

# Glossary

## Aerosols

Tiny particles and droplets suspended in the atmosphere, including carbon-based (organic) aerosols, that contribute to haze and the formation of particulate matter. Aerosols can come from natural sources, such as vegetation, and human-made sources, such as gasoline evaporation, use of solvents and the combustion of fuels in power plants, vehicles and other sources.

## Air Quality Index (AQI)

A national rating system developed by EPA that indicates whether or not the air quality presents a potential threat to human health on any given day.

## Air toxics

Toxic air pollutants, or air toxics, is one of two major categories of air pollution as defined by the Clean Air Act and includes compounds such as benzene, acetaldehyde and formaldehyde.

## Aquatic ecosystem

Water-based ecosystems that include small streams, large rivers, lakes and estuaries where the state's major rivers meet the sea.

## Aquifer

A geologic formation, such as crystalline bedrock, limestone or sand, that can store and release significant quantities of groundwater.

## Benthic macroinvertebrates

Small insects and insect-like animals that live in or near the bottom of streams, rivers and other aquatic ecosystems. They are an important food source for fish and an essential link in the aquatic food chain. They are also used as an indicator of the health of these water bodies.

## Best management practices (BMPs)

Commonsense, economical and effective methods to minimize nonpoint source water pollution. BMPs are designed to prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface or groundwater, protecting water quality from adverse effects of various human activities.

## Biochemical oxygen demand (BOD)

The amount of oxygen required by microbes to break down organic matter in the water. Wastewater from sewage treatment plants contains organic materials that are decomposed by microorganisms, which use oxygen in the process. Other sources of oxygen consuming waste include stormwater runoff from farmland or urban streets, feedlots and failing septic systems.

## Biological diversity

Also called biodiversity, it is the variety among living organisms and the habitats and ecosystems in which they live. The number of different types of animal and plant species in a given area is a component of biodiversity, but it also includes variety ranging from genetic differences in a population to variability among ecosystems.

## Brownfield

Land that, in a past use, was contaminated with hazardous substances or is suspected of being contaminated; for example, land that was previously occupied by a chemical manufacturer. This land is often, but not always, abandoned.

## Chlorophyll

A plant pigment measured to determine the amount of algae in a water body.

## Clean Air Act

The primary federal law in the U.S. governing air pollution.

## Clean Water Act

The primary federal law in the U.S. governing water pollution.

## Community

Natural communities refer to groups of interacting plants and animals.

## Community water systems

Public water systems that supply water to the same population (at least 25 people) year-round.

## Conservation design

A planning and design approach to residential and commercial development in which buildings are grouped together on part of the site while permanently protecting natural features on the remainder of the site, usually through easements or other mechanisms that ensure protection in perpetuity. Also called conservation subdivision design.

## Criteria pollutants

Are defined by the Clean Air Act and have health-based, air quality standards set by EPA. The six criteria pollutants are: carbon monoxide, sulfur dioxide, lead, ozone, nitrogen dioxide and particulate matter.

**Designated uses**

Part of the water quality standard for a water body (see entry for “water quality standard”). All waters in the state have a specific designated use, such as drinking water, fishing, recreation, wild and scenic or coastal fishing. There are also special designations for trout streams, waters that support shell fishing and outstanding natural resource waters.

**Discharge areas**

Portions of an aquifer where groundwater flows into another water body (e.g., springs, lakes, wetlands, streams or oceans).

**Dissolved oxygen**

The amount of oxygen in surface water. Just as humans cannot survive without oxygen, fish and other aquatic life must have an adequate amount of oxygen in the water to live.

**Ecoregion**

Large areas, covering tens of thousands of square miles, which are geographically and ecologically defined. An ecoregion has a common underlying geology and distinctive landforms, climate, soil types and plant and animal communities.

**Ecosystem**

Ecosystems encompass all the plants and animals in a given area, the interactions between them and the physical environment in which they live.

**Ecosystem services**

The benefits people obtain from ecosystems. These include the processes that maintain ecosystem function as well as direct benefits such as production of food and fiber, support of recreational activities, removal of pollution and purification of air and water. Other ecosystem services range from climate regulation and flood control to less tangible spiritual and educational values.

**Exceedance**

When the amount of a specific air pollutant surpasses the air quality standard for a specific period of time. When there are more exceedances than allowed in a given time period, the area can be declared an air quality non-attainment area.

**Exposure pathway**

The physical route a pollutant takes to the human body, such as through drinking water or coming in contact with soil.

