

Hydrology Terms

Knowing the language of water quality helps you communicate effectively with other leaders and experts. These are common terms you may encounter:

Bioretention: an area that provides onsite holding of stormwater through the use of vegetated depressions to collect, store and *infiltrate runoff*; sometimes called rain gardens.

BMP (Best Management Practice): a structural or non-structural method, activity, maintenance procedure or other management practice used alone or in combination to reduce *nonpoint source* inputs to receiving waters in order to achieve water quality protection goals.

Concentrated Flow: runoff that accumulates or converges into well-defined channels, whether man-made or formed naturally by erosion; the opposite of *sheet flow*.

Detention Pond: a low-lying area that is designed to temporarily hold a set amount of water while slowly draining to another location.

Dissolved Oxygen: oxygen within water that is readily available to fish and other aquatic organisms.

Buffer: a naturally vegetated zone adjacent to a stream, wetland or shoreline where development is restricted or controlled to minimize its effects on sensitive resources.

Effluent: wastewater, treated or untreated, that flows out of a treatment plant, sewer or industrial outfall; generally refers to wastes discharged into surface waters.

Erosion: wearing away of rock or soil by the gradual detachment of soil or rock fragments by water, wind, ice and other mechanical and chemical forces.

Estuary: coastal waters situated between rivers and near-shore ocean waters where tidal action and river flow mix fresh and salt water; such areas include bays, sounds, mouths of rivers, salt marshes and lagoons.

Eutrophication: degradation of water quality due to



Hypoxia can cause losses of valuable shellfish beds. (Photo: Courtesy of the N.C. Wildlife Resources Commission)

enrichment by nutrients (primarily nitrogen and phosphorous), which results in excessive plant growth and decay; low *dissolved oxygen* in the water is a common consequence.

Fecal Coliform: bacteria found in the intestinal tracts of warm-blooded animals; presence of high numbers of this bacteria in a water body can indicate the recent release of untreated sewage and/or presence of animal feces; presence may indicate the presence of pathogens harmful to humans.

GIS (Geographical Information System): a computerized database system containing information on natural resources and other factors that can be analyzed and displayed in spatial or map format.

Hydrograph: chart displaying the change of a *hydrologic* variable over time, for example the flow of a stream over time, or the amount of *runoff* from a site or in a *watershed* over time.

Hydrologic Cycle: the movement of water in and on the earth and atmosphere through processes such as precipitation, *infiltration*, *runoff* and evaporation.

Hydrology: the study of the movement, distribution and quality of water on the earth, focusing on both the *hydrologic cycle* and water resources.

Hypoxia: lack of sufficient oxygen in estuaries and coastal waters; effects may include fish kills and shellfish bed losses; sometimes referred to as “dead zones.”



Local leaders learn about water quality BMPs to protect estuarine waters at a Coastal Growth Strategies Course.

Impervious Area: a surface area, such as a parking lot or rooftop, that prevents or retards water from entering the soil, causing water to run off the surface in greater quantities and at an increased rate of flow.

Infiltrate: to filter into or through, as in stormwater filtering into a retention area and the water filtering into the soil.

Nonpoint Source Pollution: sources of water pollution not associated with a distinct discharge source; includes rainwater, erosion, *runoff* from roads, farms and parking lots, and seepage from soil-based wastewater disposal systems.

Permeable: soil or other material that allows the *infiltration* or passage of water or other liquids.

Retrofit: stormwater practices designed to mitigate *erosion*, reduce pollutants in stormwater *runoff* and promote conditions for improved aquatic life; sometimes inserted in a developed landscape where little or no prior stormwater controls existed.

Riparian Buffer: network of plants and other organisms in an environment adjacent to the banks of a stream, river or lake; intercepts *nonpoint source pollution* and controls the physical and chemical environment of adjacent aquatic ecosystems.

Runoff: rainfall or other precipitation that is not absorbed by the soil but rather drains off the land into streams, rivers and other receiving waters.

Sedimentation: build-up of particles of mud, sand, clay, silt and organic matter transported and deposited by water.

Sheet Flow: flowing water evenly distributed over the ground surface; increases the ability of water to *infiltrate* the soil.

Swale: an open drainage channel designed to detain or *infiltrate* stormwater *runoff*.

Turbidity: a cloudy condition in water caused by suspended silt or organic matter.

Watershed: a geographic area in which water, sediment and dissolved materials drain to a common outlet, such as a creek or river.

Wetlands: areas inundated or saturated by surface or ground-water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

For more water quality terms and acronyms, go online to: www.bae.ncsu.edu/programs/extension/publicat/arep/glossary.html.

Information for this document was drawn from:

- Ecological Society of America. *Fact Sheets: Hypoxia*. Retrieved Mar. 20, 2009, from http://www.esa.org/education_diversity/factsheets.php
- Cox, V. N., Danielson, L. E., & Jennings, G. D. (1996). *Glossary of water quality terms and acronym list*. Retrieved Mar. 20, 2009, from <http://www.bae.ncsu.edu/programs/extension/publicat/arep/glossary.html>
- *Leadership Training: Coastal Growth Strategies Course Notebook*. (2008). Raleigh, NC: North Carolina Sea Grant.



Your link to
research and resources
for a healthier coast

North Carolina Sea Grant

NC State University
1575 Varsity Drive, Flex Building Module 1
Campus Box 8605, Raleigh, NC 27695
Phone: 919/515-2454

UNC-SG-09-04D

Spring 2009

This document was developed with funding from the N.C. Fisheries Resource Grant Program and the N.C. Blue Crab and Shellfish Research Program. Printing was funded by the NOAA Coastal Nonpoint Source Pollution Control Program under Grant NA06NOS4190149.