



# U.S. Environmental Protection Agency

## Mid-Atlantic Integrated Assessment

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## Mid-Atlantic Highlands Streams Assessment

### Appendix C: Glossary

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**Acid Deposition:** A complex chemical and atmospheric phenomenon that occurs when emissions of sulfur and nitrogen compounds and other substances are transformed by chemical processes in the atmosphere, often far from the original sources, and then deposited on earth in either a wet or dry form. The wet forms, popularly called "acid rain," can fall as rain, snow, or fog. The dry forms are acidic gases or particulates.

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**Algae:** Simple rootless plants that grow in bodies of water (e.g., estuaries) at rates in relative proportion to the amounts of nutrients (e.g., nitrogen and phosphorus) available in the water.

**Anthropogenic:** Originating from man, not naturally occurring.

**Assessment:** Interpretation and evaluation of scientific results for the purpose of answering policy-relevant questions about ecological resources, including (1) determination of the fraction of the population that meets a socially defined value and (2) association among indicators of ecological condition and stressors.

**Atmospheric Deposition:** The flux (flow) of chemicals and materials from the atmosphere to the earth's surface. Depending on the chemical or material, "dry" deposition (e.g., by particles) can be less than, equal to, or greater than "wet" deposition (e.g., precipitation).

**Attribute:** Any property, quality, or characteristic of sampling unit. For example, attributes of a tree, might include height and leaf type. For fish, such attributes would be size, feeding, or spawning habitat.

**Base Flow:** Sustained flow in a stream primarily from a groundwater discharge. Sometimes known as non-storm or dry weather flow.

**Benthos:** Plants or animals that live in or on the bottom of an aquatic environment such as a stream.

**Biological Assemblage:** A grouping of species from the same general category of living organisms such as fish, aquatic insects, hard wood trees, or riparian vegetation.

**Biota:** Living organisms including both plants and animals found in a given area.

**Buffer:** A solution resistant to pH changes, or whose chemical make up tends to neutralize acids or bases without a change in pH.

**Carcinogenic:** Cancer causing

**Channelization:** The artificial enlargement, straightening, or realignment of a stream channel.

**Community:** The assemblage of populations of plants and animals that interact with each other and their environment. The community is shaped by populations and their geographic range, the types of areas they inhabit, species diversity, species interactions, and the flow of energy and nutrients through the community.

**Competitor:** An organism rivaling another organism in the same area for food, habitat, or other resource in limited supply.

**Conductivity:** A measure of the capacity of water to conduct electricity. Conductivity provides an indication of the concentration of dissolved minerals in the water.

**Detritus:** Non-living organic matter (e.g., dead organisms or leaves) in water.

**Ecology:** The relationship of living things to one another and their environment, or the study of such relationships.

**Ecoregion:** A relatively homogeneous geographic area perceived by simultaneously analyzing a combination of causal and integrative factors including land surface form, soils, land uses, and potential natural vegetation.

**Ecosystem:** A natural unit formed by the interaction of a community of plants and animals with their environment (physical, chemical, and biological).

**Effluent:** The discharge to a body of water from a defined or point source, generally consisting of a mixture of waste and water from industrial or municipal facilities.

**EMAP:** Environmental Monitoring and Assessment Program - an EPA Office of Research and Development research program.

**Eutrophication:** A condition in an aquatic ecosystem where high nutrient concentrations stimulate blooms of algae (e.g., phytoplankton). Algal decomposition may lower dissolved oxygen concentrations. Although eutrophication is a natural process in the aging of lakes and some estuaries, it can be accelerated by both point and nonpoint sources of nutrients.

**Food Web:** An assemblage of organisms in an ecosystem, including plants, herbivores, and carnivores, which shows the relationship of who eats whom.

**Habitat:** The place where a population or community (e.g., microorganisms, plants, animals) lives and its surroundings, both living and non-living.

**Headwater:** The area that is the source or origin of a stream, above which no stream exists.

**Index:** A summary of indicator scores.

**Invertebrates:** Animals that lack a spinal column or backbone, including molluscs (e.g., clams and oysters), crustaceans (e.g., crabs and shrimp), insects, starfish, jellyfish, sponges, and many types of worms that live in the benthos.

**Land Cover:** Anything that exists on, and is visible from above, the earth's surface. Examples include vegetation, exposed or barren land, water, snow, and ice.

**Land Use:** The way land is developed and used in terms of the kinds of

anthropogenic activities that occur (e.g., agriculture, residential areas, industrial areas).

