

APPENDIX D. ACRONYM LIST AND GLOSSARY

ACRONYMS

AASF	Adopt-A-Stream Foundation
AFDM	Ash-Free Dry Mass
AFDW	Ash-Free Dry Weight
AGP	Algal Growth Potential
AI	Autotrophic Index
ANOVA	Analysis of Variance
APA	Alkaline Phosphatase Activity
B-IBI	Benthic Macroinvertebrate Index of Biological Integrity
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BPJ	Best Professional Judgement
BuRec	U.S. Department of the Interior, Bureau of Reclamation
CENR	Committee on Environment and Natural Resources
CE-QUAL-RIV1	Hydrodynamic and Water Quality Model for Streams
CFR	Code of Federal Regulations
CGP	Construction General Permit
CLP	Clean Lakes Program
COE	Corps of Engineers
CPP	Continuing Planning Process
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSO	Combined Sewer Overflow
CZARA	Costal Zone Act Reauthorization Amendment
DDT	Dichlorodiphenyltrichloroethane
DEQ	Department of Environmental Quality
DIN	Dissolved Inorganic Nitrogen
DITS	Diatom Index of Trophic Status
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
DWPC	Division of Water Pollution Control
ECA	Ecological Community Analysis
ECARP	Environmental Conservation Acreage Reserve Program
EDAS	Ecological Data Application System
EMAP	Environmental Monitoring and Assessment Program
EPT	Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies)
EQIP	Environmental Quality Incentives Program
FGA	Filamentous Green Algae
FIP	Forestry Incentives Program
GIS	Geographical Information Systems
HAB	Harmful Algal Bloom
HBN	Hydrologic Benchmark Network
HSFP	Hydrologic Simulation Project FORTAN

HUC	Hydrologic Unit Code
IBI	Index of Biological Integrity
LDC	Legacy Data Center
MIT5	Multimetric Index of Trophic Status
N	Nitrogen
NASQAN	National Stream Quality Accounting Network
NAWQA	National Water-Quality Assessment
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Association
NPDES	National Pollutant Discharge and Elimination System
NPS	Nonpoint Source
NPSM	Nonpoint Source Model
NRCS	Natural Resources Conservation Service
NSCEP	National Service Center for Environmental Publications
NSS	National Stream Survey
NSWS	National Surface Water Survey
NTU	Nephelometric Turbidity Units
NWIS	National Water Information System
ONRW	Outstanding National Resource Waters
P	Phosphorus
PAR	Photosynthetically-active Radiation
PCS	Permit Compliance System
P/R	Productivity/Respiration
QA	Quality Assurance
QC	Quality Control
QUAL2E	Enhanced Stream Water Quality Model
RAD	Reach Address Database
RCC	River Continuum Concept
RF3	Reach File 3
RTAG	Regional Technical Assistance Groups
SAV	Submerged Aquatic Vegetation
SRP	Soluble Reactive Phosphorus
STORET	Storage and Retrieval
TAB	Total Algal Biomass
TDP	Total Dissolved Phosphorus
THM	trihalomethane
TIA	Total Impervious Area
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
TVA	Tennessee Valley Authority
TWINSpan	Two Way Indicator Species Analysis
USGMA	Unweighted Pair Group Method Using Arithmetic Averages

USGS	United States Geologic Survey
VNRP	Voluntary Nutrient Reduction Plan
WASP	Water Analysis Simulation Program
WES	Waterways Experiment Station
WHIP	Wildlife Habitat Incentives Program
WLA	Waste Load Allocation
WQBEL	Water Quality Based Effluent Limits
WQN	Water Quality Networks
WQS	Water Quality Standards
WRS	Wetlands Reserve Program
χ^2	Chi Square

GLOSSARY**algal biomass**

The weight of living algal material in a unit area at a given time (Wetzel 1983).

