

APPENDIX E

GLOSSARY

Algae

Plants that lack true roots, stems, and leaves. For the physical assessment described herein, algae consist of nonvascular plants that attach to rocks and debris or are free floating in the water. Such plants may be green, blue-green, or olive, may be slimy to the touch, and usually have a coarse filamentous structure.

Aquatic-life assessment (ALA)

A category of biological monitoring conducted on unclassified water bodies not included in Appendix D of the Texas Surface Water Quality Standards that have previously been assessed and found not to support the presumed aquatic-life use.

Aquatic-life use (ALU)

A beneficial-use designation (in state water quality standards) in which the water body provides suitable habitat for survival and reproduction of desirable fish, benthic macroinvertebrates, shellfish, and other aquatic organisms.

Aquatic macrophytes

Vascular plants that usually are arranged in zones corresponding closely to successively greater depths in shallow water. The characteristic plant forms that dominate these gradients (in order of decreasing depth) are: (1) submerged rooted aquatics, (2) rooted aquatics with floating leaves, (3) emergent rooted aquatics, and (4) marginal mats. Some vascular plants (like duckweed) may live unattached in the water and may occur anywhere on the water surface.

Aquatic-life monitoring (ALM)

A category of biological monitoring that is routine and conducted to provide baseline data on environmental conditions or to determine if criteria for aquatic-life use or dissolved-oxygen are being attained. This category also includes reference-condition or ecoregion monitoring.

Bank

The portion of the channel that tends to restrict lateral movement of water. It often has a slope less than 90° and exhibits a distinct break in slope from the stream bottom. Also, a distinct change in the substrate materials or vegetation may delineate the bank.

Bankfull

The elevation on a stream bank where flooding begins. It is associated with the flow that fills the channel to its top and just begins to spill out onto the floodplain. In incised channels, this

elevation is determined by using a series of common stage indicators that may be situated along the boundary of the bankfull channel. Bankfull condition, recurs, on average, every 1.5 years.

Benthic organisms

Aquatic, bottom-dwelling organisms that include worms, leeches, snails, flatworms, burrowing mayflies, clams, and various insects.

Biological diversity

The variety and variability among living organisms and the ecological complexes in which they occur. Diversity can be defined as the number of different items and their relative frequencies. For biological diversity, these items are organized at many levels, ranging from complete ecosystems to the biochemical structures that are the molecular basis of heredity. Thus, the term encompasses different ecosystems, species, and genes.

Biological integrity

The ability of an aquatic ecosystem to support and maintain a balanced, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of natural habitats within a region.

Bloom

The accelerated growth of algae or higher aquatic plants in a body of water. This is often related to pollutants that increase the rate of growth.

CBOD₅

The quantity of oxygen used after five days in the biochemical oxidation of organic matter present in wastewater as measured by procedures described in *Standard Methods*.

Channel

That portion of the landscape that contains the bank and the stream bottom. It is distinct from the surrounding area due to breaks in the general slope of the land, lack of terrestrial vegetation, and changes in the composition of substrate materials.

Channelization

Straightening and deepening streams so water will move faster, a method of flood control that disturbs fish and wildlife habitats and can interfere with a water body's ability to assimilate waste.

Classified water body

Also "designated water body." A water body that is protected by site-specific criteria. The classified segments are listed and described in Appendixes A and C of Chapter 307.10 of the Texas Surface Water Quality Standards. Classified waters include most rivers and their major tributaries, major reservoirs, and estuaries.

Criteria

Water quality conditions that are to be met in order to support and protect desired uses.

Cubic foot per second (ft³/s or cfs)

A commonly used measure of the rate of flow where a 1-cubic-foot volume of water travels 1 foot in 1 second.

Cut bank

The outside (concave) bank of a stream-channel bend characterized by high erosion. Streamflow usually increases along the cut-bank side of the channel.

Detritus

Decaying organic material.

Dissolved oxygen

The oxygen freely available in water. Dissolved oxygen is vital to fish and other aquatic life and for the prevention of odors. Traditionally, the level of dissolved oxygen has been accepted as the single most important indicator of a water body's ability to support desirable aquatic life.

Ecological impact

The effect that a human or natural activity has on living organisms and their abiotic (non-living) environment.

Eddy current

A circular water movement formed on the side of a main current. Eddies may be formed where the main stream passes obstructions (logs, rocks).

Effluent

Wastewater (treated or untreated) that flows out of a treatment plant or industrial outfall (point source) before entering a water body.

Emergent vegetation

Aquatic macrophytes (plants), such as cattails, that are rooted in the sediment, near shore or in marshes, with nearly all of the leaves above the water surface.

