Goose Creek Watershed
Water Quality Management Plan
A GUIDE FOR HOMEOWNERS AND CITIZENS

LOCATION

The Goose Creek watershed is comprised of roughly 42 square miles in Union and Mecklenburg counties. It also includes the towns of Mint Hill, Indian Trail, Stallings, Fairview and Hemby Bridge.

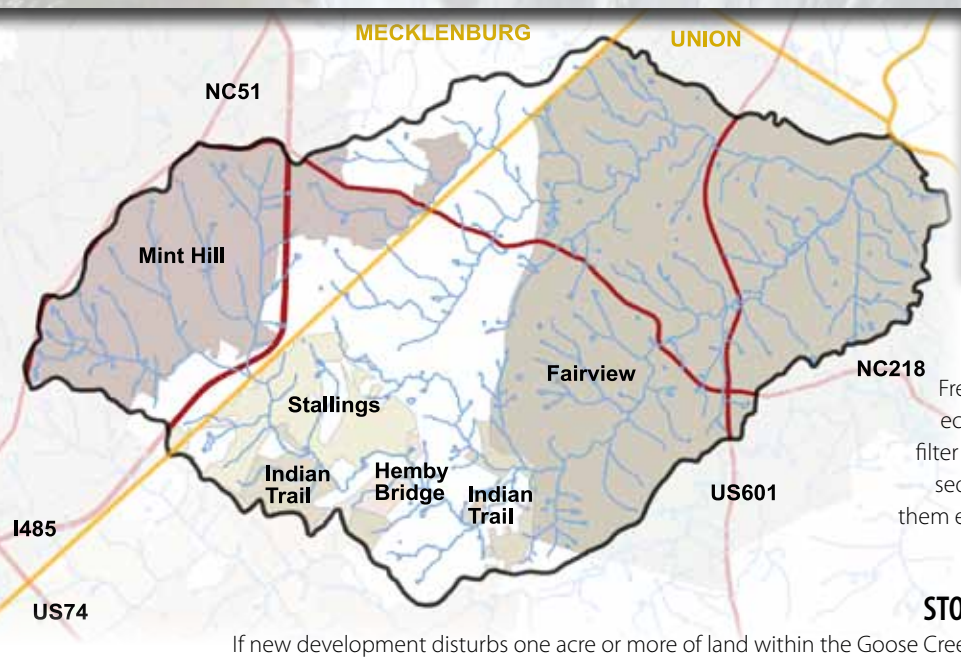
This watershed is home to many kinds of native freshwater mussels, several of which are listed as species of concern, threatened or endangered. One of those species, the Carolina heelsplitter (*Lasmigona decorata*), has been listed as a federally endangered species since 1993.

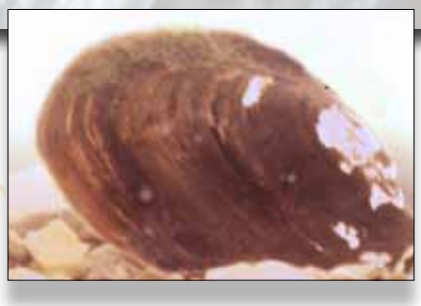
WATER QUALITY MANAGEMENT PLAN

To protect the water quality conditions and habitat that are necessary for the Carolina heelsplitter mussel, a set of management rules was adopted by the N.C. Environmental Management Commission and became effective Feb. 1, 2009.

These rules include requirements for:

- Stormwater control
- Wastewater control
- Toxic pollutant control (including ammonia)
- Riparian buffer protection





MUSSELS

Freshwater mussels are important for aquatic ecosystems; most beneficial to humans, they filter water. They are sensitive to pollutants and sediment carried by the stream, which makes them excellent indicators of stream water quality.

STORMWATER CONTROL REQUIREMENTS

If new development disturbs one acre or more of land within the Goose Creek Watershed **and** adds impervious surface (e.g., roads, parking lots, buildings), then stormwater runoff* must be controlled and treated with structural controls.

Structural controls normally require engineering design and engineered construction. Examples include wet ponds, stormwater wetlands or permeable pavement.

** The difference in stormwater runoff between pre-development and post-development conditions for the one-year, 24-hour storm.*

WASTEWATER CONTROL REQUIREMENTS

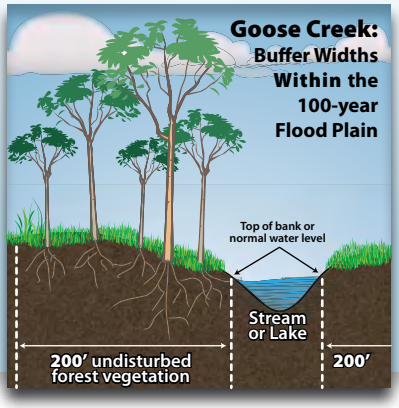
The National Pollution Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources. Examples include industrial process wastewater and water treatment plants that discharge treated wastewater effluent directly to a stream, river or lake.
Under the new rules, no new NPDES wastewater discharges or expansions to existing discharges are permitted in the Goose Creek Watershed.

