

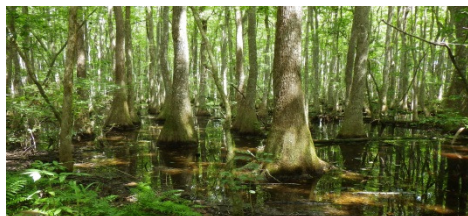
## WRESTED VEGETATION

Examples of situations that usually do not require a buffer due to lack of wrested vegetation are:

1. Freshwater Wetlands
2. Concrete Channels
3. Bulkheads, Seawalls or Retaining Walls
4. Rip Rap
5. Vegetated Waterways (excluding aquatic vegetation)
6. Impoundments with completely vegetated banks

Note: Structures that are in disrepair may require a buffer if vegetation has been reestablished.

Freshwater Wetlands



Concrete Channel



Bulkhead



Rip Rap Bank



Vegetated Waterway



Grassed Impoundment



## 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. (O.C.G.A. 12-7-6(b)(15))
- 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, excavation, 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(bb)).
- 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" means 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(bb)).
- j. "Wrested Vegetation" means movement of water that removes soil, debris and vegetation, creating a clear demarcation between water flow and vegetative growth.

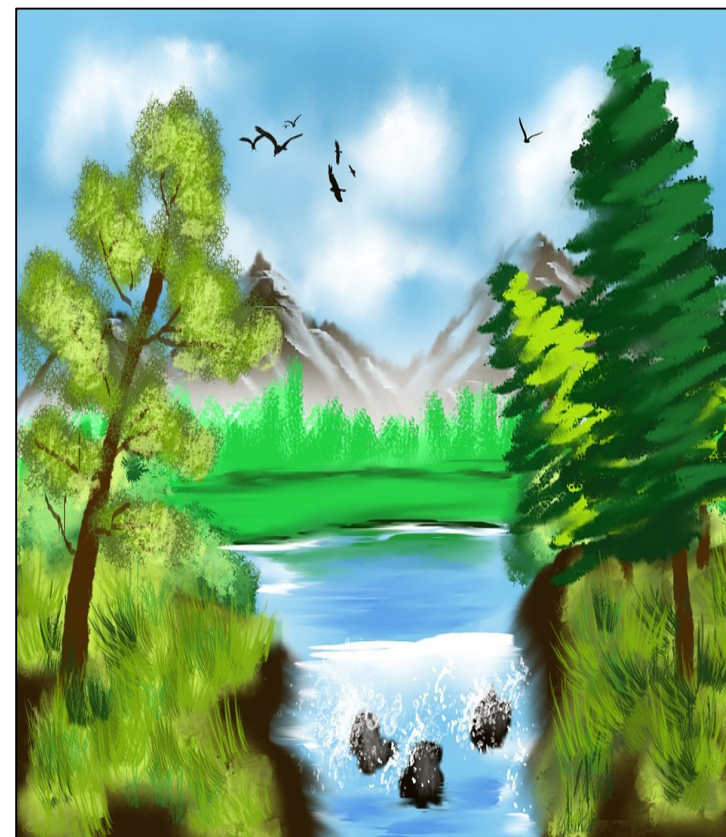
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## Field Guide for Determining the Presence of State Waters That Require a Buffer



**The 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.**

This field guide supersedes any previous manuals, memos, or guidance issued by the Georgia Environmental Protection Division on the identification of State Waters that require a buffer. It does not supersede the requirements of any Rule or Law.



WATERSHED PROTECTION BRANCH  
NONPOINT SOURCE PROGRAM

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

This guidance only addresses the identification of rivers, streams, creeks, branches, canals, and impoundments that require a buffer. The State mandated buffer requirements apply to these State Waters that have wrested vegetation by normal stream flow. Coastal marshlands are addressed in a separate document and have state mandated buffers that are measured from the Jurisdictional Determination (JD) Line established by the Coastal Marshland Protection Act and implemented by the Coastal Resources Division (CRD).

For the purposes of this guidance, Normal Stream Flow is defined as "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. Direct runoff is the water entering stream channels promptly after rainfalls or snow melts." This definition 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.

Please note the following:

1. The definition of Normal Stream Flow that appears in the 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 Rules for Erosion and Sedimentation Control. Refer to the Georgia Water Quality Control Rules (391-3-6-.03) for a listing of trout streams. **DNR Wildlife Resources Division trout maps should not be used.**
2. Ponds, lakes and other impoundments located within a trout stream watershed may be subject to trout stream buffer requirements (50 foot buffers).
3. Detention, retention and other water quality/water quantity ponds may be subject to buffer requirements.
4. Draining a pond may not eliminate the buffer. In addition, if the pond is altered after draining the new buffer will be based on the new conditions of the feature, i.e., (instead of a buffered pond there may be a buffered stream).
5. The buffer on an impoundment is measured from the point of "wrested vegetation." Normal pool elevation should not be used unless it coincides with the point of "wrested vegetation."
6. The buffer is 25 or 50 feet as measured horizontally from the point where "vegetation has been wrested by normal stream flow or wave action."
7. Buffer requirements are included in the General NPDES Permit for Storm Water Discharges Associated With Construction Activities.
8. Agricultural **activities**, such as the cultivation and harvesting products of the field or orchard, planting of pasture land, construction of a pond for agricultural purposes, dairy operations, and livestock and poultry operations, are exempt from the buffer requirements (O.C.G.A. 12-7-17(5)). However, the construction of **agricultural buildings, such as poultry houses** may be subject to the buffer requirements included in the NPDES General Permits for Stormwater Discharges Associated With Construction Activities.
9. Contact DNR, Coastal Resources Division for guidance involving any land disturbing activity within the coastal marshland itself.
10. 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.



