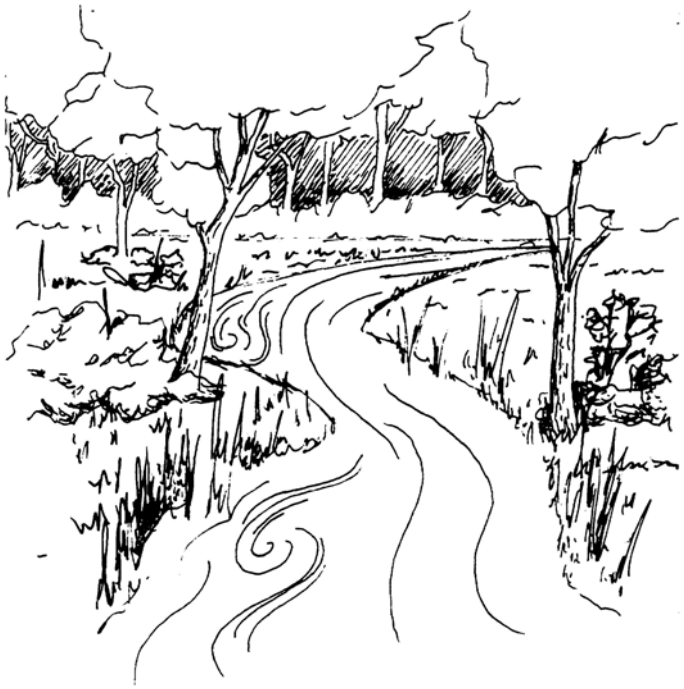
Field Guide for Determining The Presence of State Waters That Require a Buffer



Georgia Department of Natural Resources
Environmental Protection Division
Watershed Protection Branch
NonPoint Source Program

This guidance is based on the Georgia Erosion and Sedimentation Control Rules (Rules), 391-3-7, promulgated under the Georgia Erosion and Sedimentation Act (Act), O.C.G.A. 12-7.

The Act defines State Waters as "any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells and other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the State, which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation."

This guidance only addresses the identification of rivers, streams, creeks and branches that require a buffer. The State-mandated buffer requirements apply to all State Waters that require a buffer (i.e., have wrested vegetation by normal stream flow).

The definition of Normal Stream Flow that is used in this document is found in the definition of Stream Bank in the Rules, and only applies to non-trout streams. Streams that have Normal Stream Flow as defined in the Rules have characteristics that are not normally associated with ephemeral streams.

STEPS FOR DETERMINING THE PRESENCE OF STATE WATERS AND BUFFER REQUIREMENTS ON A SITE

Please note that this guidance is primarily written to assist local issuing authorities with their determinations of State Waters and buffer requirements. However, it is also a tool for plan preparers and environmental consultants to use in the preparation of accurate Erosion, Sedimentation and Pollution Control Plans.

Step 1 Review the topography of the Erosion, Sedimentation and Pollution Control Plan for natural or artificial features that may indicate the presence of State Waters.

Step 2 Walk the site in order to identify State Waters as defined.

Step 3 Begin the inspection at one end of the potential State Waters and walk the entire length of the State Waters until it exits the property.

Step 4 Examine the drainage feature using this field guide to determine whether the feature is perennial, intermittent or ephemeral. If the drainage feature is determined to be perennial or intermittent, then a State-mandated buffer exists. If the drainage feature appears to be ephemeral then go to Step 5 to make a final determination. If the identified feature is a salt marsh, then Georgia Department of Natural Resources (DNR), Coastal Resources Division should be contacted for the delineation of the DNR jurisdictional line (point from which the buffer is measured).

Step 5 If base flows are present during the site inspection, the stream is either perennial or intermittent and will require a buffer. If the site is visited during a dry phase and base flows are not evident, the drainage may be ephemeral or intermittent. If there is no flowing water within 24 hours of a rain event, then the drainage feature is probably ephemeral. **NOTE**: Ephemeral non-trout streams do not require buffers so great care should be exercised when conducting field investigations for ephemeral and intermittent stream determinations. In such conditions inspections must be accomplished by professionals trained or otherwise familiar with methods used to determine whether the stream is in a season when base flows may not be observable, or if the stream is ephemeral and simply flows in direct response to precipitation. The ephemeral stream guidance should be used to make the final determination as to whether the stream is ephemeral.

Step 6 If there is still a question about base flow after Step 5 is completed, then the "North Carolina Division of Water Quality Stream Identification Method, Version 3.0" (or most current version) should be used to verify whether or not base flow is present.

