
GLOSSARY OF TECHNICAL TERMS

Accretion: The gradual accumulation of new material on top of older sediments or soils.

Accuracy: The closeness of a measured value to the true value (see also: precision).

Acre-foot (ac-ft): The volume of liquid required to cover one acre to a depth of one foot.

Adaptive management: The application of scientific information and explicit feedback mechanisms to refine and improve future management decisions.

Advanced Treatment Technologies (ATTs): Biological and chemical treatments designed to reduce phosphorus levels in stormwater to very low concentrations.

Adverse impact: A detrimental effect on an environmental change relative to desired or baseline conditions.

Agricultural privilege tax: An annual tax levied on farming activities in the Everglades Agricultural Area and the C-139 basins to support phase I of the Everglades restoration.

Analyte: A substance measured in an analytical procedure.

Aquifer: An underground, water-bearing layer of porous rock, sand, or gravel.

Baseline period: A specified period of time during which collected data are used for comparisons with subsequent data.

Benthic: Bottom-dwelling in a body of water, such as benthic invertebrates.

Best Management Practices (BMPs): Land, industrial, and waste management techniques that reduce pollutant export from a specified area.

Bioaccumulation: An increase in concentration of a contaminant in an organism, relative to its concentration in the environment over time (see also: biomagnification).

Bioaccumulation factor (BAF): The ratio of a contaminant concentration in living tissue to its concentration in the organism's diet.

Biogeochemistry: The study of the form, fate, and movement of elements and compounds through an ecosystem. Nitrogen cycling is an example of a biogeochemical process.

Biomagnification: In a food chain, the process by which contaminants increase progressively in organisms at higher trophic levels (see also: bioaccumulation).

Biomass: The amount of living material in a particular sample, population, or area, usually measured as dry mass.

Bulk density: The mass of soil in a given volume.

Compliance monitoring: In a water quality management program, compliance is associated with meeting permit conditions as well as ambient standards. Ongoing monitoring provides periodic water quality data, which are used to assess compliance.

Comprehensive Everglades Restoration Plan (CERP): The framework and guide for the restoration, protection, and preservation of the South Florida ecosystem. CERP also provides for water-related needs of the region, such as water supply and flood protection.

Conductance: The ability of an aqueous solution to carry an electric current. Conductance is used as a measure of total dissolved solids in water.

Decomposition: The action of microorganisms breaking down organic compounds into simpler ones, resulting in the release of energy.

Discharge (or flow): The rate of water movement past a reference point, measured as volume per unit time (usually expressed as cubic feet or cubic meters per second).

Emergent macrophytes: Wetland plants that extend above the water surface. Cattails and rushes are two examples.

Eutrophic: An aquatic environment enriched with nutrients, usually associated with high plant productivity and low oxygen levels.

Evapotranspiration (ET): The process by which water is released to the atmosphere by evaporation from a water surface or movement from a plant surface (more specifically known as transpiration).

Everglades Agricultural Area (EAA): An area extending south from Lake Okeechobee to the northern levee of WCA-3A, from its eastern boundary at the L-8 canal to the western boundary along the L-1, L-2, and L-3 levees. The EAA incorporates almost 3,000 square kilometers of highly productive agricultural land.

Everglades Construction Project (ECP): Twelve interrelated construction projects located between Lake Okeechobee and the Everglades. The cornerstone of the ECP is six large constructed wetlands known as Stormwater Treatment Areas (STAs). They use naturally occurring biological processes to reduce phosphorus that enters the Everglades. The ECP also contains four hydropattern restoration projects that will improve the volume, timing, and distribution of water entering the Everglades.

Everglades Forever Act (EFA): A 1994 Florida law (Section 373.4592, Florida Statutes), amended in 2003, to promote Everglades restoration and protection. This will be achieved through comprehensive and innovative solutions to issues of water quality, water quantity, hydroperiod, and invasion of exotic species to the Everglades ecosystem. The EFA establishes the plan, the enforceable schedule, and the funding for the various components of the Everglades Program.

Everglades Nutrient Removal (ENR) Project: A constructed wetland, initiated in 1994, designed to biologically remove phosphorus from agricultural runoff water before entering the Arthur R. Marshall Loxahatchee National Wildlife Refuge. This demonstration project was also designed to optimize operation of constructed wetlands for phosphorus removal, which has proven highly effective.

Everglades Program: Projects, regulations, monitoring efforts, and research associated with restoring and protecting the Everglades. This program was established by the 1994 Everglades Forever Act.

Everglades Protection Area (EPA): As defined in the Everglades Forever Act, the EPA is comprised of Water Conservation Areas 1, 2A, 2B, 3A, and 3B, the Arthur R. Marshall Loxahatchee National Wildlife Refuge, and the Everglades National Park.

Everglades Stormwater Program (ESP): A program to ensure that water quality standards are met at all structures not included in the Everglades Construction Project.

Everglades Trust Fund: A fund created by Florida law (Chapter 97-258, Florida Statutes) to support ecosystem restoration of the Everglades.

Excursion (in water quality): A constituent concentration that is of potential concern as an exceedance and possible violation of a water quality criterion. "Excursion" indicates some uncertainty in the interpretation of the reported constituent concentration, requiring further evaluation of background conditions, ancillary data, quality assurance, and historical data. These factors must be assessed by the Florida Department of Environmental Protection (FDEP) before the concentration is considered an exceedance or violation.

