SCCWRP Key Definitions

Technical science products utilize a common set of management and technical terms that have similar meaning and can be easily conflated. The purpose of this section is to provide definitions of the policy terms that are distinct from science terms used by the SCCWRP technical team.

**Management Terms[[1]](#footnote-1)**

***Water Quality Standard***s: Water quality standards are the foundation of the water quality-based control program mandated by the Clean Water Act. Water Quality Standards define the goals for a waterbody by designating its uses, setting criteria to protect those uses, and establishing provisions to protect water quality from pollutants. A water quality standard consists of three basic elements:

1. **Designated uses** of the water body (e.g., recreation, water supply, aquatic life, agriculture; Table 1.1),
2. **Water quality criteria** to protect designated uses (numeric pollutant concentrations and narrative requirements), and
3. **Antidegradation policy** to maintain and protect existing uses and high-quality waters.

***Water Quality Criteria:*** Section 303 of the Clean Water Act gives the States and authorized Tribes power to adopt water quality criteria with sufficient coverage of parameters and of adequate stringency to protect designated uses. In adopting criteria, States and Tribes may:

* Adopt the criteria that US EPA publishes under §304(a) of the Clean Water Act;
* Modify the §304(a) criteria to reflect site-specific conditions; or
* Adopt criteria based on other scientifically-defensible methods.

The State of California’s water criteria are implemented as “water quality objectives,” as defined in the Water Code (of the Porter Cologne Act; for further explanation, see below).

States and Tribes typically adopt both **numeric** and **narrative** criteria. **Numeric** criteria are quantitative. **Narrative** criteria lack specific numeric targets but define a targeted condition that must be achieved.

Section 303(c)(2)(B) of the Clean Water Act requires States and authorized Tribes to adopt numeric criteria for priority toxic pollutants for which the Agency has published §304(a) criteria. In addition to narrative and numeric (chemical-specific) criteria, other types of water quality criteria include:

* Biological criteria: a description of the desired biological condition of the aquatic community, for example, based on the numbers and kinds of organisms expected to be present in a water body.
* Nutrient criteria: a means to protect against nutrient over-enrichment and cultural eutrophication.
* Sediment criteria: a description of conditions that will avoid adverse effects of contaminated and uncontaminated sediments.

***Water Quality Objectives:*** The Water Code (Porter-Cologne Act) provides that each Regional Water Quality Control Board shall establish water quality objectives for the waters of the state i.e., (ground and surface waters) which, in the Regional Board's judgment, are necessary for the reasonable protection of beneficial uses and for the prevention of nuisance. The State of California typically adopts both **numeric** and **narrative** objectives. **Numeric** objectives are quantitative. **Narrative** objectives present general descriptions of water quality that must be attained through pollutant control measures. Narrative objectives are also often a basis for the development of numerical objectives.

***Biostimulatory Target*:** Numeric value for nutrients, organic matter or other biostimulatory conditions that represent management decisions, e.g. guidance to interpret a narrative biostimulatory objective.

***Impairment.*** Policy or management decision on status of designated waterbody beneficial use(s) due to regulated impacts, e.g. biostimulatory substances.

**Science Terms:**

***Indicator*:** A characteristic of an ecosystem that is related to, or derived from, a measure of biotic or abiotic variable, that can provide quantitative information on ecological condition, structure and/or function. With respect to the water quality objectives, indicators are the ecological parameters for which narrative or numeric objectives are developed.

**Eutrophication**: Eutrophication is defined as the acceleration of the delivery, in situ production of organic matter, and accumulation of organic matter (Nixon 1995). One main cause of eutrophication in estuaries is nutrient over enrichment (nitrogen, phosphorus and silica). However, other factors influence primary producer growth and the build-up of nutrient concentrations, and hence modify (or buffer) the response of a system to increased nutrient loads (herein referred to as **co-factors**). These cofactors include hydrologic residence times, mixing characteristics, water temperature, light climate, grazing pressure and, in some cases, coastal upwelling.

***Numeric Protection or Assessment Goals or Endpoints:*** Numeric values that represent desired management protection levels for either biological integrity or human-related ecosystem services. Values used here can represent state or federal policy (e.g. federal cyanotoxin criteria) or scientific consensus (e.g. Bricker et al., 2003). In a scientific context, they are frequently used as the basis for derivation of a range of eutrophication thresholds that could achieve an intended management outcome (e.g. low risk of cyanotoxin, low risk of poor biological integrity), but are not intended as an explicit management recommendation for numeric guidance or objectives.

***Biostimulatory Threshold:*** Numeric values for nutrients, organic matter or biostimulatory conditions that can be derived through scientific approaches and linked to risk of eutrophication, typically established through: 1) deviation from an established percentile of reference waterbodies, 2) empirical stress-response modeling, and/or 3) causal (mechanistic) modeling.

***Index Value or Score:*** The continuum of values (index value) or a given grade (score) for a site associated with scoring of standardized bioassessment indices, typically based on field observations.

***Impact:*** A quantifiable and typically, statistically significant, adverse effect of a stressor on waterbody ecological condition and associated ecosystem services.

1. Preliminary definitions used here will be amended through Waterboard harmonization of management and scientific terms and definitions. Given here then, these are intended to assure clarity in preliminary scientific products. [↑](#footnote-ref-1)