Appendix VII

Glossary of Terms and Acronyms

Glossary

§ Section.

macroinvertebrates

practices

The minimum average flow for a period of 30 days that has an average recurrence of one in

wo years.

7Q10 The annual minimum 7-day consecutive low flow, which on average will be exceeded in 9

out of 10 years.

B (Class B) Class B Water Quality Classification. This classification denotes freshwaters protected for

primary recreation and other uses suitable for Class C. Primary recreational activities include frequent and/or organized swimming and other human contact such as skin diving

and water skiing.

basin The watershed of a major river system. There are 17 major river basins in North Carolina.

benthic Aquatic organisms, visible to the naked eye (macro) and lacking a backbone (invertebrate),

that live in or on the bottom of rivers and streams (benthic). Examples include, but are not limited to, aquatic insect larvae, mollusks and various types of worms. Some of these organisms, especially aquatic insect larvae, are used to assess water quality. See EPT index

and bioclassification for more information.

benthos A term for bottom-dwelling aquatic organisms.

best management Techniques that are determined to be currently effective, practical means of preventing or

reducing pollutants from point and nonpoint sources, in order to protect water quality. BMPs include, but are not limited to: structural and nonstructural controls, operation and maintenance procedures, and other practices. Often, BMPs are applied as system of

practices and not just one at a time.

bioclassification A rating of water quality based on the outcome of benthic macroinvertebrate sampling of a

stream. There are five levels: Poor, Fair, Good-Fair, Good and Excellent.

BMPs See best management practices.

BOD Biochemical Oxygen Demand. A measure of the amount of oxygen consumed by the

decomposition of biological matter or chemical reactions in the water column. Most NPDES discharge permits include a limit on the amount of BOD that may be discharged.

C (Class C) Class C Water Quality Classification. This classification denotes freshwaters protected for

secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and

others uses.

channelization The physical alteration of streams and rivers by widening, deepening or straightening of the

channel, large-scale removal of natural obstructions, and/or lining the bed or banks with

rock or other resistant materials.

chlorophyll a A chemical constituent in plants that gives them their green color. High levels of

chlorophyll a in a waterbody, most often in a pond, lake or estuary, usually indicate a large

amount of algae resulting from nutrient overenrichment or eutrophication.

coastal counties Twenty counties in eastern NC subject to requirements of the Coastal Area Management

Act (CAMA). They include: Beaufort, Bertie, Brunswick, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Hertford, Hyde, New Hanover, Onslow, Pamlico,

Pasquotank, Pender, Perquimans, Tyrrell and Washington.

Coastal Plain One of three major physiographic regions in North Carolina. Encompasses the eastern two-

fifths of state east of the fall line (approximated by Interstate I-95).

conductivitiy A measure of the ability of water to conduct an electrical current. It is dependent on the

concentration of dissolved ions such as sodium, chloride, nitrates, phosphates and metals in

solution.

degradation The lowering of the physical, chemical or biological quality of a waterbody caused by

pollution or other sources of stress.

DENR Department of Environment and Natural Resources.

DO Dissolved oxygen.

drainage area An alternate name for a watershed.

DWQ North Carolina Division of Water Quality, an agency of DENR.

dystrophic Naturally acidic (low pH), "black-water" lakes which are rich in organic matter. Dystrophic

lakes usually have low productivity because most fish and aquatic plants are stressed by low pH water. In North Carolina, dystrophic lakes are scattered throughout the Coastal Plain and Sandhills regions and are often located in marshy areas or overlying peat deposits.

NCTSI scores are not appropriate for evaluating dystrophic lakes.

effluent The treated liquid discharged from a wastewater treatment plant.

EMC Environmental Management Commission.

EPA United States Environmental Protection Agency.

EPT Index This index is used to judge water quality based on the abundance and variety of three orders

of pollution sensitive aquatic insect larvae: Ephemeroptera (mayflies), Plecoptera

(stoneflies) and Trichoptera (caddisflies).

eutrophic Elevated biological productivity related to an abundance of available nutrients. Eutrophic

lakes may be so productive that the potential for water quality problems such as algal

blooms, nuisance aquatic plant growth and fish kills may occur.

eutrophication The process of physical, chemical or biological changes in a lake associated with nutrient,

organic matter and silt enrichment of a waterbody. The corresponding excessive algal growth can deplete dissolved oxygen and threaten certain forms of aquatic life, cause

unsightly scums on the water surface and result in taste and odor problems.

fall line A geologic landscape feature that defines the line between the piedmont and coastal plain

regions. It is most evident as the last set of small rapids or rock outcroppings that occur on

rivers flowing from the piedmont to the coast.

