

Appendix G. Glossary

Term	Definition
Accessibility	Provides a relative measure of how difficult it is to reach a specific problem ¹ .
Airshed	Definition: The area where emission sources contributing the most airborne nitrates to the bay ² .
Ammonia	Ammonia occurs naturally and is produced by human activity. It is an important source of nitrogen which is needed by plants and animals. Bacteria found in the intestines can also produce ammonia. Ammonia is applied directly into soil on farm fields, and is used to make fertilizers for farm crops, lawns, and plants. Many household and industrial cleaners also contain ammonia ³ .
Best Management Practices	<i>Best management practices</i> (“BMPs”) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage ⁴ .
Citizens Advisory Committee	<p>CAC is comprised of various stakeholders in the watershed interested in furthering the goals of the Coastal Bays Program. Local fishermen, developers, golf course managers, business owners, community associations, recreational boaters, farmers, and environmentalists will continue to work together to protect the coastal bays. The CAC will:</p> <ul style="list-style-type: none"> • Ensure public involvement during implementation of the CCMP • Recommend changes to the CCMP through continuing planning exercises • Function as a watchdog and advocate for implementation of the CCMP • Ensure that public involvement and education are a central component of the Program • Recommend legislative changes necessary to further the goals of the CCMP⁵
Clean Air Act	EPA's mission is to protect human health and the environment. To achieve this mission, EPA implements a variety of programs under the

¹ MDE. Stream Corridor Assessment. February 2006. Page 12.

² Chesapeake Bay Program. Air Pollution. Available at <http://www.chesapeakebay.net/airpollution.aspx?menuitem=14693>. Accessed April 10, 2008.

³ Agency for Toxic Substances and Disease Registry. “ToxFAQs for Ammonia”. September 2004. Available online <http://www.atsdr.cdc.gov/tfacts126.html>.

⁴ “EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.” *Code of Federal Regulations*, 40 CFR 122.2. Accessed May 6, 2008.

⁵ CCMP. Page 127.

Appendix G. Glossary

Term	Definition
	<p>Clean Air Act that focus on:</p> <ul style="list-style-type: none"> • reducing outdoor, or ambient, concentrations of air pollutants that cause smog, haze, acid rain, and other problems; • reducing emissions of toxic air pollutants that are known to, or are suspected of, causing cancer or other serious health effects; and • phasing out production and use of chemicals that destroy stratospheric ozone. <p>These pollutants come from stationary sources (like chemical plants, gas stations, and power plants) and mobile sources (like cars, trucks, and planes)⁶.</p>
Clean Water Act	<p>In 1972, Congress enacted the first comprehensive national clean water legislation in response to growing public concern for serious and widespread water pollution. The Clean Water Act is the primary federal law that protects our nation's waters, including lakes, rivers, and coastal areas.</p> <p>The Clean Water Act focuses on improving the quality of the nation's waters. It provides a comprehensive framework of standards, technical tools and financial assistance to address the many causes of pollution and poor water quality, including municipal and industrial wastewater discharges, polluted runoff from urban and rural areas, and habitat destruction. The Clean Water Act:</p> <ul style="list-style-type: none"> • requires municipalities and major industries to meet performance standards to ensure pollution control; • charges states and tribes with setting specific water quality criteria appropriate for their waters and developing pollution control programs to meet them; • provides funding to states and communities to help them meet their clean water infrastructure needs; and • protects valuable wetlands and other aquatic habitats through a permitting process that ensures development and other activities are conducted in an environmentally sound manner⁷.
Concentration	The amount of a substance in the water ⁸ .
Conductivity	Conductivity is a measure of the ability of water to pass an electrical current. Conductivity in water is affected by the presence of inorganic

⁶ Environmental Protection Agency. "The Plain English Guide to the Clean Air Act—Key Elements of the Clean Air Act". Available online <http://www.epa.gov/air/caa/peg/elements.html>.

⁷ Environmental Protection Agency. "Clean Water Act Enforcement." Available online <http://www.epa.gov/Compliance/civil/cwa/index.html>.

