

Chapter 11

North Carolina Water Quality Standards and Classifications

11.1 Description of Surface Water Classifications and Standards

North Carolina's Water Quality Standards Program adopted classifications and water quality standards for all the state's river basins by 1963. The program remains consistent with the Federal Clean Water Act and its amendments. Water quality classifications and standards have also been modified to promote protection of surface water supply watersheds, high quality waters, and the protection of unique and special pristine waters with outstanding resource values.

11.1.1 Statewide Classifications

All surface waters in the state are assigned a *primary* classification that is appropriate to the best uses of that water. In addition to primary classifications, surface waters may be assigned a *supplemental* classification. Most supplemental classifications have been developed to provide special protection to sensitive or highly valued resource waters. Table 13 briefly describes the best uses of each classification. A full description is available in the document titled: *Classifications and Water Quality Standards Applicable to Surface Waters of North Carolina*. Information on this subject is also available at DWQ's website: <http://h2o.enr.state.nc.us/csu/>.

11.1.2 Statewide Water Quality Standards

Each primary and supplemental classification is assigned a set of water quality *standards* that establish the level of water quality that must be maintained in the waterbody to support the uses associated with each classification. Some of the standards, particularly for HQW and ORW waters, outline protective management strategies aimed at controlling point and nonpoint source pollution. These strategies are discussed briefly below. The standards for C and SC waters establish the basic protection level for all state surface waters. The other primary and supplemental classifications have more stringent standards than for C and SC, and therefore, require higher levels of protection.

Some of North Carolina's surface waters are relatively unaffected by pollution sources and have water quality higher than the standards that are applied to the majority of the waters of the state. In addition, some waters provide habitat for sensitive biota such as trout, juvenile fish, or rare and endangered aquatic species.

High Quality Waters (Class HQW)

There are no stream miles classified as HQW waters in the Roanoke River basin except for the WS-II waters that have a supplemental HQW classification (Figure 16). Special HQW protection management strategies are intended to prevent degradation of water quality below present levels from both point and nonpoint sources. HQW requirements for new wastewater discharge facilities and facilities which expand beyond their currently permitted loadings address oxygen-consuming wastes, total suspended solids, disinfection, emergency requirements, volume, nutrients (in nutrient sensitive waters) and toxic substances.

Table 13 - Primary and Supplemental Surface Water Classifications

PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS	
<u>Class*</u>	<u>Best Uses</u>
C and SC	Aquatic life propagation/protection and secondary recreation.
B and SB	Primary recreation and Class C and SC uses.
SA	Suitable for commercial shellfish harvesting and SB and SC uses.
WS	<i>Water Supply (WS)</i> : Assigned to watersheds based on land use characteristics. The WS classifications have management strategies to protect the surface water supply. For WS-I through WS-IV, these include limits on point source discharges and local programs to control nonpoint source and stormwater runoff. A WS Critical Area (CA) has more stringent protection measures and is designated within one-half mile from a WS intake or WS reservoir. All WS classifications are suitable for Class C uses.
WS-I	Generally located in natural and undeveloped watersheds.
WS-II	Generally located in predominantly undeveloped watersheds.
WS-III	Generally located in low to moderately developed watersheds.
WS-IV	Generally located in moderately to highly developed watersheds.
WS-V	Generally upstream of and draining to Class WS-IV waters. No categorical restrictions on watershed development or treated wastewater discharges.
SUPPLEMENTAL CLASSIFICATIONS	
<u>Class</u>	<u>Best Uses</u>
Sw	<i>Swamp Waters</i> : Waters that have low velocities and other natural characteristics that are different from adjacent streams (e.g., lower pH, lower levels of dissolved oxygen).
Tr	<i>Trout Waters</i> : Provides protection to freshwaters for natural trout propagation and survival of stocked trout.
HQW	<i>High Quality Waters</i> : Waters that have excellent water quality, primary nursery areas and other functional nursery areas, WS-I and WS-II or SA waters.
ORW	<i>Outstanding Resource Waters</i> : Unique and special waters of exceptional state or national recreational or ecological significance, which require special protection.
NSW	<i>Nutrient Sensitive Waters</i> : Waters subject to excessive plant growth and requiring limitations on nutrient inputs.

- Primary classifications beginning with "S" are assigned to saltwaters.

For nonpoint source pollution, development activities which require a Sedimentation and Erosion Control Plan in accordance with rules established by the NC Sedimentation Control Commission or an approved local erosion and sedimentation control program, and which drain to and are within one mile of HQWs, are required to control runoff from the development using either a low density or high density option. The low-density option requires a 30-foot setback between development activities and the stream; whereas, the high-density option requires structural stormwater controls (e.g., stormwater infiltration system, wet detention ponds). In addition, the Division of Land Resources (DLR) requires more stringent erosion controls for land-disturbing projects within one mile of and draining to HQWs.