FS Fully supporting. A rating given to a waterbody that fully supports its designated uses and

generally has good or excellent water quality.

GIS Geographic Information System. An organized collection of computer hardware, software,

geographic data and personnel designed to efficiently capture, store, update, manipulate,

analyze and display all forms of geographically referenced information.

habitat degradation Identified where there is a notable reduction in habitat diversity or change in habitat quality.

This term includes sedimentation, bank erosion, channelization, lack of riparian vegetation,

loss of pools or riffles, loss of woody habitat, and streambed scour.

headwaters Small streams that converge to form a larger stream in a watershed. HQW High Quality Waters. A supplemental surface water classification.

HU Hydrologic unit. See definition below.

Hydrilla The genus name of an aquatic plant - often considered an aquatic weed.

hydrologic unit A watershed area defined by a national uniform hydrologic unit system that is sponsored by

the Water Resources Council. This system divides the country into 21 regions, 222

subregions, 352 accounting units and 2,149 cataloging units. A hierarchical code consisting of two digits for each of the above four levels combined to form an eight-digit hydrologic unit (cataloging unit). An eight-digit hydrologic unit generally covers an average of 975 square miles. There are 54 eight-digit hydrologic (or cataloging) units in North Carolina.

These units have been further subdivided into eleven and fourteen-digit units.

hypereutrophic Extremely elevated biological productivity related to excessive nutrient availability.

Hypereutrophic lakes exhibit frequent algal blooms, episodes of low dissolved oxygen or periods when no oxygen is present in the water, fish kills and excessive aquatic plant

growth.

impaired Term that applies to a waterbody that has a use support rating of partially supporting (PS) or

not supporting (NS) its uses.

impervious Incapable of being penetrated by water; non-porous.

Kilograms. To change kilograms to pounds multiply by 2.2046. kg 1bs Pounds. To change pounds to kilograms multiply by 0.4536. loading Mass rate of addition of pollutants to a waterbody (e.g., kg/yr)

macroinvertebrates Animals large enough to be seen by the naked eye (macro) and lacking backbones

(invertebrate).

macrophyte An aquatic plant large enough to be seen by the naked eye.

Moderate biological productivity related to intermediate concentrations of available mesotrophic

nutrients. Mesotrophic lakes show little, if any, signs of water quality degradation while

supporting a good diversity of aquatic life.

MGD Million gallons per day.

mg/l Milligrams per liter (approximately 0.00013 oz/gal).

NCIBI North Carolina Index of Biotic Integrity. A measure of the community health of a

population of fish in a given waterbody.

NH₃-N Ammonia nitrogen.

A source of water pollution generally associated with rainfall runoff or snowmelt. The nonpoint source

> quality and rate of runoff of NPS pollution is strongly dependent on the type of land cover and land use from which the rainfall runoff flows. For example, rainfall runoff from

> forested lands will generally contain much less pollution and runoff more slowly than runoff

from urban lands.

NPDES National Pollutant Discharge Elimination System.

NPS Nonpoint source.

NR Not rated. A waterbody that is not rated for use support due to insufficient data.

Not supporting. A rating given to a waterbody that does not support its designated uses and NS

has poor water quality and severe water quality problems. Both PS and NS are called

impaired.

NSW Nutrient Sensitive Waters. A supplemental surface water classification intended for waters

> needing additional nutrient management due to their being subject to excessive growth of microscopic or macroscopic vegetation. Waters classified as NSW include the Neuse, Tar-Pamlico and Chowan River basins; the New River watershed in the White Oak basin; and the watershed of B. Everett Jordan Reservoir (including the entire Haw River watershed).

NTU Nephelometric Turbidity Units. The units used to quantify turbidity using a turbidimeter.

This method is based on a comparison of the intensity of light scattered by the sample under

defined conditions with the intensity of the light scattered by a standard reference

suspension under the same conditions.

oligotrophic Low biological productivity related to very low concentrations of available nutrients.

Oligotrophic lakes in North Carolina are generally found in the mountain region or in

undisturbed (natural) watersheds and have very good water quality.

ORW Outstanding Resource Waters. A supplemental surface water classification intended to

> protect unique and special resource waters having excellent water quality and being of exceptional state or national ecological or recreational significance. No new or expanded wastewater treatment plants are allowed, and there are associated stormwater runoff

controls enforced by DWQ.

pΗ A measure of the concentration of free hydrogen ions on a scale ranging from 0 to 14.

Values below 7 and approaching 0 indicate increasing acidity, whereas values above 7 and

approaching 14 indicate a more basic solution.

phytoplankton Aquatic microscopic plant life, such as algae, that are common in ponds, lakes, rivers and

estuaries.

