Chapter 25
North Carolina Water Quality Standards and Classifications

25.1 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.

25.2 Classifications Summary

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 28 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 at http://h2o.enr.state.nc.us/wqs/.

Table 28 Primary and Supplemental Surface Water Classifications

PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS*	
Class	**Best Uses**
C and SC	Aquatic life propagation/protection and secondary recreation.
B and SB	Primary recreation and Class C uses.
SA	Waters classified for commercial shellfish harvesting.
WS	*Water Supply watershed*. There are five WS classes ranging from WS-I through WS-V. WS classifications are assigned to watersheds based on land use characteristics of the area. Each water supply classification has a set of management strategies to protect the surface water supply. WS-I provides the highest level of protection and WS-IV provides the least protection. A Critical Area (CA) designation is also listed for watershed areas within a half-mile and draining to the water supply intake or reservoir where an intake is located.
SUPPLEMENTAL CLASSIFICATIONS	
Class	**Best Uses**
Sw	*Swamp Waters*: Recognizes waters that will naturally be more acidic (have lower pH values) and have lower levels of dissolved oxygen.
Tr	*Trout Waters*: Provides protection to freshwaters for natural trout propagation and survival of stocked trout.
HQW	*High Quality Waters*: Waters possessing special qualities including excellent water quality, Native or Special Native Trout Waters, Critical Habitat areas, or WS-I and WS-II water supplies.
ORW	*Outstanding Resource Waters*: Unique and special surface waters which are unimpacted by pollution and have some outstanding resource values.
NSW	*Nutrient Sensitive Waters*: Areas with water quality problems associated with excessive plant growth resulting from nutrient enrichment.

* Primary classifications beginning with a "S" are assigned to saltwaters.

25.3 Water Quality Standards and Rules

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.

25.4 High Quality Waters (HQW)

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.

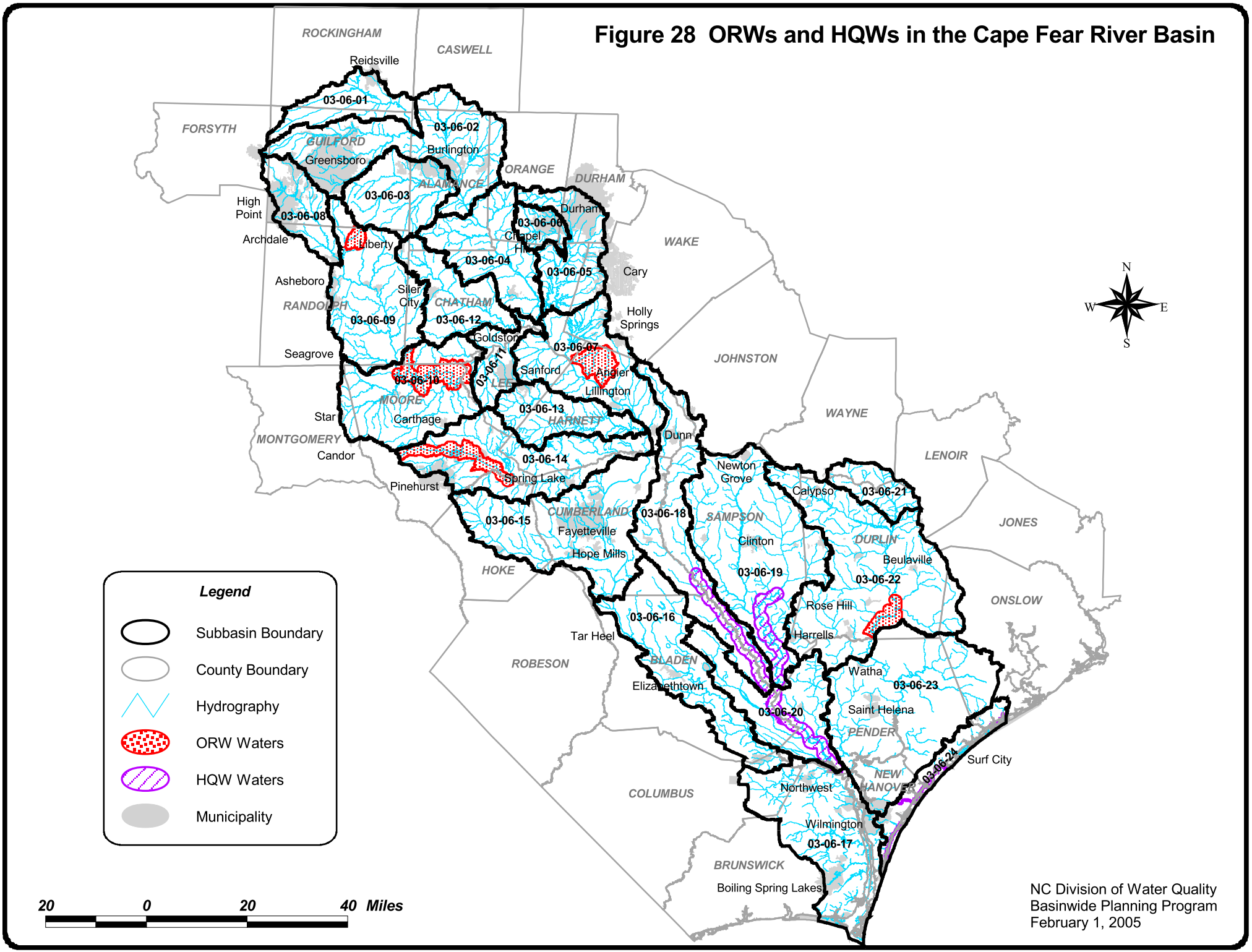
There are 163 stream miles and 262 freshwater acres of HQW waters in the Cape Fear River basin (Figure 28). There are also 165 stream miles, 1,737 freshwater acres of WS-II classified waters, and over 11,000 acres of SA waters that also meet HQW waters criteria. Special HQW protection management strategies 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.

