

Trout Buffer Design Considerations

Reference:

NCGS 113A-57 (1):

No land-disturbing activity during periods of construction or improvement to land shall be permitted in proximity to a lake or natural watercourse unless a buffer zone is provided along the margin of the watercourse of sufficient width to confine visible siltation within the twenty-five percent (25%) of the buffer zone nearest the land-disturbing activity. Waters that have been classified as trout waters by the Environmental Management Commission shall have an undisturbed buffer zone 25 feet wide or of sufficient width to confine visible siltation within the twenty-five percent (25%) of the buffer zone nearest the land-disturbing activity, whichever is greater. Provided, however, that the Sedimentation Control Commission may approve plans which include land-disturbing activity along trout waters when the duration of said disturbance would be temporary and the extent of said disturbance would be minimal. This subdivision shall not apply to a land-disturbing activity in connection with the construction of facilities to be located on, over, or under a lake or natural watercourse.

15A NCAC 04C .0125:

(a) *The width of a buffer zone shall be measured from the edge of the water to the nearest edge of the disturbed area, with the 25 percent of the strip nearer the land-disturbing activity containing natural or artificial means of confining visible siltation.*

(b) *A 25-foot minimum width undisturbed buffer zone shall be protected adjacent to trout waters designated by the Environmental Management Commission. The 25-foot width buffer zone shall be measured horizontally from the top of the bank to the nearest area of disturbance.*

(c) *Where a temporary and minimal disturbance is permitted as an exception by G.S. 113A-57(1), land-disturbing activities in the buffer zone adjacent to designated trout waters shall be limited to a maximum of 10 percent of the total length of the buffer zone within the tract and distributed such that there is not more than 100 linear feet of disturbance in each 1000 linear feet of buffer zone.*

(d) *Upon a written request of the applicant, the Director may allow a larger area of disturbance than provided in Paragraph (c) of this Rule if the applicant demonstrates that additional measures will be utilized that will achieve an equal or more effective level of erosion and sedimentation control than would be achieved had the specifications prescribed in Paragraph (c) of this Rule been followed.*

(e) *No land-disturbing activity shall be undertaken within a buffer zone adjacent to trout waters that is predicted by the approving authority to cause stream temperature violations in these waters as set forth in 15A NCAC 02B .0211 which is hereby incorporated by reference including subsequent amendments and editions.*

Items of Note in 15A NCAC 02B .0211:

(18) *Temperature: not to exceed 2.8 degrees C (5.04 degrees F) above the natural water temperature, and in no case to exceed 29 degrees C (84.2 degrees F) for mountain and upper piedmont waters and 32 degrees C (89.6 degrees F) for lower piedmont and coastal plain waters; the temperature for trout waters shall not be increased by more than 0.5 degrees C (0.9 degrees F) due to the discharge of heated liquids, but in no case to exceed 20 degrees C (68 degrees F);*

(21) *Turbidity: the turbidity in the receiving water shall not exceed 50 Nephelometric Turbidity Units (NTU) in streams not designated as trout waters and 10 NTU in streams, lakes, or reservoirs designated as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased. Compliance with this turbidity standard shall be deemed met when land management activities employ Best Management Practices (BMPs), as defined by Rule .0202 of this Section, recommended by the Designated Nonpoint Source Agency, as defined by Rule .0202 of this Section.*

Applicability:

- Does the stream or adjacent waterbody classification include Tr (trout)?
- Am I disturbing more than 10% of the buffer's linear distance along the stream reach on my tract, or more than 100 feet of the buffer's linear distance along the stream?
- Is the project constructing something other than just what is necessary to construct facilities to be located on, over, or under a lake or natural watercourse?
- Is the disturbance greater than 10% as described above encroaching into 25 feet from the top of bank of the stream?

If the answer to the all of the above questions are yes then you will need to submit a Trout Buffer Waiver request.

Design Considerations:

- Very robust erosion and sediment control measures for proposed disturbed areas within or adjacent and draining to the trout buffer. Please note the turbidity requirement to not exceed 10 NTUs noted above in 15A NCAC 02B .0211 (21)
- No staging or stockpiling of materials or equipment within the trout buffer.
- No fueling of equipment within the trout buffer
- Phase work so that disturbance is only what can be stabilized in one day and note that all materials are onsite and available prior to disturbance. Provide a detailed construction sequence which directs the contractor to achieve this goal.

- All stream or streambank work should be performed in the dry with detailed pump around plans shown on the plans and a detailed construction sequence for that activity.
- Within the trout buffer do NOT use polyacrylamides or fertilizer. Use Only fully biodegradable matting (such as coir fiber matting) with wood stakes in lieu of regular matting.
- Do not direct concentrated flow to the waterbody through the buffer. Use a level spreader or equivalent to achieve sheet flow through the buffer. If needed direct flow from impervious surfaces or concentrated flows to an adjacent area which does not have a reduced buffer area.
 - Be aware that flows which come off thermal masses (including but not limited to roofs parking lots, stone, or concrete patios etc.) will need to be directed away from the waterbody and may require some treatment to ensure that the temperature of the receiving water is not increased more than 0.5 degrees Celsius, as required in 15A NCAC 02B .0211 (18). Some opportunities to address this could include:
 - Minimize thermal mass area.
 - Direct runoff to location where full buffer is intact and the flow is converted to sheet flow.
 - Consider underground detention to cool stormwater from these areas.
- For elevated porches or decks within the trout buffer please provide the type of stabilization measure for the ground surface under the structure where vegetation is unlikely to survive.
- For plantings within the buffer use only plantings approved in the Guidelines for Riparian Buffer Restoration published by the Division of Environment and Natural Resources, Division of Water Quality, Ecosystem Enhancement Program on October 2004.
- Contact the North Carolina Wildlife Resources Commission (NCWRC) to determine if a moratorium between October 15 and April 15 is applicable.

The contact information is:

Andrea Leslie
 Mountain Habitat Conservation Coordinator
 NC Wildlife Resources Commission
 645 Fish Hatchery Rd., Building B
 Marion, NC 28752
 828-803-6054 (office)
 828-400-4223 (cell)
 www.ncwildlife.org

Materials to be submitted for Trout Buffer Waiver Plan:

- Completed Trout Buffer Waiver Supplemental Information sheet.

- Detailed narrative which explains the purpose and necessity of the project and why it must encroach into the buffer. This narrative should clearly and fully describe, in coordination with the plans, the methods of protecting the waterbody and adjacent buffer both during the proposed construction and the impacts moving forward.
- A very robust Erosion and Sedimentation Control plan which clearly and fully demonstrates the methods of protecting the waterbody and adjacent buffer as required in the above referenced laws and rules.
- A detailed construction sequence which demonstrates the method used to minimize the extent and duration of the impact to the buffer and waterbody.
- A thorough landscape plan which includes only plants approved in the Guidelines for Riparian Buffer Restoration as noted above.

Some Considerations for Projects Adjacent to Trout Buffers or Other Sensitive Waters:

- Do not direct concentrated flows into buffers as the buffer functions best under sheet flow conditions.
- When constructing adjacent to a buffer allow room for maintenance of measures without encroaching into the buffer. Do NOT put the base of the slope directly on the buffer line as this is a recipe for failure.
 - Increase the required inspection and maintenance frequency of BMPs adjacent to buffers or sensitive waters.
- Coordinate with local watershed administrator as needed.