Piedmont One of three major physiographic regions in the state. Encompasses most of central North

Carolina from the Coastal Plain region (near I-95) to the eastern slope of the Blue Ridge

Mountains region.

PS Partially supporting. A rating given to a waterbody that only partially supports its

designated uses and has fair water quality and severe water quality problems. Both PS and

NS are called impaired.

riparian zone Vegetated corridor immediately adjacent to a stream or river. See also SMZ.

river basin The watershed of a major river system. North Carolina is divided into 17 major river

basins: Broad, Cape Fear, Catawba, Chowan, French Broad, Hiwassee, Little Tennessee, Lumber, Neuse, New, Pasquotank, Roanoke, Savannah, Tar-Pamlico, Watauga, White Oak

and Yadkin River basins.

river system The main body of a river, its tributary streams and surface water impoundments.

runoff Rainfall that does not evaporate or infiltrate the ground, but instead flows across land and

into waterbodies.

SA Class SA Water Classification. This classification denotes saltwaters that have sufficient

water quality to support commercial shellfish harvesting.

SB Class SB Water Classification. This classification denotes saltwaters with sufficient water

quality for frequent and/or organized swimming or other human contact.

SC Class SC Water Classification. This classification denotes saltwaters with sufficient water

quality to support secondary recreation and aquatic life propagation and survival.

sedimentation The sinking and deposition of waterborne particles (e.g., eroded soil, algae and dead

organisms).

silviculture Care and cultivation of forest trees; forestry.

SOC Special Order by Consent. An agreement between the Environmental Management

Commission and a permitted discharger found responsible for causing or contributing to surface water pollution. The SOC stipulates actions to be taken to alleviate the pollution within a defined time. The SOC typically includes relaxation of permit limits for particular parameters, while the facility completes the prescribed actions. SOCs are only issued to facilities where the cause of pollution is not operational in nature (i.e., physical changes to

the wastewater treatment plant are necessary to achieve compliance).

streamside management zone (SMZ) The area left along streams to protect streams from sediment and other pollutants, protect

streambeds, and provide shade and woody debris for aquatic organisms.

subbasin A designated subunit or subwatershed area of a major river basin. Subbasins typically

encompass the watersheds of significant streams or lakes within a river basin. Every river basin is subdivided into subbasins ranging from one subbasin in the Watauga River basin to 24 subbasins in the Cape Fear River basin. There are 133 subbasins statewide. These subbasins are not a part of the national uniform hydrologic unit system that is sponsored by

the Water Resources Council (see hydrologic unit).

Sw Swamp Waters. A supplemental surface water classification denoting waters that have

naturally occurring low pH, low dissolved oxygen and low velocities. These waters are common in the Coastal Plain and are often naturally discolored giving rise to their nickname

of "blackwater" streams.

TMDL Total maximum daily load. The amount of a given pollutant that a waterbody can assimilate

and maintain its uses and water quality standards.

TN Total nitrogen.
TP Total phosphorus.

tributary A stream that flows into a larger stream, river or other waterbody.

trophic classification Trophic classification is a relative description of a lake's biological productivity, which is

the ability of the lake to support algal growth, fish populations and aquatic plants. The productivity of a lake is determined by a number of chemical and physical characteristics, including the availability of essential plant nutrients (nitrogen and phosphorus), algal growth

and the depth of light penetration. Lakes are classified according to productivity: unproductive lakes are termed "oligotrophic"; moderately productive lakes are termed

"mesotrophic"; and very productive lakes are termed "eutrophic".

TSS Total Suspended Solids.

turbidity An expression of the optical property that causes light to be scattered and absorbed rather

than transmitted in straight lines through a sample. All particles in the water that may scatter or absorb light are measured during this procedure. Suspended sediment, aquatic organisms and organic particles such as pieces of leaves contribute to instream turbidity.

UT Unnamed tributary.

watershed The region, or land area, draining into a body of water (such as a creek, stream, river, pond,

lake, bay or sound). A watershed may vary in size from several acres for a small stream or pond to thousands of square miles for a major river system. The watershed of a major river

system is referred to as a basin or river basin.

WET Whole effluent toxicity. The aggregate toxic effect of a wastewater measured directly by an

aquatic toxicity test.

WS Class WS Water Supply Water Classification. This classification denotes freshwaters used

as sources of water supply. There are five WS categories. These range from WS-I, which provides the highest level of protection, to WS-V, which provides no categorical restrictions

on watershed development or wastewater discharges like WS-I through WS-IV.

WWTP Wastewater treatment plant.