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 1 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 vegetated buffer between development activities and the stream; whereas, the high density option requires structural stormwater controls. In addition, the Division of Land Resources requires more stringent erosion controls for land-disturbing projects within 1 mile of and draining to HQWs.

25.4 Outstanding Resources Waters (ORW)

There are 129 stream miles and 3,623 acres of ORW waters in the Cape Fear River basin (Figure 28). These waters have excellent water quality (based on biological and chemical sampling as with HQWs) and an associated outstanding resource.

Figure 28 ORWs and HQWs in the Cape Fear River Basin



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.

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 vegetated buffer 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.

25.5 Primary Recreation (B, SB and SA)

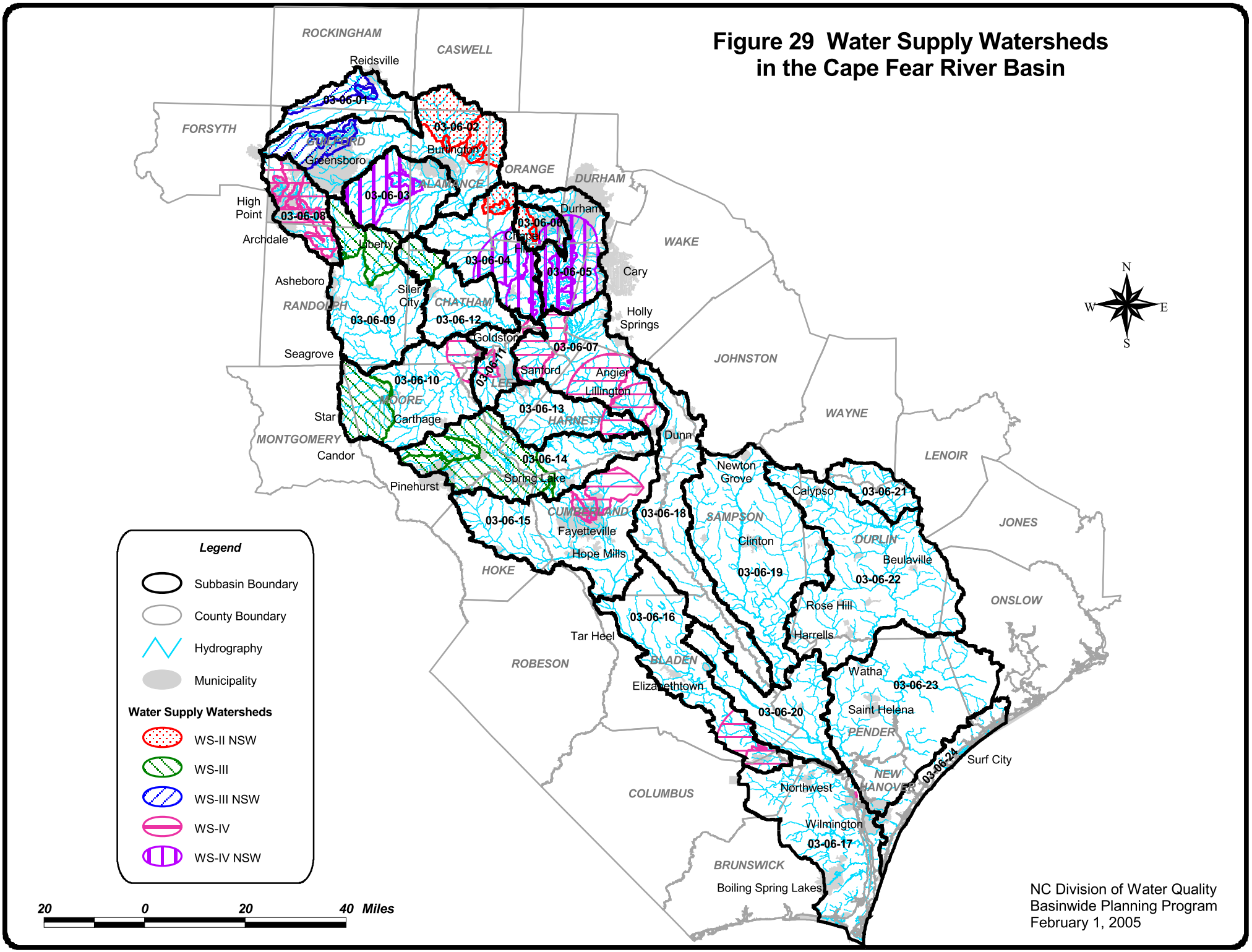
There are 13,779.1 freshwater acres, 584 estuarine acres and 199 stream miles classified for primary recreation in the Cape Fear River basin. There are 14,434 acres SA classified waters that are also protected for primary recreation. Waters classified as Class B or SB are protected for primary recreation, include frequent and/or organized swimming, and must meet water quality standards for fecal coliform bacteria. Sewage and all discharged wastes into Class B or SB waters must be treated to avoid potential impacts to the existing water quality.

25.6 Water Supply (WS-II to WS-V)

