
GLOSSARY

A – D

Accuracy: The closeness of a measured value to the true value.

Acre-foot (ac-ft): The volume of liquid required to cover 1 acre to a depth of 1 foot.

Ad valorem tax: A tax imposed on the value of real and personal property, as certified by the property appraiser in each county.

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

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

Alkalinity: Alkaline nature of a substance (water) derived by measuring its ability to accept hydrogen ions.

Alternative Water Supply (AWS): A supply of water that has been reclaimed after municipal, commercial, or agricultural uses; or a supply of storm water, or brackish or salt water, that has been treated in accordance with applicable rules and standards sufficient to supply an intended use.

Analyte: A substance measured in an analytical procedure.

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

Aquifer Storage and Recovery (ASR): The injection of fresh water into a confined saline aquifer during times when supply exceeds demand (wet season), and recovering the water during times when there is a supply deficit (dry season).

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

Benthic: Pertaining to the bottom or sediment habitats of a body of water.

Best Management Practices (BMPs): Land, agricultural, 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. A bioaccumulation factor (BAF) is the ratio of a contaminant concentration in living tissue to its concentration in the organism's diet.

Biogeochemistry: Study of the chemical, physical, geological, and biological processes and reactions that govern the composition of the natural environment (including the biosphere, the hydrosphere, the pedosphere, the atmosphere, and the lithosphere), and the cycles of matter and energy that transport the Earth's chemical components in time and space.

Biomagnification: In a food chain, the process by which contaminants increases progressively in organisms at higher trophic levels.

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

Brackish: Containing a mixture of salt water and fresh water.

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

Central and Southern Florida Flood Control Project (C&SF Project): A complete system of canals, storage areas, and water control structures spanning the area from Lake Okeechobee to the east and west coasts and from Orlando south to the Everglades. This was designed and constructed in the 1950s by the U.S. Army Corps of Engineers to provide flood control and improve navigation and recreation.

Certificate of Participation (COP): As defined by Florida law (Section 373.584, Florida Statutes), a type of revenue bond that water management districts may issue to finance the undertaking of any capital or other project for purposes permitted by the state's constitution.

Compliance monitoring: In a water quality management program, compliance is associated with meeting permit conditions based on 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.

Consumptive Use Permit (CUP): A permit issued by the South Florida Water Management District under Chapter 40E-2, Florida Administrative Code, allowing withdrawal of water for consumptive use.

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

Diel: A variation that occurs regularly every day.

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).

Dissolved oxygen (DO): The concentration of oxygen dissolved in water, often expressed as percent saturation, where saturation is the maximum amount of oxygen that can be dissolved in water at a given altitude and temperature.

Drawdown: A lowering of the water level in a reservoir or other body of water.

Drought: An extended period of low rainfall, below-normal streamflow, and depleted surface and subsurface storage.

E – G

Ecology: The study of the relationship of plants and animals to their physical and biological environment.

Ecosystem: Biological communities together with their environment, functioning as a unit.

Ecotoxicology: A scientific discipline combining the methods of ecology and toxicology in studying the effects of toxic substances, particularly pollutants, on the environment.

Emergent aquatic vegetation (EAV): Wetland plants that extend above the water surface.

Environmental Resource Permit (ERP): A permit issued by the South Florida Water Management District under Chapter 40E-4, Florida Administrative Code, to ensure that land development projects do not cause adverse environmental, water quality, or water quantity impacts.

Estuary: The part of the wide lower course of a river where its current is met by ocean tides or an arm of the sea at the lower end of a river where fresh and salt water meet.

Eutrophication: The enrichment of aquatic environments with nutrients like phosphorus and nitrogen, typically from mineral and organic runoff originating in the surrounding watershed. This enrichment results in increased growth of plants and algae that may reduce dissolved oxygen content in the water.

and can result in die-off of other organisms. This process occurs naturally, but can be accelerated by human activity (known as cultural eutrophication).

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 (1,158 square miles) of highly productive agricultural land.