Criteria for HQW Classification

- Waters rated as Excellent based on DWQ's chemical and biological sampling.
- Streams designated as native or special native trout waters by the Wildlife Resources Commission.
- Waters designated as primary nursery areas or other functional nursery areas by the Division of Marine Fisheries.
- Waters classified by DWQ as WS-I, WS-II or SA.

The ORW rule defines outstanding resource values as including one or more of the following:

- an outstanding fisheries resource;
- a high level of water-based recreation;
- a special designation such as National Wild and Scenic River or a National Wildlife Refuge;
- within a state or national park or forest; or
- a special ecological or scientific significance.

Outstanding Resource Waters (Class ORW)

There are 1.6 stream miles of ORW waters in the Roanoke River basin (Figure 16). These waters have excellent water quality (rated based on biological and chemical sampling as with HQWs) and an associated outstanding resource.

The requirements for ORW waters are more stringent than those for HQWs. Special protection measures that apply to North Carolina ORWs are set forth in 15A NCAC 2B .0225. At a minimum, no new discharges or expansions are permitted, and a 30-foot setback or stormwater

controls for new developments are required. In some circumstances, the unique characteristics of the waters and resources that are to be protected require that a specialized (or customized) ORW management strategy be developed.

Primary Recreation (Class B)

There are 111 stream miles, 31,543 freshwater acres and 1,475.5 estuarine acres classified for primary recreation in the Roanoke River basin. Waters classified as Class B are protected for primary recreation, include frequent and/or organized swimming, and must meet water quality standards for fecal coliform bacteria. Sewage and all discharged wastes into Class B waters must be treated to avoid potential impacts to the existing water quality.

Trout Waters

There are 92.0 stream miles classified as Trout (Tr) waters in the Roanoke River basin (Figure 16). Different water quality standards for some parameters, such as dissolved oxygen, temperature and turbidity, have been developed to protect freshwaters for natural trout propagation and survival of stocked trout. These water quality standards result in more restrictive limits for wastewater discharges to trout water streams. There are no watershed development restrictions associated with the Tr classification; however, the NC Division of Land Resources (DLR), under the NC Sedimentation and Pollution Control Act (SPCA), has requirements for protecting trout streams from land-disturbing activities. The SPCA states that “waters that have been classified as trout waters by the Environmental Management Commission (EMC) shall have an undisturbed zone either 25 feet wide or of sufficient width to confine visible siltation within the twenty-five percent (25 percent) of buffer zone nearest the land-disturbing activity, whichever is greater” [G.S. 113A-57(1)]. This rule applies to all named and unnamed tributaries flowing to the affected trout water stream. For more information regarding land-disturbing activities along designated trout streams, refer to the DLR website at www.dlr.enr.state.nc.us/.

The NC Wildlife Resources Commission administers a state fishery management classification known as the Designated Public Mountain Trout Waters. It provides for public access to streams for fishing and regulates fishing activities (seasons, size limits, creel limits, and bait and lure restrictions). Although many of these waters are also classified Tr by DWQ, this is not the same classification.

Swamp Waters

There are 237.3 stream miles and 1,475.5 estuarine acres classified as Swamp (Sw) waters in the Roanoke River basin. These waters are recognized as waters that will naturally be more acidic (have lower pH values) and have lower levels of dissolved oxygen.

Water Supply Watersheds (Class WS)

There are 246 stream miles and 26,320 freshwater acres currently classified for water supply in the Roanoke River basin (Figure 16). The purpose of the Water Supply Watershed Protection Program is to provide a proactive drinking water supply protection program for communities. Local governments administer the program based on state minimum requirements. There are restrictions on wastewater discharges, development, landfills and residual application sites to control the impacts of point and nonpoint sources of pollution to water supplies.

There are five water supply classifications (WS-I to WS-V) that are defined according to the land use characteristics of the watershed. The WS-I classification carries the greatest protection for water supplies. No development is allowed in these watersheds. Generally, WS-I lands are publicly owned. WS-V watersheds have the least amount of protection and do not require development restrictions. These are either former water supply sources or sources used by industry. WS-I and WS-II classifications are also HQW by definition because requirements for these levels of water supply protection are at least as stringent as those for HQWs. Those watersheds classified as WS-II through WS-IV require local governments having jurisdiction within the watersheds to adopt and implement land use ordinances for development that are at least as stringent as the state's minimum requirements. A minimum 30-foot setback is required on perennial streams in those watersheds in low-density areas; a minimum 100 feet setback is required in high-density areas. The Roanoke River basin currently contains, WS-II, WS-III, WS-IV and WS-V water supply watersheds. Water supply watersheds in the Roanoke River basin cover 26,320 Acres and 246 stream miles.