**Landscape:** The set of traits, patterns, and structure of a specific geographic area, including its biological composition, its physical environment, and its anthropogenic patterns. An area where interacting ecosystems are grouped and repeated in similar form.

**Mammalian:** Related to animals that are warm-blooded higher vertebrates that nourish their young with milk and have skin with hair

**Map Scale:** A statement of a measure on the map and the equivalent measure on the earth, often expressed as a representative fraction of distance, such as 1:24,000.

**Metric:** A measurement or mathematical function used to represent some property or feature of living organisms. For example, the number of fish species intolerant of pollution is one metric included in the fish Index of Biotic Integrity.

**Mine Tailings:** Residue left from mining coal, ores, or other material. These residues can leach or contribute pollutants to streams.

**Monitoring:** The periodic or continuous collection of data that is used to determine the condition ecological resources.

**Nonpoint Source:** Refers to pollution that enters water from dispersed and uncontrolled sources, such as surface runoff, rather than through pipes.

**Nutrients:** Essential chemicals (e.g., nitrogen and phosphorus) needed by plants for growth. Excessive amounts of nutrients can lead to degradation of water quality (i.e. eutrophication) by promoting excessive growth, accumulation, and subsequent decay of plants, especially algae (phytoplankton).

**Order:** A taxonomic unit in the scientific classification for plants and animals. an order is the unit in between family and class.

**Organic Contaminants:** Carbon containing waste originating from domestic or industrial sources contained in plant or animal matter

**Parasite:** An organism that lives off another organism or host for survival and usually injures the host.

**Perturbation:** A disturbance of motion, course, arrangement or structure that creates confusion.

**Point Source:** Refers to a source of pollutants from a single point of conveyance, such as a pipe. For example, the discharge from a sewage treatment plant or factory is a point source.

**Population:** A group of organisms that a capable of interbreeding, which typically represents a biological level of organization equivalent to a species.

**Predator:** An animal that kills and consumes other animals for its food.

**ppb:** Parts per billion equivalent to micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ) or micrograms per liter ( $\mu\text{g}/\text{L}$ ).

**ppm:** Parts per million; equivalent to micrograms per gram ( $\mu\text{g}/\text{g}$ ) or milligrams per liter ( $\text{mg}/\text{L}$ ).

**Sampling Methods:** Procedures and practices used to collect or measure physical, chemical or biological material (e.g., temperature, water, organisms) in or from the environment.

**Scale:** A distinctive relative size, extent or degree of an area. For example, one scale of measure or study might be an individual stream while a larger scale of measure or study might be a watershed that contains many streams.

**Sediment:** Mud, sand, silt, clay, shell debris, and other particles that settle on the bottom of rivers, lakes, estuaries, and oceans.

**Species:** A group of individuals similar in certain morphological and physiological characteristics that are capable of interbreeding and are reproductively isolated from all other such groups.

**Stream Reach:** Portion of a stream; typically of a stream between the point where a stream enters (confluence) above to the point where a stream enters (confluence) below. Stream reaches can be a specific distance along a stream that was sampled for fish or aquatic insects.

**Stressor:** Any physical, chemical, or biological entity that can cause or induce an adverse response.

**Surface Water:** Water in streams, lakes or estuaries that is visible on the surface of the earth. In contrast to groundwater, which is below the ground and not visible.

**Threatened, or Endangered:** Living organisms placed in a special category for protection by the Endangered Species Act of 1973.

**Toxic Substances (or material):** Chemical compounds that are poisonous, carcinogenic, or otherwise directly harmful to plants and animals.

**Value:** A characteristic of the environment that contributes to the quality of life of an area's inhabitants; for example, the ability of an area to provide desired functions such as food, clean water and air, aesthetic experience, recreation, and desired animal and plant species.

**Water Column:** An imaginary cylinder of water from the water surface to the sediment that is used to describe the location of physical, chemical or biological properties or entities.

**Watershed:** The entire area of land whose runoff of water, sediments, and dissolved materials (e.g., nutrients, contaminants) drain into a river, lake, estuary, or ocean.

**Wetlands:** Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or where shallow water covers the land and where at least one of the following attributes holds: (1) at least periodically, the land supports aquatic plants predominantly; (2) undrained hydric soils are the predominant substrate; and (3) at some time during the growing season, the substrate is saturated with water or covered by shallow water (Cowardin et al. 1979). An area that is saturated by surface or ground water with vegetation adapted for life under those soil conditions. Examples of wetlands include swamps, bogs, fens, and marshes.

**Zooplankton:** Very small, some even microscopic, animals that are suspended in the water and have very limited powers of moving against currents. These animals move primarily because the water carries or transports them.

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