Everglades Construction Project (ECP): The ECP is a requirement of the 1994 Everglades Forever Act and is the foundation of a large ecosystem restoration program, composed of 12 interrelated construction projects between Lake Okeechobee and the Southern Everglades, including the Everglades Stormwater Treatment Areas and four hydropattern restoration projects that will improve the volume, timing, and distribution of water entering the Southern 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 nonindigenous 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 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 comprises Water Conservation Areas 1, 2A, 2B, 3A, and 3B, the Arthur R. Marshall Loxahatchee National Wildlife Refuge, and Everglades National Park.

Everglades Stormwater Treatment Areas: Six large freshwater treatment wetlands mandated by the Everglades Forever Act (EFA) (Chapter 373.4592, Florida Statutes) covering about 65,000 total acres and containing 45,000 acres of effective treatment area south of Lake Okeechobee to remove excess total phosphorus (TP) from surface waters prior to entering the Everglades Protection Area.

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 before considered an exceedance or violation.

Expenditure: The disbursement of appropriated funds to purchase goods or services.

Fauna: All animal life associated with a given habitat.

Fiscal Year (FY): The 12-month period, from October 1 through September 30, during which the agency’s annual budget is developed and implemented.

Floating aquatic vegetation (FAV): Wetland plants that have portions floating at or near the water surface but are rooted in substrate (for example, water lily).

Flora: All plant life associated with a given habitat.

Florida Administrative Code (F.A.C.): The official compilation of the rules and regulations of Florida’s regulatory agencies. The code is organized by titles with each title number representing a department, commission, board, or other agency.

Florida Department of Environmental Protection (FDEP): The South Florida Water Management District operates under the general supervisory authority of the FDEP, which includes various permit and budgetary oversight.

Florida Forever Act: A 1999 Florida law (Section 259.105, Florida Statutes) authorizing issued bonds to fund land acquisition, water resource development, stormwater management projects, waterbody restoration activities, recreational facilities, public access improvements, and invasive plant removal.

Florida Statutes (F.S.): The Florida Statutes are a permanent collection of state laws organized by subject area into a code made up of titles, chapters, parts, and sections. These statutes are updated annually by laws that create, amend, or repeal statutory material.

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

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

H – L

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

Hydrogeomorphology: Scientific study of the physical appearance and operational character of a water body as it adjusts its boundaries to the magnitude of flow and erosional debris within the watershed.

Hydrology: The scientific study of the properties, distribution, and effects of water on the Earth's surface, in the soil and underlying rocks, and in the atmosphere.

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.

Impoundment: A reservoir used for retaining water.

Inflow: The act or process of flowing in or into an area.

Intrusion: The invasion of a body of fresh water by a body of salt water, due to its greater density. It can occur either in surface water or groundwater bodies. The term is applied to the flooding of freshwater marshes by sea water, the upward migration of sea water into rivers and navigation channels, and the movement of sea water into freshwater aquifers along coastal regions.

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

Ion: An atom that has acquired a net electric charge by gaining or losing one or more electrons.

Landscape pattern: In the Everglades, the large-scale organization of features such as tree islands, ridges, and sloughs (including vegetation).

Limnology: The scientific study of bodies of fresh water for their biological, physical, geological, and hydrological properties.

Littoral: Region of well-lit water close to shore; home to most aquatic plant life (both rooted and floating) in a pond or lake, as the high amount of sunlight allows for significant photosynthetic activity.

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 total phosphorus loading into Water Conservation Area 2A, measured in metric tons per year.

Long-Term Plan: The plan for achieving and maintaining water quality goals for all discharges to the Everglades Protection Area. The 2003 Long-Term Plan for Achieving Water Quality Goals in the Everglades Protection Area (Long-Term Plan) contains activities to achieve these goals, and to permit the State of Florida and the South Florida Water Management District to fulfill their obligations under the Everglades Forever Act.

Loxahatchee Impoundment Landscape Assessment (LILA): A large-scale physical reproduction of the Everglades, located at the Arthur R. Marshall Loxahatchee National Wildlife Refuge, used to conduct eco-hydrology experiments. LILA consists of four 17-acre macrocosms and a recirculating water system that prevents nutrient pollution and provides control over flow rates and water levels. Each macrocosm mimics the Everglades landscape pattern of tree islands, ridges, and sloughs.