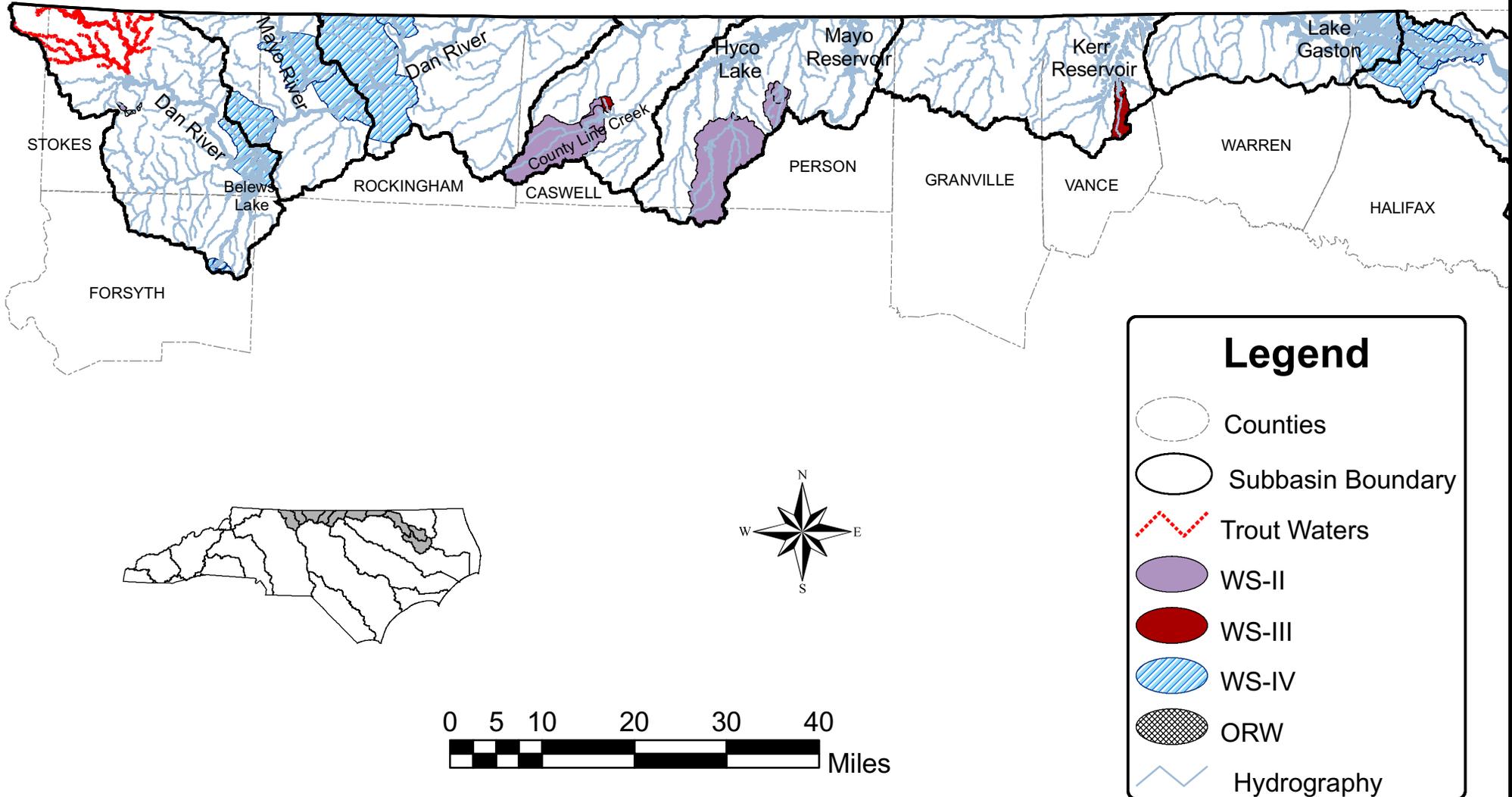
11.2 Reclassification of Surface Waters

The classification of a surface water may be changed if a request is submitted by a local government, watershed group, or a local citizen. DWQ reviews each request for reclassification and conducts an assessment of the surface water to determine if the reclassification is appropriate. If it is determined that a reclassification is justified, the request must proceed through the state rule-making process. To initiate a reclassification, the "Application to Request Reclassification of NC Surface Waters" must be completed and submitted to DWQ's Classification and Standards Unit. For more information on requests for reclassification and contact information, visit <http://h2o.enr.state.nc.us/csu/>.

11.2.1 Pending and Recent Reclassifications in the Roanoke River Basin

In Chapters 1 through 10, DWQ identified those surface waters as having Excellent bioclassification, and therefore, may be eligible for reclassification. There may also be many other surface waters eligible for reclassification that were not identified with the subbasin chapters. Both private and public stakeholders play an important role in the reclassification process and are responsible for filing formal requests with DWQ for reclass consideration.

**Figure 16 ORW* , Water Supply Watershed, and Trout Waters
in the Roanoke River Basin****



*The only ORW for this basin is in Stokes County, southwest of Danbury.

**All ORW's, WSW's and Trout Waters are located between subbasins 03-02-01 and 03-02-08.