allochthonus

An organism or substance foreign to a given ecosystem (Atlas and Bartha 1993); describes organic matter reaching an aquatic community from the outside in the form of organic detritus or organic matter adsorbed to sediment (Wetzel 1983).

ash-free dry weight

An algal biomass measurement that measures the standing crop of algae to estimate net production (see Appendix B) (APHA 2000).

autochthonus

Microorganisms and/or substances indigenous to a given ecosystem; the true inhabitants of an ecosystem; referring to the common microbiota of the body or soil microorganisms that tend to remain constant despite fluctuations in the quantity of fermentable organic matter (Atlas and Bartha 1993); describes organic matter originating within a waterbody / aquatic community (Wetzel 1983).

autotrophic index (AI)

A means of determining the trophic nature of the periphyton community; calculated by dividing the biomass (ash-free weight of organic matter) by chlorophyll *a*. High AI values indicate heterotrophic associations or poor water quality (APHA 2000).

benthos/benthic

The assemblage of organisms associated with the bottom, or the solid-liquid interface of the aquatic system. Generally applied to organisms in the substrata (Wetzel 1983).

biocriteria

(biological criteria) Narrative or numeric expressions that describe the desired biological condition of aquatic communities inhabiting particular types of waterbodies and serve as an index of aquatic community health. (USEPA 1994).

BOD

Biochemical Oxygen Demand. Oxygen required to break down organic matter and to oxidize reduced chemicals (in water or sewage) (APHA 2000).

chlorophyll *a*

A complex molecule composed of four carbon-nitrogen rings surrounding a magnesium atom; constitutes the major pigment in most algae and other photosynthetic organisms; is used as a reliable index of algal biomass (Darley 1982).

Cladophora

A common nuisance filamentous green alga (Dodds et al. 1997).

community metabolism

The relationship between gross community production and total community respiration (Odum 1963).

criteria

Elements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use (USEPA 1994).

cultural enrichment

Human activities that result in increased nutrient loads to a waterbody.

designated uses

Uses defined in water quality standards for each water body or segment whether or not the use is being attained (USEPA 1994).

detritus

Unconsolidated sediments comprised of both inorganic and dead and decaying particulate organic matter inhabited by decomposer microorganisms (Wetzel 1983).

eutrophic

Abundant in nutrients and having high rates of productivity frequently resulting in oxygen depletion below the surface layer (Wetzel 1983).

eutrophication

The increase of nutrients in [waterbodies] either naturally or artificially by pollution (Goldman and Horne 1983).

existing uses

The use that has been achieved for a waterbody on or after November 28, 1975 (USEPA 1994).

flowpath

Conveys water between points in the stream system. Examples of flow paths are a stream channel, canal, storm sewer, or reservoir (http://il.water.usgs.gov/proj/feq/feqdoc/chap3_1.html).

heterotrophic

Describes organisms that need organic compounds to serve as a source of energy for growth and reproduction (Atlas and Bartha 1993).

hypolimnetic

Characteristic of the hypolimnion, the deep, cold, relatively undisturbed stratum of a lake (Wetzel 1983).

hydrologic unit codes (HUC)

An 8-digit code, determined by the U.S. EPA, that is used as a standard method for watershed identification throughout the United States.

hyporheic zone

The subsurface zone where stream water flows through short segments of its adjacent bed and banks (Winter et al. 1998).

lentic

Relatively still-water environment (Goldman and Horne 1983).

lotic

Running-water environment (Goldman and Horne 1983).

macrophyte (also known as SAV-Submerged Aquatic Vegetation)

Larger aquatic plants, as distinct from the microscopic plants, including aquatic mosses, liverworts, angiosperms, ferns, and larger algae as well as vascular plants; no precise taxonomic meaning (Goldman and Horne 1983).

macroinvertebrate

Small benthic organisms which are retained on sieves with a mesh size ≥ 2 mm (Thorp and Covich 1991).

mesotrophic (2-4)

Having a nutrient loading resulting in moderate productivity (Wetzel 1983).

morphological characteristics (2-2)

The morphological characteristics of a waterbody are the characteristics that comprise the shape of the waterbody. In stream systems, morphology usually refers to the shape of the stream channel.