Euphotic zone

The depth of water in a lake or ocean exposed to enough sunlight for photosynthesis to occur.

Family

A group of related plants or animals forming a category ranking above a genus and below an order and usually comprising several to many genera.

Floating vegetation

Rooted plants (some free floating) with leaves floating on the surface (for example, water lily, water shield, duckweed, and water hyacinths).

Floodplain

A level land area adjacent to rivers and streams that is subject to recurring inundation. Formed by the deposition of sediment during periodic floods. Floodplains contain such features as levees, back swamps, delta plains, and oxbow lakes.

Fork length

Fish—Greatest distance in a straight line from the tip of the snout to the center of the fork in the caudal fin.

Genus

A category of biological classification ranking between family and species, comprising structurally or phylogenetically (evolutionarily) related species and designated by a Latin or Latinized capitalized singular noun.

Glide

Portion of the water column in which the flow is characterized by slow moving laminar flow, similar to that which would be found in a shallow canal. Water-surface gradient over a glide is nearly zero, so velocity is slow, but flow is from shore to shore without eddy development. A glide is too shallow to be a pool but has too little water velocity to be a run.

Habitat

The area in which an organism lives.

Index of biotic integrity (IBI)

A composite index of the overall condition of a fish or benthic community based on the cumulative score of separate metrics.

Indicator organism

An organism, species, or community that indicates the presence of a certain environmental condition or conditions.

Intermittent stream

A stream that has a period of zero flow for at least one week during most years. Where flow records are available, a stream with a 7Q2 flow of less than 0.1 cfs is considered intermittent. The critical low flow (7Q2) is the lowest flow that occurs for seven consecutive days during a two-year period as statistically determined from historical data.

Intermittent stream with perennial pools

A stream that may have periods of zero flow or a 7Q2 flow of less than 0.1 cfs, but maintains pools that create significant aquatic-life uses.

Intolerant organism

An organism that is sensitive to degradation in water quality and habitat. Sensitive organisms are usually driven from an area or killed as the result of some contaminant, especially organic pollution (for example, sewage, feedlot runoff, food waste).

Invertebrate

Animal lacking a backbone.

Lotic

Of, relating to, or living in moving fresh water.

Macrophyte

Any large vascular plant that can be seen without the aid of a microscope or magnifying device (cattails, rushes, arrowhead, water lily, and other aquatic species).

Natural vegetative buffer

An area of either natural or native vegetation that buffers the water body from terrestrial runoff and the activities of man. In natural areas, it may be much greater than the riparian zone width. In human-altered settings, the natural vegetative buffer limit is at the point of human influence in the riparian zone such as a road, parking lot, pasture, or crop field. It is the width of this buffer that we are most interested in measuring for quantifying potential stream impairments.

Nekton

Free swimming organisms (for example, fish, insects).

Nonpoint sources

Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outfall. The pollutants are generally carried off the land by stormwater runoff. The commonly used categories for nonpoint sources are agriculture, silviculture, urban, mining, construction, dams and channels, land disposal, and saltwater intrusion.

Nutrient

Any substance used by living things to promote growth. The term is generally applied to nitrogen and phosphorus in water and wastewater, but is also applied to other essential and trace elements.

Outfall

A designated point of effluent discharge.

Overhanging vegetation

Vegetation that overhangs the water column and provides food or cover for fish and benthic macroinvertebrates or shades the water from solar radiation.

Periphyton

Organisms that cling to rocks, plants, logs, tires, and other instream debris.

Perennial stream

A stream that does not have a period of zero flow for more than one week or where the 7Q2 flow is greater than 0.1 cfs.

pH

The hydrogen-ion activity of water caused by the breakdown of water molecules and presence of dissolved acids and bases.

Photosynthesis

The manufacture by plants of carbohydrates and oxygen from carbon dioxide and water in the presence of chlorophyll using sunlight as an energy source.

Point bar

The inside (convex) bank of a stream channel bend characterized by high deposition of sand, gravel, or cobble. The top of the point bar defines the floodplain. Point bars are built up during periods of flooding and are usually devoid of woody vegetation.

Point source

A specific location from which pollutants are discharged. It can also be defined as a single identifiable source of pollution (for example, a pipe or a ship).

Pool

A portion of a stream where water velocity is low and the depth is greater than the riffle, run, or glide. Pools often contain large eddies with widely varying directions of flow compared to riffles and runs, where flow is nearly exclusively downstream. The water-surface gradient of pools is very close to zero and their channel profile is usually concave.

Rapid bioassessment protocols (RBPs)

A set of protocols to evaluate the biological conditions of a water body that uses biological surveys of the resident plants, animals, and other living organisms that depend upon the aquatic resource.

