

GLOSSARY

Aquatic connectivity: Aquatic connectivity refers to physically linked pathways through which energy, matter, and organisms move from one place to another through water. It includes longitudinal connectivity upstream and downstream, vertical movement within a water column, as well as lateral connectivity of the main waterbody to riparian and floodplain habitat, all of which play a vital role in a functioning aquatic ecosystem.

Aquatic ecosystem: An aquatic ecosystem is an interdependent system of plants, animals, and their physical environment in a waterbody.

Aquatic organisms: Aquatic organisms are plants or animals that spend all or part of their life in water. This includes, but is not limited to, fish, mussels, amphibians, reptiles, insects, and aquatic vegetation.

Backwatering: Backwatering is the rise of the water level upstream caused by a downstream channel constriction or obstruction such as a dam, weir, bridge, or culvert. It can also include raising water levels to enhance fish passage.

Barrier: A barrier to aquatic connectivity is an obstruction that prevents or alters the natural flow of water within or between waterbodies, potentially impacting water quality, sediment movement, type of habitat, and fish passage. A barrier to fish passage is anything that prevents or reduces the ability of fish or other aquatic species to move where needed to survive and complete their life cycle within an aquatic system. The extent to which a barrier may reduce or prohibit the movement of fish or other aquatic species may vary by species and life stage. Barriers may be the result of structural impediments, such as a dam, levee, undersized culvert, or other manmade structures, or of environmental conditions, such as, waterfalls, bedrock, sediment, water quality, temperature, or flow.

(1) *A partial barrier* to fish passage reduces movement of some individuals of one or more fish or other aquatic species some or all of the time.

(2) *A complete barrier* to fish passage prohibits movement of all individuals of one or more fish or other aquatic species all of the time.

Bypass channel: A bypass channel is a type of fishway that wholly circumvents the barrier and, where possible, resembles, in form and function, a side channel or natural tributary of the main river system.

Culvert: A culvert is a manmade conduit or passageway under a road, rail, trail, or other waterway obstruction. A culvert differs from a bridge in that it is covered with embankment and is composed of structural material around the entire perimeter, although some are supported on spread footings with the streambed serving as the bottom of the culvert.

Dam: A dam is an artificial barrier constructed across a river, stream, estuary, or other waterway with the purpose of impounding water for recreation, storage, diversion, power, or flood control.

Federal trust species. Federal trust species includes anadromous and catadromous fish, other inter-jurisdictional aquatic species, endangered or threatened species, and species proposed for listing under the Endangered Species Act.

Fish lift: A fish lift is a fishway where fish are directed into a holding pen (hopper) at the base of a barrier. Through mechanical means, the holding pen is raised to the top of the barrier where the fish may be released or loaded into other transport vehicles for release at an alternative site.

Fish passage: Fish passage is the ability of fish or other aquatic species to move throughout an aquatic system among all habitats necessary to complete their life cycle. On a site-specific scale, fish passage is the ability of fish or other aquatic species to move between locations in an aquatic system.

Fishway: A fishway is the combination of elements (structures, facilities, devices, project operations, and measures) necessary to ensure the safe, timely, and effective movement of fish past a barrier.

Impoundment: An impoundment is a body of water created by an artificial structure.

Inter-jurisdictional fish: Inter-jurisdictional fish are populations that two or more governing bodies (e.g., States, nations, Tribal governments) manage because of the populations' geographic distribution or migratory patterns.

Levee: A levee is any manmade low ridge or embankment along the edges of a stream or river that impedes flooding of adjacent land.

Low water crossing: A low water crossing is a naturally shallow area, reinforced stream bottom, or elevated crossing that allows people or vehicles to cross a waterbody when the water is low, but becomes completely submerged when the water is high.

Retrofit: A retrofit is a physical change to a barrier that improves aquatic connectivity or fish passage without completely replacing the barrier.

Rock ramp: A rock ramp is a fishway consisting of a long sloping channel with boulders placed inside it to create variable water velocities and resting areas for migrating fish, and to simulate a natural stream.

Screen: A screen is any device designed to prevent fish from entering a water intake or diversion. Screen materials vary and include plates, bars, and mesh. Screens also include behavioral avoidance measures such as electric fields or bubble screens.

Technical fishway: A technical fishway is one designed without trying to mimic the appearance and complexity of a natural system. Standard fish ladders, culverts, and fish lifts are technical fishways.

Waterbody: A waterbody is any mass of water, including, but not limited to, rivers, streams, lakes, ponds, wetlands, marshes, estuaries, bays, and the open ocean.

Water diversion: Water diversions consist of a system of structures and measures that intercept surface water and divert it from a waterbody, modifying the natural flow or water levels in the waterbody.

Weir: A weir is a manmade barrier designed to provide hydraulic control without completely stopping flow or creating a large storage impoundment. The degree of control is set by the height of the weir as the outflow flows over its crest.