⁸ Primrose, Niles. MDE. Email communications. April 30, 2008.

Appendix G. Glossary

Term	Definition
	<p>dissolved solids such as chloride, nitrate, sulfate, and phosphate anions (ions that carry a negative charge) or sodium, magnesium, calcium, iron, and aluminum cations (ions that carry a positive charge). Organic compounds like oil, phenol, alcohol, and sugar do not conduct electrical current very well and therefore have a low conductivity when in water. Conductivity is also affected by temperature: the warmer the water, the higher the conductivity. For this reason, conductivity is reported as conductivity at 25 degrees Celsius (25 C).</p> <p>Conductivity in streams and rivers is affected primarily by the geology of the area through which the water flows. Streams that run through areas with granite bedrock tend to have lower conductivity because granite is composed of more inert materials that do not ionize (dissolve into ionic components) when washed into the water. On the other hand, streams that run through areas with clay soils tend to have higher conductivity because of the presence of materials that ionize when washed into the water. Ground water inflows can have the same effects depending on the bedrock they flow through.</p> <p>Discharges to streams can change the conductivity depending on their make-up. A failing sewage system would raise the conductivity because of the presence of chloride, phosphate, and nitrate; an oil spill would lower the conductivity⁹.</p>
Correctibility	Provides a relative measure on how easily the field teams believe the problem can be corrected ¹⁰ .
Critical Area Resource Conservation Area	This designation limits the 1,000 feet landward from high tide to 1 dwelling per 20 acres and encourages resource based land uses, for example, farming and forestry ¹¹ .
Denitrification	New septic systems employ a nitrogen removal process, or denitrification system, that can replace older conventional septic systems which generate nitrogen loads. These systems can remove 40-80 percent of total nitrogen ¹² .
Dissolved oxygen	The stream system both produces and consumes oxygen. It gains oxygen from the atmosphere and from plants as a result of photosynthesis. Running water, because of its churning, dissolves more oxygen than still water, such as that in a reservoir behind a dam. Respiration by aquatic

⁹ Environmental Protection Agency. "Monitoring and Assessing Water Quality—5.9 Conductivity." Available online <http://www.epa.gov/owow/monitoring/volunteer/stream/vms59.html>.

¹⁰ MDE. Stream Corridor Assessment. February 2006. Page 11.

¹¹ County Comprehensive Plan document.

¹² Environmental Protection Agency. "Onsite Wastewater Treatment Systems Technology fact Sheet 9: Enhanced Nutrient Removal—Nitrogen". EPA 625/R-00/008. Available online <http://www.epa.gov/nrmrl/pubs/625r00008/html/tfs9.htm>.

Appendix G. Glossary

Term	Definition
	<p>animals, decomposition, and various chemical reactions consume oxygen.</p> <p>Wastewater from sewage treatment plants often contains organic materials that are decomposed by microorganisms, which use oxygen in the process. (The amount of oxygen consumed by these organisms in breaking down the waste is known as the biochemical oxygen demand or BOD.) Other sources of oxygen-consuming waste include stormwater runoff from farmland or urban streets, feedlots, and failing septic systems.</p> <p>Oxygen is measured in its dissolved form as dissolved oxygen (DO). If more oxygen is consumed than is produced, dissolved oxygen levels decline and some sensitive animals may move away, weaken, or die.</p> <p>DO levels fluctuate seasonally and over a 24-hour period. They vary with water temperature and altitude. Cold water holds more oxygen than warm water and water holds less oxygen at higher altitudes. Thermal discharges, such as water used to cool machinery in a manufacturing plant or a power plant, raise the temperature of water and lower its oxygen content. Aquatic animals are most vulnerable to lowered DO levels in the early morning on hot summer days when stream flows are low, water temperatures are high, and aquatic plants have not been producing oxygen since sunset¹³.</p>
Implementation Committee	<p>Responsibilities of the IC include:</p> <ul style="list-style-type: none"> • Coordinate implementation activities of responsible entities • Obtain commitments from all sectors implementing CCMP actions • Identify barriers to CCMP implementation • Develop remedies that remove barriers to implementing actions • Assure that “plans” identified in the CCMP are developed by responsible entities • Recommend CCMP changes to the Policy Committee through the Executive Director and the Foundation • Recommend priorities for CCMP implementation • Solicit resources and direct programs to implement actions in the CCMP¹⁴
Nitrogen, or Nitrogen compounds	Nitrogen compounds include nitrogen oxides, ammonia and organic nitrogen. Nitrogen oxides are primarily released into the air as a by-