**Fine particulate matter**

A type of air pollution composed of particles that are 2.5 microns in diameter and smaller (less than 1/20th the diameter of one strand of human hair). Fine particulates, including smoke, dust, fly ash and liquid droplets, can remain suspended in the air for long periods of time. Particles this small can penetrate deep into the human respiratory system and contribute to respiratory and cardiopulmonary disease. Particulate matter results from all types of burning, including combustion of fuels in motor vehicles, power plants and industrial facilities.

**Groundwater**

Water beneath the earth's surface. Groundwater can come to the surface in the form of a spring or discharge directly to streams, rivers and other water bodies. Groundwater supplies water to wells and is one of the two major sources of the water used in Georgia.

**Habitat**

The physical features of an area and the vegetation found there, which determines the suitability of that area for different species.

**Habitat fragmentation**

The breaking up of a continuous habitat into smaller fragments. Habitat fragmentation is mainly caused by human activities such as conversion of forests into agricultural or developed areas, but can also be caused by natural processes such as fire. Fragmentation decreases habitat quality.

**Hazardous Site Inventory (HSI)**

A list of sites in the state where there has been a release (or a suspected release) of a hazardous substance above a specific amount.

**High quality habitat**

The quality of habitat is determined, in part, by the size and shape of intact areas or patches of natural vegetation. High quality patches of habitat are generally larger, provide different types of habitat on the edges and in the center, and are relatively compact. In larger areas with well-defined central cores, species are less likely to suffer from predators, parasites or human encroachment.

**Impervious cover**

Surfaces through which water cannot penetrate, such as paved streets, roofs and parking lots. These constructed surfaces prevent rain from soaking into the ground and cause stormwater to run off more quickly.

**Index of Biotic Integrity (IBI)**

A tool used to evaluate the condition of aquatic communities (e.g., fish, macroinvertebrate). It combines several measures to generate ratings of community condition. The fish IBI uses the different types and number of fish species, the physical condition of the fish and their position in the food chain. Ratings can be used to compare regions or changes over time.

**Instream uses**

All the human and ecological uses of surface waters that occur within the banks of streams, rivers and lakes. These include dilution and processing of wastewater, navigation, recreation and hydropower production, as well as the water needed for fish and wildlife and ecosystem health.

**Land conversion**

A change in land use from one type to another (e.g., from agricultural or forest land to a residential development).

**Land cover**

Land cover refers to the mix of vegetation, human structures, bare ground and water at the surface of the earth. Some types of land cover, like forested wetlands, are the vegetation naturally found in an area. Other types, like agriculture, are lands converted or altered for human use.

**Land stewardship**

The management of land to protect natural habitat and maintain biological diversity.

**Leachate**

Liquid created as rain or groundwater filters through a landfill, picking up contaminants along the way. If this liquid is not properly managed (i.e., captured and treated), it can seep into and contaminate soil and groundwater.

**Low impact development**

A planning and design approach to stormwater management that emphasizes the use of natural features and replication of the pre-development movement of water into the soil.

**Methylmercury**

One of several different chemical forms of mercury. It is a powerful toxin that remains in the environment for a long time and can readily enter the food chain, accumulating in the bodies of fish, animals and humans.

**Mobile sources of air pollution**

Vehicles that travel on roads, such as gasoline- or diesel-powered motor vehicles (e.g., cars, trucks, buses and motorcycles) as well as off-road vehicles, such as equipment used in construction, farming, and lawn and garden activities and off-road recreational vehicles. Aircraft and trains are also considered mobile sources.

**Nitrogen oxides (NOx)**

The generic term for a group of gases that contain nitrogen and oxygen in varying amounts. Nitrogen oxides play a key role in the formation of ozone and particulate matter. Nitrogen dioxide is one of the six criteria air pollutants defined by the EPA.

**Non-attainment area**

Declared when a specific air pollutant surpasses the air quality standard for a specific period of time (known as an exceedance). When there are more exceedances than allowed in a given time period, the area is determined to be non-attainment.

**Nonpoint source pollution**

Water pollution that comes from diffuse sources. Contaminants include bacteria and nutrients from livestock, pet wastes and faulty septic systems; sediments from improperly managed construction sites, crop and forestlands and eroding stream banks; oil, grease and toxic chemicals from urban runoff and energy production; excess fertilizers, herbicides and insecticides from agricultural lands and residential areas, and mercury from coal-fired power plants and other sources of combustion. As rainfall moves across the land, it picks up and carries these pollutants with it, eventually depositing them into lakes, rivers, wetlands and coastal waters.