Receiving water

A river, stream, lake, or other body of surface water into which wastewater or treated effluent is discharged.

Receiving-water assessment (RWA)

A category of biological monitoring designed as a single study conducted on a stream (usually with existing or proposed wastewater discharges) to assess its physical, chemical, and biological characteristics.

Riffle

A shallow portion of the stream extending across a stream bed characterized by relatively fast moving turbulent water. The water column in a riffle is usually constricted and water velocity is fast due to a change in surface gradient. The channel profile in a riffle is usually straight to convex.

Riparian zone

Generally includes the area of the stream bank and out onto the floodplain that is periodically inundated by floodwaters from the stream. The limit of the zone depends on many factors including the makeup of the native plant community, soil moisture levels, and distance from the stream (or the limit of interaction between land and stream processes). Interaction between this terrestrial zone and the stream is vital for the health of the stream.

Run

A relatively shallow portion of a stream characterized by relatively fast moving non-turbulent flow. A run is usually too deep to be considered a riffle and too shallow to be considered a pool. The channel profile under a run is usually a uniform flat plane.

Segment

Waters designated by the TCEQ in the TSWQS, which include most rivers and their major tributaries, major reservoirs, lakes, and marine waters. Segmented waters have designated physical boundaries, specific uses, and numerical physicochemical criteria (e.g., DO, temperature, fecal coliform, chloride, sulfate) in the state's water quality standards.

Seven-day, two-year low-flow (7Q2)

The seven-day, two-year low flow, or the lowest average streamflow for seven consecutive days with a recurrence interval of two years, as statistically determined from historical data.

Species

A category of biological classification ranking immediately below genus, comprising related organisms potentially capable of interbreeding. A species is identified by a two-part name—the name of the genus followed by a Latin or Latinized uncapitalized noun agreeing grammatically with the genus name.

Specific conductance

A measure of the electrical current carrying capacity, in $\mu\text{S}/\text{cm}$, of 1 cm^3 of water at 25°C . Dissolved substances in water dissociate into ions with the ability to conduct electrical current. Conductivity is a measure of how salty the water is; salty water has high conductivity.

Standard length

Fish—The greatest distance in a straight line from the tip of the snout to the base of the caudal peduncle.

Stream bend

The curved part of a stream. A well-defined bend has a deep outside area (cut bank) and a shallow inside area accentuated by point-bar development. Due to sharp bending, streamflow is forced to the cut-bank side, and eddies develop on the inside of the bend. A moderately developed bend forces some flow to the outside and has only a slight change in depth across the channel. A poorly defined bend has no noticeable change in water depth across the channel, and streamflow is generally not forced to one side.

Stream order

A scheme for classifying stream sizes in which the smallest, unbranched tributaries in a watershed are designated first-order streams. Where two first-order streams join, a second-order stream is formed; where two second order streams join, a third-order stream is formed, and so on.

Stream terrace

A relatively level bench or step-like surface breaking the continuity of a slope. These occur due to erosion by a river on its floodplain. A terrace that is above the current level of a river is the location of the river at an earlier time. The river has continued to incise itself, leaving the terraces as remnants of its earlier elevation.

Submerged vegetation

Rooted plants with almost all leaves below the water surface (for example, alligator weed, hydrilla or elodea).

Surface water quality standards

The designation of water bodies for desirable uses and the narrative and numerical criteria deemed necessary to protect those uses.

Tolerant organism

An organism that has the capacity to grow and thrive when subjected to unfavorable environmental factors.

Total length

Fish—Tip of snout (mouth closed) to the tip of longest caudal ray (caudal fin compressed).

Shrimp—Tip of rostrum to tip of telson.

Crab—Lateral spine tip to lateral spine tip or trident point of body if no lateral spine.

Skates and rays—Maximum wingspan.

Squid—Posterior mantle margin to top of pen.

Transect line

A straight line, perpendicular to the streamflow, between two points on opposite stream banks.

Tree canopy

The uppermost spreading branching layer of stream side trees that shades the water surface. Reported as percent cover and measured with a canopy densiometer. Possible measurement range is from 0 percent (totally open canopy cover) to 100 percent (totally closed).

Tributary

A stream or river that flows into a larger stream or river.

Unclassified water body

A smaller water body that does not have site-specific water quality standards assigned to it (not included in Appendix D of the Texas Surface Water Quality Standards), but instead is protected by general standards that apply to all surface waters in the state.

Use-attainability analysis (UAA)

A category of biological monitoring to assess the physical, chemical, biological, and economic characteristics of a water body. It is used to establish site-specific standards for classified water bodies.

Watershed

The area of land from which precipitation drains to a single point. Sometimes referred to as a drainage basin, drainage area, or catchment basin.

