before the water enters the groundwater or stream, river or lake. Locating the gardens to capture runoff improves water quality.



Same garden as above a year after installation. Photo courtesy of Dr. Leister

## WHAT PLANTS BELONG IN RAIN GARDENS?

The following plants and trees, which are native to North Carolina, are great for rain gardens:



Beautiful cardinal flower with Joe Pye weed behind

- False Indigo
- Joe Pye Weed
- Cardinal Flower
- Blue Flag Iris
- Cinnamon Fern
- Texas Star
- Red Buckeye
- Ironwood
- Redbud
- Inkberry
- Swamp Sunflower
- Green and Gold

For more information on building a backyard rain garden, visit:

<http://nemo.uconn.edu/tools/app/raingarden.htm> or [www.bae.ncsu.edu/topic/raingarden/index.htm](http://www.bae.ncsu.edu/topic/raingarden/index.htm)

## CLIMATE CHANGE & NATURAL DISASTERS

With all the buzz about climate change, most people consider melting ice caps in the Arctic to be the biggest concern. While this is a huge negative effect of global climate change, some people may feel like such an occurrence doesn't affect them in their daily lives. Did you know that climate change is tied to natural disasters?



An increase in greenhouse gases in the atmosphere is likely to boost temperatures across most land surfaces. Not only does climate change affect average temperatures, but also extreme temperatures, and this increases the likelihood of weather-related natural disasters.

Possible outcomes of increased global temperatures includes increased risk of drought, increased intensity of storms, wetter Asian monsoons, and more intense mid-latitude storms.

A warmer and wetter atmosphere that allows more storms would also spawn more hurricanes. Additionally, warmer temperatures may also heat

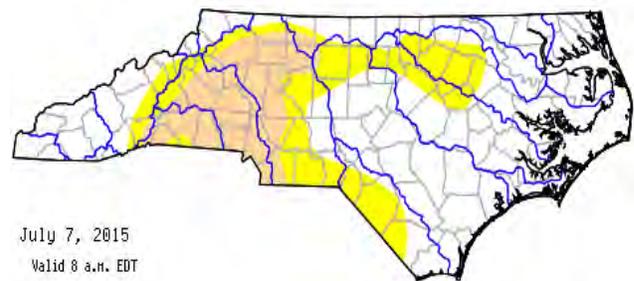
ocean waters farther from the equator, expanding the reach of tropical storms.

Global climate change can also be responsible for floods and droughts. The United Nations' Intergovernmental Panel on Climate Change said in its latest report that heavy rain events in North America and Europe appear to have been growing more frequent and severe, and that it is very likely that these events will get worse as surface air temperatures continue to rise in the coming century.

## NC CLIMATE VARIABILITY AND ITS IMPACT ON WATER

In NC storms are becoming fewer in number and they are also more intense. Infrequent, intense storms will have an impact on our water ways. As storms become more intense, there will be a dominance of high-energy raindrops that have the ability to break down the structure of bare, uncovered soil and reduce the space between soil particles. Water gets into the ground to water the plants, grow our crops and re-charge our aquifers by entering the space between the soil particles. With intense storms the importance of covering garden beds with mulch and farm fields with cover crops becomes paramount to maintain the productive soils.

With more time between storms, pollution can get concentrated on parking lots, roads and yards. When rain falls faster than it can be absorbed by the soil, referred to as infiltration, then the excess



July 7, 2015  
Valid 8 a.m. EDT

**Drought Classifications**  
 ■ D0 - Abnormally Dry  
 ■ D1 - Moderate Drought  
 ■ D2 - Severe Drought  
 ■ D3 - Extreme Drought  
 ■ D4 - Exceptional Drought

□ County Boundaries    □ Major River Basins ([View Map](#))  
 S = Short-Term, typically <6 months (e.g. agriculture, grasslands)  
 L = Long-Term, typically >6 months (e.g. hydrology, ecology)

Drought Conditions in NC

water runs off the surface of the land. As more runoff occurs, the pollution will be carried downhill to our rivers, streams and lakes. To decrease the pollution entering our water ways residents need to be Stormwater SMART.

## GET INVOLVED: FOUR WAYS YOU CAN MAKE A DIFFERENCE

Davidson County  
Randolph County  
Rockingham County  
Archdale  
Asheboro  
Burlington  
Elon  
Gibsonville  
Graham  
Green Level  
Haw River  
Lexington  
Mebane  
Oak Ridge  
Summerfield  
Randleman  
Reidsville  
Thomasville  
Trinity

1. **Build a Rain Garden:** Rain gardens are great additions to your yard or work place. They utilize native plants, which help soak up rain water, filtering pollution and reducing runoff.
2. **GreenScape Your Yard:** GreenScaping is a set of landscaping principles that can improve your lawn and garden while protecting and preserving natural resources. For more information, visit: <http://www.epa.gov/epawaste/conserve/tools/greenscapes/owners.htm>
3. **Educate Your Community:** Check out our website for educational material that you can use to educate your community.
4. **Volunteer:** Stormwater SMART hosts trash pickup and storm drain marking events throughout the year and across the Piedmont Triad area. If you are interested in volunteering with Stormwater SMART for a trash pickup, storm drain marking, or have other questions about getting involved, contact Kaly Clark at [kclark@ptrc.org](mailto:kclark@ptrc.org) or 336.904.0300.



Volunteers mark storm drains in Asheboro.

## LOOK FOR STORMWATER SMART AT A EVENT NEAR YOU.

- 9/12/15—**Bush Hills Festival; Archdale**
- 9/19/15—**Burlington Carousel Festival**
- 9/26/15—**Everybody's Day; Thomasville**
- 10/3/15—**Asheboro Fall Festival**
- 10/24/15—**Lexington BBQ Festival**
- 10/24/15—**NASCAR Days; Randleman**



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PIEDMONT TRIAD  
REGIONAL COUNCIL

Stormwater SMART was created by the Piedmont Triad Regional Council (formerly Piedmont Triad Council of Governments) to help Phase II communities comply with National Pollution Discharge Elimination System (NPDES) and Jordan Lake Public Education and Outreach requirements. Stormwater SMART is supported through dues paid by member governments.