TOXICITY CONTROL REQUIREMENTS

No activity that results in direct or indirect discharge is allowed if that discharge is toxic to the Carolina heelsplitter mussel.
For any discharge that may cause ammonia toxicity to the Carolina heelsplitter, action shall be taken to reduce ammonia inputs.

DIVISION OF WATER QUALITY DWQ
NCDENR

Riparian Buffer Requirements

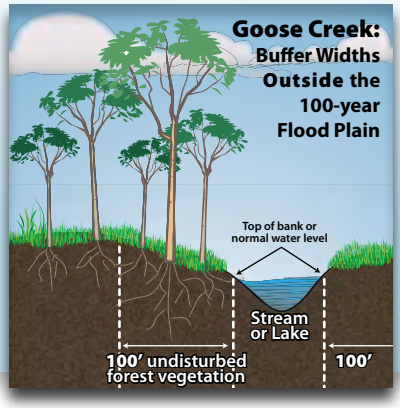


What is a riparian buffer?

A riparian buffer is a strip of forested land bordering a body of water.

Riparian buffers have lots of benefits:

Filtering runoff	Controlling erosion
Providing flood control	Protecting property
Absorbing excess nutrients	Moderating water temperature
Providing wildlife habitat	Providing community value



How wide are the riparian buffers?

Within the 100-year* floodplain, undisturbed riparian buffers are required within 200 feet of water bodies. Outside the 100-year* floodplain, undisturbed riparian buffers are required within 100 feet of water bodies.

*The 100-year floodplain is the one percent Annual Chance Floodplain as delineated by the North Carolina Floodplain Mapping Program in the State Division of Emergency Management (www.ncfloodmaps.com).

For streams, the riparian buffer is measured landward from the top of the stream bank on each side of the stream.

For ponds, lakes and reservoirs, the riparian buffer is measured from the normal water level.

Where does the riparian buffer apply?

The riparian buffer applies to the following types of water bodies that are depicted on *the most recent printed version of the soil survey maps prepared by the Natural Resources Conservation Service* **or** *the 1:24,000 scale quadrangle topographic maps* prepared by the U.S. Geologic Survey:

- Perennial streams
- Intermittent streams
- Lakes
- Ponds (including beaver ponds)
- Modified natural streams

Uncertain if a water body may be subject to these rules? Contact DWQ's Mooresville Regional Office for an on-site determination at (704) 663-1699.

What is allowed in the riparian buffers?

The riparian buffer must be undisturbed, regardless of property size or type of land use (e.g., authorization may be required for removing vegetation or grading activities). Refer to the Table of Uses in the Goose Creek Rules for specific activities.

- **Exempt** uses are allowed in the riparian buffer without approval from the Division of Water Quality (DWQ).
- **Potentially allowable** uses may occur in the buffer after written authorization from DWQ (may require mitigation for the impacts).
- **Prohibited** uses are not allowed in the buffer unless a variance is granted from the N.C. Environmental Management Commission.
- Activities not listed are **Prohibited.**

The benefits of riparian buffers are maximized when there is DIFFUSE FLOW of stormwater runoff

What is diffuse flow?

Diffuse flow refers to overland water flow that is spread out over the landscape, not concentrated into a defined channel.

When is diffuse flow required?

Diffuse flow is required before stormwater runoff enters the riparian buffer from any new ditch or manmade conveyance. It is required on all buffered streams, regardless of property size or type of land use.

How can you achieve diffuse flow?

Diffuse flow may be achieved by installing a level spreader. Level spreaders, or other diffuse flow devices, must be designed according to the N.C. Stormwater BMP Manual (http://h2o.enr.state.nc.us/su/bmp_forms.htm).

For more information, please contact the Division of Water Quality:

Mooresville Regional Office
610 East Center Ave.
Mooresville, NC 28115
(704) 663-1699

Wetlands & Stormwater Branch
Outreach and Training Coordinator
512 N. Salisbury Street
Raleigh, NC 27604
(919) 807-6360

Stormwater Permitting Unit
and NPDES Unit
512 N. Salisbury Street
Raleigh, NC 27604
(919) 807-6300

Riparian Buffer Coordinator
2321 Crabtree Boulevard
Raleigh, NC 27604
(919) 733-1786

The Goose Creek Watershed rules are available online: **http://h2o.enr.state.nc.us/csu/GooseCreek.html**
Stormwater applications and information are available online: **http://h2o.enr.state.nc.us/su/Forms_Documents.htm**
Buffer applications and information are available online **http://h2o.enr.state.nc.us/ncwetlands/RiparianBufferRules.htm**