M – O

Macrophytes: Visible (non-microscopic) plants found in aquatic environments.

Marsh: An area of soft, wet, low-lying land, characterized by grassy vegetation and often forming a transition zone between water and land.

Median: The middle value in a set of ordered data. The median is often used to express the typical (central tendency) 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 present in Everglades marshes.

Minimum Flows and Levels (MFLs): 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."

Mitigation: The acquisition, creation, restoration, or enhancement of wetlands to compensate for permitted wetland impacts.

Mitigation banking: A process providing a unit of currency (or credit) that represents an increase in ecological benefit or value resulting from restoration, enhancement, preservation, or creation.

Moving average: Arithmetic average of a sequence of data in a dataset, moved and calculated sequentially to smooth the data and reveal trends (e.g., 12-month moving average total phosphorus concentration).

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

National Geodetic Vertical Datum (NGVD): A nationally established reference for elevation data.

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

North American Vertical Datum (NAVD): NAVD 88 is the vertical datum for CERP projects. Migration of the District's vertical data from other datum to the NAVD 88 is under way to establish a common spatial data framework compatible with federal, state, and local governmental agencies.

Northern Everglades: Northern extent of the South Florida Water Management District covering the Kissimmee, Lake Okeechobee, Caloosahatchee, and St. Lucie watersheds. Main features are Kissimmee lakes and rivers, Lake Okeechobee, and Caloosahatchee and St. Lucie rivers and estuaries.

Northern Everglades and Estuaries Protection Program (NEEPP): As defined by Florida law (Section 373.4595, Florida Statutes), an initiative to holistically restore the Everglades through increased focus and integration of regional projects in the Northern Everglades, including the Lake Okeechobee Watershed, and the Caloosahatchee and St. Lucie river watersheds and estuaries.

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

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

Outflow: The act or process of flowing out of an area.

P – S

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 (1 ppb = 1 µg/L).

Performance Measure: Quantifies how well an alternative meets a specific objective. Good performance measures are quantifiable, have a specific target, indicate when a target has been reached, and measure the degree to which the goal has been met.

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 Everglades Stormwater Treatment Areas.

pH: A dimensionless quantity measured on a scale that is a reverse logarithmic representation of the activity of hydrogen ions in the solution.

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.

Pollutant loading: Influx of a chemical or nutrient mass that can contaminate air, soil, or water.

Porewater: Water contained within the spaces between particles within sediments.

Precision: Degree of reproducibility of a measurement. Low precision yields high scatter in data.

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.

RECOVER (Restoration Coordination and Verification): An interagency, interdisciplinary team sponsored by the U.S. Army Corps of Engineers and South Florida Water Management District. The role of RECOVER is to organize and apply scientific and technical information in ways that are most effective in supporting objectives of the Comprehensive Everglades Restoration Plan, and to ensure that the plan's systemwide goals and purposes are achieved.

Regional Water Supply Plan: Detailed water supply plan developed by the South Florida Water Management District under Section 373.0361, Florida Statutes, providing an evaluation of available water supply and projected demands at the regional scale. The planning process projects future demand for 20 years and develops strategies to meet identified needs.

Reservoir: A man-made or natural water body used for water storage.

Revenue: Monies received from all sources (with the exception of fund balances) that are used to fund expenditures in a fiscal year.

Ridge: A raised area, typically elongated and vegetated with sawgrass, which forms an alternating pattern with sloughs within the Everglades.

Riverine: Located on or inhabiting the banks of a river.

Salinity: Dissolved salt content of water body, typically measured in practical salinity units (PSU)—the conductivity ratio of a seawater sample to a standard sodium chloride solution.

Save Our Rivers (SOR): In 1981, the Florida legislature created the Save Our Rivers Program for the water management districts to acquire environmentally sensitive land. The legislation produced Section 373.59, Florida Statutes, known as the Water Management Lands Trust Fund.