¹³ Environmental Protection Agency. “Monitoring and Assessing Water Quality—5.2 Dissolved Oxygen and Biochemical Oxygen Demand.” Available online <http://www.epa.gov/owow/monitoring/volunteer/stream/vms52.html>.

¹⁴ CCMP. Page 126.

Appendix G. Glossary

Term	Definition
	<p>product of combustion: the burning of fossil fuels like oil, gas or coal. Ammonia is primarily released into the air by evaporation and emissions from industry processes. Every living creature—including humans—releases wastes that include ammonia. Organic nitrogen is released through organic nitrogen compounds (like pollen, nicotine and caffeine) that contain carbon¹⁵.</p>
Nonpoint source	<p>Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water. These pollutants include:</p> <ul style="list-style-type: none"> • Excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas; • Oil, grease, and toxic chemicals from urban runoff and energy production; • Sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks; • Salt from irrigation practices and acid drainage from abandoned mines; • Bacteria and nutrients from livestock, pet wastes, and faulty septic systems; <p>Atmospheric deposition and hydromodification are also sources of nonpoint source pollution.</p> <p>States report that nonpoint source pollution is the leading remaining cause of water quality problems. The effects of nonpoint source pollutants on specific waters vary and may not always be fully assessed. However, we know that these pollutants have harmful effects on drinking water supplies, recreation, fisheries, and wildlife.¹⁶</p>
Phosphorus	<p>Phosphorus (P) is an essential element for plant growth and increased crop yields. However, because soil phosphorus is commonly immobilized in forms unavailable for crop uptake, phosphorus amendments—mineral fertilizer or animal manure—are needed to achieve desired crop yields. Since phosphorus is often bound more tightly to soils than nitrogen, a different approach to control agricultural phosphorus losses is required (National Research Council 1993).</p>

¹⁵ Chesapeake Bay Program. Air Pollution. Available at

<http://www.chesapeakebay.net/airpollution.aspx?menuitem=14693>. Accessed April 10, 2008.

¹⁶ Environmental Protection Agency. Polluted runoff (Nonpoint Source Pollution). Available online <http://www.epa.gov/owow/NPS/ga.html>.

Appendix G. Glossary

Term	Definition
	<p>Despite its benefit to crop production, phosphorus becomes a pollutant when it enters surface water in substantial amounts. Excessive phosphorus concentrations in surface water can accelerate eutrophication, resulting in increased growth of undesirable algae and aquatic weeds. This growth can impair water use for industry, recreation, drinking, and fisheries. Although nitrogen and carbon are also associated with accelerated eutrophication, most attention has focused on phosphorus as the limiting element¹⁷. Phosphorus is considered to be a limiting factor in aquatic systems, as aquatic organisms quickly utilize PO₄.</p> <p>The amount of phosphates that water can hold without tipping the balance in the system toward eutrophication varies. In a river draining into a natural lake, the phosphate level should not exceed 0.05 mg/L. Natural lake level phosphates should not exceed 0.025 mg/L. A river that is not flowing into a lake should not exceed 0.1 mg/L (USEPA Quality Criteria for Water, 1986). Phosphorus is the major contributing factor in the process of eutrophication. Inputs of phosphorus come from erosion, fertilizers, detergents, and the draining of wetlands¹⁸.</p> <p>Because it is difficult to control the exchange of nitrogen and carbon between the atmosphere and a waterbody and because of the fixation of atmospheric nitrogen by some blue-green algae, phosphorus control is seen as the primary way to reduce the accelerated eutrophication of surface water¹⁹.</p>
Point source	<p>Water pollution degrades surface waters making them unsafe for drinking, fishing, swimming, and other activities. As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches.</p> <p>Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. In most cases, the NPDES permit program is administered by authorized states. Since its introduction in 1972, the NPDES permit program is responsible for significant improvements to our Nation's water quality²⁰.</p>

¹⁷ Natural Resources Conservation Service. *Water Quality and Agriculture: Status, Conditions, and Trends*. Working paper #16. July 1997. Page 24.