NPDES

National Pollutant Discharge Elimination System. The EPA program that regulates point source discharges through the issuance of permits to discharges and enforcement of the terms and conditions of those permits.

oligotrophic (2-4)

Trophic status of a waterbody characterized by a small supply of nutrients (low nutrient release from sediments), low production of organic matter, low rates of decomposition, oxidizing hypolimnetic condition (high DO) (Wetzel 1983).

parafluvial

Sediments within the active channel, outside the wetted stream; lateral sandbars (Holmes et al. 1994).

periphyton

Associated aquatic organisms attached or clinging to stems and leaves of rooted plants or other surfaces projecting above the bottom of a water body (USEPA 1994).

primary production

Quantity of new organic matter created by photosynthesis or chemosynthesis, or stored energy which that material represents (Wetzel 1983).

probability sampling

A sampling process wherein randomness is a requisite (Hayek 1993).

production/respiration ratio

The primary production to respiration ratio is a measure of community or whole system metabolism. This measurement can be used to assess ecosystem health and determine if the system is heterotrophically or autotrophically dominated.

Q10

The estimated discharge of ten year flood (USEPA 1994).

random sampling

Generic type of probability sampling, randomness can enter at any stage of the sampling process (Hayek 1993).

RTAG (Regional Technical Assistance Group)

Group of technical experts assembled at the EPA Regional level to assist in establishing criteria for States, Tribes and nutrient ecoregions.

reference conditions

Describe the characteristics of water body segments least impaired by human activities. As such, reference conditions can be used to describe attainable biological or habitat conditions for water body segments with common watershed/catchment characteristics within defined geographical regions.

riparian

Riverside, usually referring to vegetation (riparian vegetation) (Goldman and Horne 1983).

Secchi disk

A white or black and white disk used to measure transparency of a waterbody. The Secchi disk transparency is measured as the mean depth of the point where a weighted white (or black and white) disk, 20 cm in diameter, disappears when viewed from the shaded side of a vessel, and that point where the disk reappears upon raising it after it has been lowered beyond visibility (Wetzel 1983).

secondary production

New organic material created by an organism that uses organic substrates (i.e. uses material from primary producers) (Wetzel 1983)

seston/sestonic

organic matter suspended in the water column generally comprised of phytoplankton, bacteria and fine detritus (Thorp and Covich 1991).

STORET

EPA's computerized water quality database that includes physical, chemical, and biological data measured in water bodies throughout the United States (USEPA 1994).

Stratification, stratified random sampling

Type of probability sampling where a target population is divided into relatively homogenous groups or classes (strata) prior to sampling based on factors that influence variability in that population (Hayek 1993). In stratified sampling, a heterogenous environment is divided into homogenous strata or parts. Analysis of variance can be used to identify statistically different parameter means among the sampling strata or classes. The strata are the analysis of variance treatments (Poole 1972).

TMDLs

Total maximum daily loads (TMDLs) are defined by calculating the assimilative capacity of a waterbody for a substance (e.g. total phosphorus) and identifying the sources to determine the maximum load the waterbody is capable of carrying without causing detrimental effects.

trophic state

The trophic status of a waterbody (Carlson 1977).

TSS (total suspended solids)

Particulate matter suspended in the water column.

turbidity

Cloudiness or opaqueness of a suspension. In our context, refers to the amount of suspended matter in the water column, usually measured in nephelometric turbidity units (Atlas and Bartha 1993).

TVSS (total volatile suspended solids)

Volatile particulate matter suspended in the water column.

watershed

The area of land that drains water, sediment, and dissolved materials to a common outlet at some point along a stream channel. In American usage, *watershed* is synonymous with the terms *drainage basin* and *catchment* (Dunne and Leopold 1978).