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

Slough: A depression associated with swamps and marshlands as part of a bayou, inlet, or backwater; it contains areas of slightly deeper water and a slow current and can be thought of as the broad, shallow rivers of the Everglades.

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

Specific conductance (or conductivity): The ability of an aqueous solution to carry an electric current; the higher the concentration of ionic (dissolved) constituents, the higher the conductivity.

Stage: The height of a water surface above an established reference point (datum or elevation). This vertical control measurement is usually expressed as feet National Geodetic Vertical Datum of 1929 or feet North American Vertical Datum of 1988.

Southern Everglades: Southern extent of the South Florida Water Management District encompassing the watersheds south of Lake Okeechobee to the Florida Keys. Key features include the Water Conservation Areas, Big Cypress National Preserve, Everglades National Park/Florida Bay, and coastal bays and estuaries south of Lake Okeechobee.

South Florida Environmental Report (SFER): A comprehensive report prepared by the South Florida Water Management District, along with the Florida Department of Environmental Protection and other collaborating agencies and organizations, and submitted annually by March 1, in accordance with Chapter 2005-36, Laws of Florida, and Subsection 373.036(7), Florida Statutes. In three volumes, the SFER consolidates over 75 individual reports to efficiently satisfy many statutorily mandated reporting and permit requirements and supporting technical and financial information for the reporting period.

Stormwater Treatment Areas (STAs): Large, constructed wetlands designed to remove pollutants, particularly nutrients, from stormwater runoff using natural processes.

Structure: Man-made pump stations, reservoirs, channel improvements, canals, levees, and diversion channels. Region-wide water management is accomplished by the agency's operation and maintenance of over 2,600 miles of canals and levees, about 1,200 water control structures, and 60 pump stations.

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

Surface Water Improvement and Management (SWIM) Plan: Established under Chapter 373.451–373.4595, Florida Statutes, a comprehensive state-wide program for restoring and protecting priority surface waters of state or regional significance.

T – Z

Total carbon (TC): An estimate of the concentration of carbon in both inorganic and organic forms in a soil sample.

Total Maximum Daily Load (TMDL): Maximum allowed level of pollutant loading for a water body, while still protecting its uses and complying with water quality standards of the Clean Water Act.

Total nitrogen (TN): An estimate of the concentration of nitrogen in both inorganic and organic forms in a water sample.

Total phosphorus (TP): An estimate of the concentration of phosphorus in both organic and inorganic forms in a water sample.

Tree island: A raised area, typically surrounded by water that supports a woody vegetation community and is a site of high biodiversity. Two types of tree islands are typical of the Everglades: strand islands, which are usually tear-drop shaped, and pop-up islands, which are typically round.

Tributary: A stream that flows into a larger stream or other body of water.

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 and wading birds, are in the highest trophic level. Some metals, such as mercury, accumulate at higher trophic levels.

Turbidity: Measure of suspended material in a liquid (typically in nephelometric turbidity units, or NTUs).

Water Conservation Areas (WCAs): Diked areas of the remnant Everglades that are hydrologically controlled for flood control and water supply purposes. These are one of the primary targets of Everglades restoration and major components of the Everglades Protection Area.

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

Water quality: The physical, chemical, and biological condition of water as applied to a specific use, typically propagation of fish and wildlife, public water supply, industry, or recreation.

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

Water quality standards: State-mandated water quality levels composed of a beneficial use classification, water quality criteria applicable to that classification, Florida antidegradation policy, and several provisions in other rules.

Water Reservation: As defined by Florida law [Subsection 373.223(4), Florida Statutes], water set aside or designated from use by the District's Governing Board or the Florida Department of Environmental Protection, in such locations and quantities and for such seasons of the year, as may be required for the protection of fish and wildlife, or public health and safety.

Watershed: A region or area bounded peripherally by a water parting and draining ultimately to a particular watercourse or body of water.

Water Year (WY): The period from May 1 through April 30, during which water quality and other data are collected and reported in the *South Florida Environmental Report*.

Wetland: An area that is inundated or saturated by surface water or groundwater with vegetation adapted for life under those soil conditions (for example, swamps, bogs, and marshes).