
Glossary

***A posteriori* classification** - a classification based on the results of experimentation.

***A priori* classification** - a classification made prior to experimentation.

Aquatic community - an association of interacting populations of aquatic organisms in a given waterbody or habitat.

Aquatic life uses - a subset of designated uses for high quality waters. As such, they are in need of special protection so that characteristics of their resident biotic communities are identified and protected.

Assemblage - an association of interacting populations of organisms in a given waterbody (e.g., fish assemblage or benthic macroinvertebrate assemblage).

Attribute - physical and biological characteristics of habitats which can be measured or described.

Benthic macroinvertebrates - see benthos.

Benthos - animals without backbones, living in or on the sediments, of a size large enough to be seen by the unaided eye, and which can be retained by a U.S. Standard No. 30 sieve (28 openings/in, 0.595-mm openings). Also referred to as benthic macroinvertebrates, infauna, or macrobenthos.

Bioaccumulation - a process by which chemicals are taken up by aquatic organisms directly from water as well as through exposure via other routes, such as consumption of food and sediment containing the chemicals.

Bioconcentration - a process by which there is a net accumulation of a chemical directly from water into aquatic organisms resulting from simultaneous uptake (e.g., via gill or epithelial tissue) and elimination.

Biological assemblage - a group of phylogenetically (e.g., fish) or ecologically (e.g., benthic macroinvertebrates) related organisms that are part of an aquatic community.

Biological assessment or **Bioassessment** - an evaluation of the condition of a waterbody using biological surveys and other direct measures of the resident biota of the surface waters, in conjunction with biological criteria.

Biological criteria or **Biocriteria** - guidelines or benchmarks adopted by States to evaluate the relative biological integrity of surface waters. Biocriteria are narrative expressions or numerical values that describe biological integrity of aquatic communities inhabiting waters of a given classification or designated aquatic life use.

Biological indicators - plant or animal species or communities with a narrow range of environmental tolerances that may be selected for monitoring because their absence or presence and relative abundances serve as barometers of environmental conditions.

Biological integrity - the condition of the aquatic community inhabiting unimpaired waterbodies of a specified habitat as measured by community structure and function.

Biological monitoring or Biomonitoring - multiple, routine biological surveys over time using consistent sampling and analysis methods for detection of changes in biological condition.

Biological survey or Biosurvey - collecting, processing and analyzing representative portions of an estuarine or marine community to determine its structure and function.

Biomagnification - the result of the processes of bioconcentration and bioaccumulation by which tissue concentrations of bioaccumulated chemicals increase as the chemical passes up through two or more trophic levels in the food chain.

Biota - plants, animals and other living resources.

Brackish - water with salt content ranging between that of sea water and fresh water; commonly used to refer to oligohaline waters.

Coastal waters - marine waters adjacent to and receiving estuarine discharges and extending seaward over the continental shelf and/or the edge of the U.S. territorial sea.

Community - any group of organisms belonging to a number of different species that co-occur in the same habitat or area; an association of interacting assemblages in a given waterbody.

Demersal - living on or near the bottom of a body of water (e.g., mid-water and bottom-dwelling fish and shellfish, as opposed to surface fish).

Designated uses - descriptions of the optimal use of each waterbody as defined by States including natural fisheries, recreation, transportation, or mixed uses.

Discriminant analysis - a type of multivariate analysis used to distinguish between two groups.

Ecological integrity - the condition of an unimpaired ecosystem as measured by combined chemical, physical (including habitat), and biological attributes.

Ecoregion - geographic regions of ecological similarity defined by similar climate, landform, soil, natural vegetation, hydrology or other ecologically relevant variables.

Effects Range-Low - concentration of a chemical in sediment below which toxic effects were rarely observed among sensitive species (10th percentile of all toxic effects).

Effects Range-Median - concentration of a chemical in sediment above which toxic effects are frequently observed among sensitive species (50th percentile of all toxic effects).

Epibenthos - those animals (usually excluding fishes) living on the top of the sediment surface.

Epifauna - benthic animals living on the sediment or on and among rocks and other structures.

Estuarine or coastal marine classes - classes that reflect basic biological communities and that are based on physical parameters such as salinity, depth, sediment grain size, dissolved oxygen and basin geomorphology.

Estuarine waters - semi-enclosed body of water which has a free connection with the open sea and within which seawater is measurably diluted with fresh water derived from land drainage.

Facultative - capable of adaptive response to varying environments.

Habitat - a place where the physical and biological elements of ecosystems provide an environment and elements of the food, cover and space resources needed for plant and animal survival.

Halocline - a vertical gradient in salinity.

Holoplankton - an aggregate of passively floating, drifting or somewhat motile organisms throughout their entire life cycle.

Hypoxia - the condition of low dissolved oxygen in aquatic systems (typically with a concentration $< 2\text{-mgL}^{-1}$ but $> 0.5\text{-mgL}^{-1}$).