Step 7 The determination should be documented in writing.

DEFINITIONS

a. "Base Flow" means the discharge that enters a stream channel mainly from groundwater, but also from lakes during periods when no precipitation occurs.

b. "Buffer" means the area of land immediately adjacent to the banks of State Waters in its natural state of vegetation, which facilitates, when properly vegetated, the protection of water quality and aquatic habitat (O.C.G.A. 12-7-3(2)).

c. "Ephemeral Stream" means a stream that typically has no well-defined channel, and which flows only in direct response to precipitation with runoff.

d. "Intermittent Stream" means a stream that flows in a well-defined channel during wet seasons of the year but not for the entire year.

e. "Land Disturbing Activity" means any activity which may result in soil erosion and the movement of sediments into State Waters or onto lands within the State, including but not limited to grubbing, dredging, grading, excavating, transporting, and filling of land, but not including those practices to the extent described in O.C.G.A. 12-7-17 (O.C.G.A. 12-7-3(9)).

f. "Normal Stream Flow" for non-trout waters only, means any stream flow that consists solely of base flow or consists of both base flow and direct runoff during any period of the year. Base flow results from groundwater that enters the stream channel through the soil. This includes spring flows into streams. Direct runoff is the water entering stream channels promptly after rainfalls or snow melts (Rule 391-3-7-.01(w)).

g. "Perennial Stream" means a stream that flows in a well-defined channel throughout most of the year under normal climatic conditions.

h. "State Waters" include any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and other bodies of surface or subsurface water, natural and artificial, lying within or forming a part of the boundaries of the State which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation, except as may be defined in O.C.G.A. 12-7-17(8) (O.C.G.A. 12-7-3 (16)).

i. "Stream Bank" means the confining cut of a stream channel and is usually identified as the point where the normal stream flow has wrested the vegetation (Rule 391-3-7-.01(w)).

j. "Typical/Average Year" means a year in which the observed base flow and rainfall quantity is approximately equal to the long-term average.

k. "Wrested Vegetation" means movement of water that removes soil, debris and vegetation, creating a clear demarcation between water flow and vegetative growth.

Please note the following:

- The definition of Normal Stream Flow that appears in this guidance applies only to non-trout streams. **Ephemeral trout streams are not exempt from buffer requirements, but may be eligible for the General Stream Buffer Variance in 391-3-7-.05(9) of the Erosion and Sedimentation Control Rules.** Refer to the Georgia Water Quality Control Rules (391-3-6-.03) for a listing of trout streams.

- Buffer requirements are included in the General NPDES Permit for Storm Water Discharges from Construction Activities.

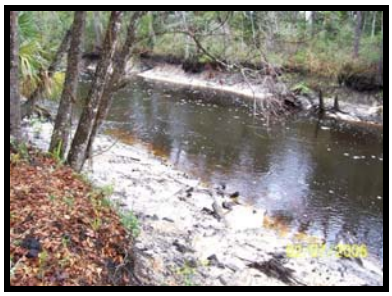
- Contact DNR, Coastal Resources Division for guidance involving any land disturbing activity in marshland areas.

- State Waters may also be classified as Waters of the U.S., and may require a U.S. Army Corps of Engineers Section 404 permit.

PERENNIAL STREAM CHARACTERISTICS

North Georgia Perennial

Piedmont Perennial

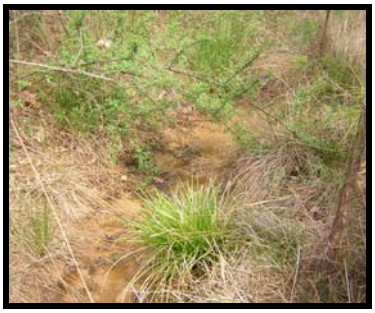


Coastal Perennial

All perennial streams flow throughout the year in a normal climatic year. Site inspections should result in visually discernible stream flows as evidence of base flow contribution between rain events, even in low flow conditions. After confirming perennial flow regimes, the presence of one or more of the following characteristics indicates that the drainage feature is a **perennial stream**:

1. Base flow that maintains stream flow throughout the year under normal circumstances.
2. Well-developed stream banks and channels include riffles/pools.
3. A channel that is almost always sinuous (winding, snake-like, etc.). The degree of sinuosity is specific to physiographic regions. For example, in geographic regions that have mountainous terrain, or in the coastal plain where many streams have been channelized, the channels are less sinuous.
4. Evidence of fluctuating high water marks (flood prone width) and/or sediment stained leaves, bare ground, and/or drift lines.
5. Evidence of soil and debris movement (scouring) in the stream channel. Leaf litter is usually transient or temporary in the flow channel.
6. Wetland or hydrophytic vegetation is usually associated with the stream channel. However, perennial streams with deeply incised or "down-cut" channels will usually have wetland vegetation present along the banks or flood-prone zone. Examples include sedges, rushes, mosses, ferns, and the riparian grasses, shrubs and other woody species.
7. Stream bank soils with hydric conditions, including dominant black/gray colors evident in the exposed stream bank profiles at or above the low flow conditions.
8. Exposure of rock or gravel or sand in a continuous or nearly continuous low lying channel.

INTERMITTENT STREAM CHARACTERISTICS



North Georgia Intermittent

Piedmont Intermittent

Coastal Intermittent

After confirming whether base flows are seasonally present, one or more of the following characteristics indicates that the drainage feature is an **intermittent stream**:

1. Well-developed stream bank and defined channel. Riffles/pools channel morpholgy is evident.
2. Evidence of fluctuating high water marks (flood prone width) and/or sediment deposits, sediment stained leaves, bare ground and/or drift lines.
3. Evidence of soil and debris movement (scouring) in the stream channel. Leaf litter is usually transient or temporary in the flow channel.
4. Wetland or hydrophytic vegetation is usually associated with the stream channel or flow area. Intermittent streams with deeply incised or "down-cut" channel will usually have wetland vegetation present along the banks or flood prone zone. Examples include sedges, rushes, mosses, ferns, and the riparian grasses, shrubs and other woody species.
5. Exposure of rock or gravel or sand in a continuous or nearly continuous low lying channel.
6. In the coastal plain, the soils may be sandy with veins of black.
7. Presence of crayfish burrows or chimneys.
8. The presence of aquatic insects (in any life phase) or fish. (For help identifying insects as aquatic, use the GA Adopt-A-Stream Aquatic Macroinvertebrate Field Guide, **www.georgiaadoptastream.com**)
9. Presence of buttressed trees.

EPHEMERAL STREAM CHARACTERISTICS

North Georgia Ephemeral

Piedmont Ephemeral

Coastal Ephemeral

The most reliable method for differentiating between intermittent and ephemeral stream types during drier conditions requires investigation of the stream bank (i.e., from the stream bed to the top of the bank).

Intermittent stream banks typically are dominated by soils with hydric indicators, such as: visually confirmed oxidized rhizospheres in the stream bank, matrix of gray or black soils, reducing conditions present and confirmed by a redox meter, or the stream banks otherwise include indicators of hydric soils as determined by the most current list of *Regional Indicators of Soil Saturation* as produced by the National Technical Committee for Hydric Soils.

Ephemeral streams usually have poor channel development and lack groundwater-induced base flows that normally result in hydric soils dominating the banks of intermittent and perennial streams.

EPHEMERAL STREAM CHARACTERISTICS

The prerequisite for a drainage feature to be classified as ephemeral is there must be no evidence of base flows in the stream bank (see methods discussed in intermittent stream characteristics).

After meeting the prerequisite above, the presence of one or more of the following characteristics indicates that the drainage feature is an **ephemeral stream**:

1. Poorly developed stream banks.
2. Absence of riffles/pools.
3. A flow area that is almost always straight and either "flattens" out at the bottom of the slope or grades into intermittent or perennial streams.
4. Fluctuating high water marks (flood prone width) and/or sediment transport are usually absent.
5. Evidence of leaf litter and/or small debris jams in the flow areas.
6. Usually sparse or no wetland (hydrophytic) vegetation present.
7. Side slope soils with characteristics typical of the surrounding landscape. Soil texture usually more loamy than the surrounding upslope landscape and usually has a clay subsurface.

Braided Channels

Buffers for braided channels such as those pictured above are measured from the point where vegetation is wrested from the outside channel of the braided system.

Concrete Channel

Concrete channels are examples of drainage features that usually do not require a buffer due to lack of "wrested vegetation."

NOTES

- This guidance does not change or modify any requirements in the Erosion and Sedimentation Act of 1975 O.C.G.A. 12-7 or DNR Rules on Buffer Variance Procedures and Criteria 391-3-7-05, as amended.

- Copies of the Georgia Erosion and Sedimentation Act (O.C.G.A. 12-7), the Erosion and Sedimentation Control Rules (391-3-7) and the Water Quality Control Rules (391-3-6) can be found at **www.gaepd.org**.

Contact Information:

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