¹⁸ DNR. "Total Phosphorus." Available online http://www.dnr.state.md.us/streams/status_trend/tp.html.

¹⁹ Natural Resources Conservation Service. *Water Quality and Agriculture: Status, Conditions, and Trends*. Working paper #16. July 1997. Page 24.

²⁰ Environmental Protection Agency. "National Pollutant Discharge Elimination System (NPDES)." Available online <http://cfpub.epa.gov/npdes/index.cfm>.

Appendix G. Glossary

Term	Definition
Policy Committee	Members of the PC include Secretary of DNR, MDE and MDA, Ocean Pines Director, EPA regional Administrator, Assateague Island National Park Service Superintendent, Worcester County Commissioners (Districts 1 thru 5 by basin), Ocean City Mayor, Ocean City Town Council President, Berlin Mayor, Citizens Advisory Committee Chair, STAC Chair, and Two Fund-raising Committee Members ²¹
Scientific & Technical Advisory Committee	The technical committee is comprised of the region’s most knowledgeable natural resource scientists and is responsible for providing important scientific information for program decision-making ²² .
Sensitive Species Review Areas	Sensitive Species Project Review Areas or SSPRA is a digital data layer which primarily represents the general locations of documented rare, threatened and endangered species. Created and updated by staff of the DNR Wildlife and Heritage Service, this data layer contains non-attributed, buffered polygons and does not delineate or strictly represent habitats of threatened and endangered species. The data layer incorporates various types of regulated areas under the Critical Area Criteria and other areas of concern statewide, including: Natural Heritage Areas, Listed Species Sites, Other or Locally Significant Habitat Areas, Colonial Waterbird Sites, Waterfowl Staging and Concentration Areas, Nontidal Wetlands of Special State Concern, and Geographic Areas of Particular Concern ²³ .
Severity	Indicates how bad a specific problem is relative to others in the same problem category ²⁴ .
U. S. EPA 319 Nonpoint Source	Congress amended the Clean Water Act (CWA) in 1987 to establish the section 319 Nonpoint Source Management Program because it recognized the need for greater federal leadership to help focus State and local nonpoint source efforts. Under section 319, State, Territories, and Indian Tribes receive grant money which support a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects ²⁵ .
Watershed	The land that water flows across or under on its way to a stream, river, or lake. Within each watershed, all water runs to the lowest point—a

²¹ CCMP. Page 124.

²² CCMP. Page 127.

²³ DNR. Natural Heritage Program - Sensitive Species Project Review Areas (SSPRA).

<http://www.dnr.state.md.us/wildlife/sspra.asp>.

²⁴ MDE. Stream Corridor Assessment. February 2006. Page 11.

²⁵ Environmental Protection Agency. "Polluted Runoff (Nonpoint Source Pollution)." Available online <http://www.epa.gov/owow/nps/cwact.html>.

Appendix G. Glossary

Term	Definition
	stream, river, or lake. On its way, water travels over the surface and across farm fields, forest land, suburban lawns, and city streets, or it seeps into the soil and travels as ground water ²⁶ .
Yield	<p>The yield information shows where the major contribution is coming from on a per unit area (acres, hectares, etc.) basis and is calculated using the following formula²⁷.</p> $\text{Yield per unit area} = \frac{(\text{Concentration} \times \text{Stream discharge}) \text{ load}}{\text{Watershed area}}$ <p>Although loads can be instructive, the load could be the same from a small and large watershed.</p>

²⁶ United States Department of Agriculture. Natural Resources Conservation Service. "What is a Watershed?" Program Aid Number 420. Revised February 1996.

²⁷ Primrose, Niles. MDE. Email communications. April 30, 2008.