There are 1,781 freshwater stream miles and 25,075 freshwater acres currently classified for water supply in the Cape Fear River basin (Figure 29). 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. These programs are applied to 2,169.3 square miles of watershed in the Cape Fear River basin.

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 30-foot vegetated setback is required on perennial streams in these watersheds. The Cape Fear River basin currently contains WS-II, WS-III, WS-IV and WS-V water supply watersheds.

Figure 29 Water Supply Watersheds in the Cape Fear River Basin



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25.7 Nutrient Sensitive Waters (NSW)

There are 1,274 freshwater stream miles and 18,584 freshwater acres with a supplemental classification of NSW (Figure 29). All waters in the Haw River/Jordan Reservoir watershed (subbasins 03-06-01 to 03-06-06) are supplementally classified as NSW. Strategies related to these waters are discussed in Chapter 36.

25.8 Pending and Recent Reclassifications

The Rocky River is in the process of having some segments reclassified to WS to accommodate a new dam and water supply intake. Additional water quality information about the Rocky River is presented in Chapter 12.

Waters upstream of the Randleman Dam on the Deep River were reclassified to WS-IV and WS-IV CA in 1999, as this watershed will be used as a water supply for High Point and Greensboro. See Chapter 8 for water quality information on these waters.

Waters in the Mill Creek watershed upstream of Crystal Lake were reclassified to include the supplemental classification of HQW in 2002. See Chapter 14 for water quality information on these waters.