**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 entire length of the river, stream, creek, branch or canal until it exits the property to verify that the feature is not completely contained upon the property of a single individual, partnership or corporation. If the feature is an impoundment then the perimeter should be inspected for an inlet and/or outlet and property lines identified to verify that the feature is not completely contained upon the property. If a feature is completely contained upon the property of a single individual, partnership or corporation and there is no inflow/outflow, the feature is not a State Water and is not buffered.

**Step 3** If it is determined that the feature is a State water the next step is to determine if the feature is a buffered State water. This involves determining if the feature has wretched vegetation and base flow. The buffer determination should be made at least 48 hours after the last rain event to accurately identify base flows.

**Step 4** The feature should first be inspected for wretched vegetation. If there is no point of wretched vegetation, the feature is not buffered. The absence of wretched vegetated banks and/or bottoms (excluding aquatic vegetation), rip rap or a solid bulkhead, seawall or retaining wall.

**Step 5** If there is flowing water in the wretched vegetated channel 48 hours after a rain event the feature is either perennial or intermittent and will require a buffer. If there is no water in the channel the feature is either ephemeral or intermittent. **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. Ephemeral trout streams are buffered if they have wretched vegetation, regardless of the presence of base flows.

**Step 6** Further investigation is required if the feature has wretched vegetation and is dry at the time of the site inspection. In such conditions inspections should be accomplished by professionals trained or otherwise familiar with methods used to determine whether the stream is in a season where base flows may not be observable, or if the stream is ephemeral and simply flows in direct response to precipitation.

**Step 7** The most current version of the “North Carolina Division of Water Quality Stream Identification Method” should be used to verify whether the stream is ephemeral. For impoundments a test hole should be dug upland of the high water mark and a few inches below the elevation of the existing water level. The water level in the test hole should stabilize at the same elevation of the subject feature if there is a ground water component.

**Step 8** If it is determined that there is both wretched vegetation and base flow present on the site then a State-mandated buffer exists and the buffer is measured from the point of wretched vegetation. Please note that ephemeral trout streams are buffered regardless of the presence of base flow.

**Step 9** The determination should be documented in writing. Photo documentation is strongly recommended.

**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. Presence of iron oxidizing bacteria in the streambed.
5. Evidence of soil and debris movement (scouring) in the stream channel. Leaf litter is usually transient or temporary in the flow channel.
6. Algae and wetland or hydrophytic vegetation are 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 (gleying) and/or redoximorphic features 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. In the coastal plain, the soils may be sandy with veins of black.
9. The presence of aquatic mollusks, crayfish, amphibians, aquatic insects (in any life phase) or fish (For help identifying insects as aquatic, use the [GA Adopt-A-Stream Aquatic Macroinvertebrate Field Guide, http://www.georgiaadoptastream.com/db/index.html](http://www.georgiaadoptastream.com/db/index.html)).

**INTERMITTENT STREAM CHARACTERISTICS**



**North Georgia Intermittent**



**Piedmont Intermittent**

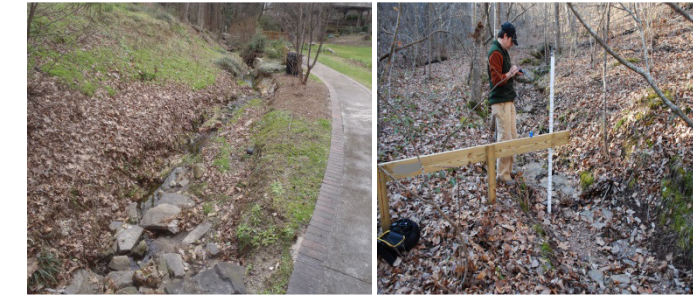


**Coastal Intermittent**

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 morphology is evident.
2. Presence of iron oxidizing bacteria in the streambed.
3. Evidence of soil and debris movement (scouring) in the stream channel. Leaf litter is usually transient or temporary in the flow channel.
4. Algae and wetland or hydrophytic vegetation are 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. Stream bank soils with hydric conditions, including dominant black/gray (gleying) and/or redoximorphic features evident in the exposed stream bank profiles at or above the low flow conditions. In the coastal plain, the soils may be sandy with veins of black.
7. Exposure of rock or gravel or sand in a continuous or nearly continuous low lying channel.
8. The presence of aquatic mollusks, crayfish, amphibians, aquatic insects (in any life phase) or fish (For help identifying insects as aquatic, use the [GA Adopt-A-Stream Aquatic Macroinvertebrate Field Guide, http://www.georgiaadoptastream.com/db/index.html](http://www.georgiaadoptastream.com/db/index.html)).

**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.

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. Absence of iron oxidizing bacteria in the streambed.
5. An abundant amount of leaf litter in the flow areas. Usually sparse or no algae and/or wetland (hydrophytic) vegetation present.
6. Fibrous roots and/or rooted upland plants in the streambed. 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.