IBI or Index of Biotic Integrity - a fish community assessment approach that incorporates the zoogeographic, ecosystem, community and population aspects of fisheries biology into a single ecologically-based index of the quality of a water resource.

Impact - a change in the chemical, physical or biological quality or condition of a waterbody caused by external sources.

Impairment - a detrimental effect on the biological integrity of a water body caused by an impact.

Indexes - a usually dimensionless numeric combination of scores derived from biological measures called metrics.

Index period - a sampling period, with selection based on temporal behavior of the indicator(s) and the practical considerations for sampling.

Indicator - characteristics for the environment, both abiotic and biotic, that can provide quantitative information on environmental conditions.

Indicator taxa or Indicator species - those organisms whose presence (or absence) at a site is indicative of specific environmental conditions.

Infauna - see benthos.

In situ - measurements taken in the natural environment.

Kurtosis - a measure of the departure of a frequency distribution from a normal distribution, in terms of its relative peakedness or flatness.

Littoral zone - the intertidal zone of the estuarine or seashore; i.e., the shore zone between the highest and lowest tides.

Macrobenthos - see benthos.

Macrofauna - animals of a size large enough to be seen by the unaided eye and which can be retained by a U.S. Standard No. 30 sieve (28 meshes/in, 0.595-mm openings).

Macroinvertebrates - animals without backbones of a size large enough to be seen by the unaided eye and which can be retained by a U.S. Standard No. 30 sieve (28 meshes/in, 0.595-mm openings).

Macrophytes - large aquatic plants that may be rooted, non-rooted, vascular or algiform (such as kelp); including submerged aquatic vegetation, emergent aquatic vegetation, and floating aquatic vegetation.

Meiofauna - small interstitial; i.e., occurring between sediment particles, animals that pass through a 1-mm mesh sieve but are retained by a 0.1-mm mesh.

Meroplankton - organisms that are planktonic only during the larval stage of their life history.

Mesohaline - the estuarine salinity zone with a salinity range of 5-18-ppt.

Metric - a calculated term or enumeration which represents some aspect of biological assemblage structure, function, or other measurable characteristic of the biota that changes in some predictable way in response to impacts to the water body.

Multimetric approach - an analysis technique that uses a combination of several measurable characteristics of the biological assemblage to provide an assessment of the status of water resources.

Multivariate community analysis - statistical methods (e.g., ordination or discriminant analysis) for analyzing physical and biological community data using multiple variables.

NPDES or National Pollutant Discharge Elimination System - a permit program under Section 402 of the Clean Water Act that imposes discharge limitations on point sources by basing them on the effluent limitation capabilities of a control technology or on local water quality standards.

Oligohaline - the estuarine salinity zone with a salinity range of 0.5-5-ppt.

Optimal - most favorable point, degree, or amount of something for obtaining a given result; in ecology most natural or minimally disturbed sites.

Pelagic - pertaining to open waters or the organisms which inhabit those waters.

Pelagic zone - the area of open water beyond the littoral zone.

Percent fines - in analysis of sediment grain size, the percent of fine (.062-mm) grained fraction of sediment in a sample.

Photic zone - the region in a water body extending from the surface to the depth of light penetration.

Plankton - free-floating or drifting organisms with movements determined by the motion of the water.

Population - an aggregate of interbreeding individuals of a biological species within a specified location.

Pseudoreplication - the repeated measurement of a single experimental unit or sampling unit, with the treatment of the measurements as if they were independent replicates of the sampling unit.

Pycnocline - a zone of marked density gradient.

Reference condition - the chemical, physical or biological quality or condition exhibited at either a single site or an aggregation of sites that represents the least impaired condition of a classification of waters to which the reference condition applies.

Reference sites - minimally impaired locations in similar water bodies and habitat types at which data are collected for comparison with test sites. A separate set of reference sites are defined for each estuarine or coastal marine class.

Replicate - taking more than one sample or performing more than one analysis.

Saprobien system - an ecological classification of a polluted aquatic system that is undergoing self-purification. Classification is based on relative levels of pollution, oxygen concentration and types of indicator microorganisms; i.e., saprophagic microorganisms - feeding on dead or decaying organic matter.

Seiche - a wave that oscillates (for a period of a few minutes to hours) in lakes, bays, lagoons or gulfs as a result of seismic or atmospheric disturbances (e.g., "wind tides").

Simulation models - mathematical models (logical constructs following from first principles and assumptions), statistical models (built from observed relationships between variables), or a combination of the two.

Skewness - the degree of statistical asymmetry (or departure from symmetry) of a population. Positive or negative skewness indicates the presence of a long, thin tail on the right or left of a distribution respectively.

Test sites - those sites being tested for biological impairment.

Trophic level - a broad class of an ecosystem (e.g., green plants, herbivores, carnivores) in which all organisms procure food in the same general manner.

Use designations - predominant uses each State determines appropriate for a particular estuary, region, or area within the class.

Zooplankton - free-floating or drifting animals with movements determined by the motion of the water.