**Offstream uses**

Offstream uses of water occur after water is withdrawn from a water body and transported for use. They include water for thermoelectric cooling, household use, commercial and industrial purposes, and agricultural production.

**Organochlorines**

Human-made chemicals that include polychlorinated biphenyls (PCBs); DDT and its by-products; and the pesticides dieldrin, chlordane and toxaphene. These compounds contribute to Georgia's recommended restrictions on fish consumption.

**Oxygen demanding substances**

Natural and human-made organic matter that require oxygen for decomposition in streams, rivers, and lakes. Microorganisms such as bacteria consume oxygen in order to decompose these substances. When levels of oxygen-demanding substances are too high, consumption of oxygen for decomposition can rob fish and other aquatic organisms of the oxygen they need to live.

**Ozone**

A gas that forms when nitrogen oxides and volatile organic compounds react in the presence of sunlight. Ground-level ozone can inflame and damage the lining of the lungs, reduce lung function and aggravate asthma. It is one of the six criteria air pollutants as defined by EPA.

**Pervious cover**

Surfaces through which water can penetrate into the soil, such as grass, gravel, and specialized porous paving materials. These surfaces allow rain to soak into the ground, decreasing stormwater runoff.

**Point source pollution**

Water pollution that comes from a single source or point — e.g., wastewater flowing a pipe, an industrial facility or a wastewater treatment plant.

**Protected species**

Animals and plants designated by the Georgia Department of Natural Resources and the U.S. Fish and Wildlife Service as endangered, threatened, rare or unusual.

**Public water system**

Serves at least 25 people for at least 60 days a year, as defined by EPA.

**Recharge areas**

Locations where water is added to an aquifer. Shallow aquifers receive most of their water from rainfall. Deeper aquifers are recharged by leakage from adjacent aquifers and by rainfall where the aquifer is at or near the surface. Aquifers that meet the surface also may be recharged by water from streams and rivers. Groundwater recharge occurs all over Georgia.

**Riparian**

Lands that lie directly along rivers, streams and other bodies of water. Also known as streamside lands.

**River basin**

The area of land drained by a river and its tributaries. It includes the land surfaces drained by the many streams and creeks that flow downhill into one another and eventually into one river. Georgia has 14 major river basins.

**Saltwater intrusion**

The migration of salty or brackish water into freshwater aquifers. Saltwater intrusion may occur naturally, but it can also be caused or exacerbated by groundwater pumping.

**Sediments**

Loose particles of sand, clay, silt and other substances that lie at the bottom of a water body or are transported by flowing water. They come from the weathering of rock, erosion of soil, and decomposition of plants, animals, and other organic matter. Sediments can be deposited by wind, water or ice.

**Stationary sources of air pollution**

Air pollution from factories, power plants, refineries, incinerators, dry cleaners, service stations and residential backyard burning, among others.

**Sulfur dioxide (SO<sub>2</sub>)**

A gas formed when fuel containing sulfur, such as coal and oil, is burned. It is one of the six criteria air pollutants defined by the EPA and is a key component in the formation of particulate matter in the atmosphere.

**Surface waters**

Include rivers, lakes, streams, ponds and reservoirs. Surface water is one of the two major sources of the water used in Georgia.

**Sustainable environment**

Where natural resources are protected and managed to meet the needs of the current and future generations.

**Terrestrial ecosystems**

Land-based ecosystems that, in Georgia, range from the live-oak seaside forests of the coast to the rock outcrops of north Georgia.

**Tipping fee**

The cost charged to dispose of solid waste at a landfill.

**Total maximum daily load (TMDL)**

The total amount of a specific pollutant (or the upper limit) a water body can receive and still meet its designated uses (see entry for "designated use").

**Water quality standards**

Define the goals for a water body by designating its uses (see entry for "designated use") and setting criteria to protect those uses. Water quality criteria are designed to protect each water body's designated use. Some criteria are narrative — text descriptions of required water quality conditions. Others are numeric criteria that define limits on acceptable amounts of specific pollutants.

**Watershed**

An area of land where all the water drains to the lowest point — usually a stream, lake or river. Rain runs off land in the watershed through a network of gullies, creeks and streams to the point on the stream, river or lake that is defined as the outlet of the watershed.

**Wetlands**

Areas that are inundated or saturated by water often enough to support vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs.

**Working lands**

Lands that have been put to use generally for human benefit. They include lands used for forestry and agriculture as well as for solid waste disposal (landfills) and brownfield development.