Exotic species: Species of plants or animals that are not naturally found in a region (nonindigenous). They can sometimes aggressively invade habitats and cause multiple ecological changes, including the displacement of native species.

Fauna: All animal life associated with a given habitat.

Flora: All plant life associated with a given habitat.

Flow-weighted mean concentration: The average concentration of a substance in water, corrected for the volume of water flow at the time of sampling. Samples taken when flow is high are given greater weight in the average. Flow-weighted mean concentrations can be used to calculate mass loading at a particular location.

Geometric mean: A statistical average of a set of transformed numbers, often used to represent a central tendency in highly variable data, such as water quality. It is calculated from data transformed using powers or logarithms and then transformed back to original scale after averaging.

Hydraulic residence (or retention) time (HRT): The length of time that water resides in a specified area.

Hydropattern: Water depth, duration, timing, and distribution of fresh water in a specified area. A consistent hydropattern is critical for maintaining various ecological communities in wetlands.

Hydroperiod: Duration and frequency of inundation in a wetland area.

Loading (or mass loading): The amount of material carried by water into a specified area, expressed as mass per unit of time. One example is phosphorus loading into Water Conservation Area 2A, measured in metric tons per year.

Macrophytes: Visible (non-microscopic) plants found in aquatic environments. Examples in South Florida wetlands include sawgrass, cattail, sedges, and lilies.

Median: The middle value in a set of ordered data. The median is often used to express the typical (average) value of a group of water quality data, because the median is less influenced than the arithmetic average by outlying values routinely seen in such data.

Methylmercury (MeHg): A highly toxic form of the heavy metal mercury that is readily accumulated by living organisms. Inorganic mercury is converted to methylmercury by sulfate-reducing bacteria in aquatic sediments, such as those that are present in Everglades marshes.

Minimum Flows and Levels: Florida law (Chapter 373, Florida Statutes) requires the state's water management districts to set water levels for each major body of water "...at which further withdrawals would be significantly harmful to the water resources or ecology of the area."

Moving average: The arithmetic average of a sequence of data within a data set, moved and calculated sequentially to smooth the data and reveal trends (e.g., 12-month moving average TP concentration).

Muck: Dark, organic soil derived from well-decomposed plant biomass.

Non-ECP: All water control structures associated with the Everglades Protection Area outside the Everglades Construction Project (ECP).

Nutrients: Organic or inorganic compounds essential for the survival of an organism. In aquatic environments, nitrogen and phosphorus are important nutrients that affect the growth rate of plants.

Oligotrophic: An aquatic environment depleted of nutrients, resulting in low plant productivity.

Parameter: A variable or constant representing a characteristic of interest. For example, conductance is a water quality parameter. Use of this term is highly subjective and varies greatly across disciplines.

Parts per billion (ppb): A unit of measure, equivalent to micrograms per liter (1ppb = 1 µg/L).

Periphyton: The biological community of microscopic plants and animals attached to surfaces in aquatic environments. Algae are the primary component in these assemblages, which naturally reduce phosphorus levels in water and serve a key function in Stormwater Treatment Areas.

Phosphorus (P): An element that is essential for life. In freshwater aquatic environments, phosphorus is often in short supply; increased levels can promote the growth of algae and other plants.

Precision: The degree of reproducibility of a measurement. Low precision yields high scatter in data (see also: accuracy).

Quality assurance (QA): A program to provide a means for a product to meet a defined set of quality standards at a specific level of confidence.

Quality control (QC): Steps taken to ensure that quality standards are met.

Sheetflow: The movement of water as a broad front with a shallow, uniform depth.

Species richness: The number of species occurring in a particular area for a specified sampling period.

Submerged aquatic vegetation (SAV): Wetland plants that exist completely below the water surface.

Regulatory Action Strategy (RAS): A suite of projects and programs being developed to address water quality concerns for structures outside the Everglades Construction Project permit.

Scientifically defensible: Information that is supportable using accepted scientific methods of data collection, analysis, and reporting.

Soil or peat subsidence: The loss of organic soil and associated elevation due to decomposition, compaction, or burning. This process occurs at a high rate when peat soils of the Everglades region are drained.

Stormwater Treatment Area (STA): A large, constructed wetland designed to remove pollutants from stormwater runoff.

Total maximum daily load (TMDL): The maximum allowed level of pollutant loading for a water body, while still protecting its uses and maintaining compliance with water quality standards, as defined in the Clean Water Act.

Trophic levels: Distinct levels at which groups of organisms are using or producing energy. Plants, the primary producers of energy, are in the lowest trophic level. Predators, such as bass, wading birds, and raccoons, are in the highest trophic level. Some metals, such as mercury, accumulate at higher trophic levels.

Water quality (WQ) criteria: Constituent concentrations based on scientific data and judgments on the relationship between pollutant concentrations and environmental and human health effects.

Water quality standards (WQS): State-mandated water quality standards that are comprised of the beneficial use classification, the water quality criteria applicable to that classification, the Florida antidegradation policy, and several provisions in other rules.

Water Preserve Areas (WPA): Multipurpose water-holding areas located along the western border of Southeast Florida's urbanized corridor.

Water Year 2003: The period from May 1, 2002 through April 30, 2003 during which water quality and other data were collected and reported on in the *2004 Everglades Consolidated Report*.