

CEFF Technical Report Glossary

- *Dimensionless reference hydrograph*: a scalable representation of reference hydrology based on streamflow data from unimpaired catchments in a hydrologic stream class. The y-axis is expressed in dimensionless units by dividing the daily discharge by the average annual discharge. See Lane et al. 2018.
- *Ecological condition*: a species or community and their attributes within the stream ecosystem influenced by flow, ecological processes, and habitat conditions. Ecological conditions can be assessed using a set of physical (e.g. streambed sediment composition, water temperature) and/or biological (e.g. an amphibian or fish species) descriptors to determine the health of the ecosystem. Desired conditions are those attributes identified to achieve a management goal.
- *Ecological flow criteria*: a set of predicted functional flow metrics that describe ranges of flows that must be maintained within a stream and its margins to support the natural ecosystem functions for healthy ecosystems.
- *Ecological management goal*: (mandated) protection and conservation goals aimed at improving overall stream health or condition. Ecological management goals may include specificity of species and communities of interest. Ecological management goals may not be easily measured, but ecological performance measures could include biologic, geomorphic, physical habitat, and water quality parameters.
- *Ecological performance measures*: quantitative measures of ecological conditions that are expected to respond (directly or indirectly) to changes in flow and that can be directly measured using standard monitoring techniques. Performance measures may include a directional statement, e.g. increased the frequency (number of times) and duration (number of days) of flows that may access the floodplains for salmonid rearing.
- *Ecological response* - The ecological conditions that result due to a change in flows, physical habitat, water quality, or other management action aimed at improving or maintaining overall stream health or condition.
- *Flow-ecology relationship*: any quantitative relationship that predicts a change in an ecological response due to a change in flow, potentially mediated by physical habitat, water quality and/or biological interactions. Specifically for CEFF, a relationship that quantitatively relates a flow metric with an ecological response for evaluating an ecological management goal.
- *Ecosystem functions (or ecosystem processes)*: the dynamic actions supporting the biologic composition (individual species, communities), physical habitat (geomorphology and hydraulics), and water quality of a river (see Table 1.1).
- *Environmental flow recommendations*: ecological flow criteria adjusted to consider and balance other competing human uses to produce a flow regime that balances human and ecological needs.
- *Flow characteristic*: quantifiable descriptor of a flow component: magnitude, timing, duration, frequency, rate of change (referred to in Poff et al. 1997 and by Annear et al. 2004 as flow components).
- *Flow regime*: inter-annual and intra-annual flow signature of a river that can be described in terms of flow components and flow characteristics.

- *Functional flow component*: distinct aspects of a natural flow regime that sustain ecological, geomorphic, or biogeochemical functions, and that support the specific life history and habitat needs of native aquatic species (Yarnell et al. 2015). Each component is quantified by functional flow metrics, where timing of some metrics may vary based on latitude and elevation.
- *Functional flow metrics*: discrete numeric measures of the flow characteristics estimated for each functional flow component that can be calculated directly from streamflow data. (e.g. magnitude of annual winter flood (cfs), daily rate of spring snowmelt recession (percent per day), summer baseflow duration (days). For further details see functional flow metrics overview document (eflows.ucdavis.edu) and Yarnell et al. 2020.
- *Stream class (or Hydrologic stream class)*: one of nine stream classes based on the reconciled hydrologic stream classification for California completed by Lane et al. (2018).