

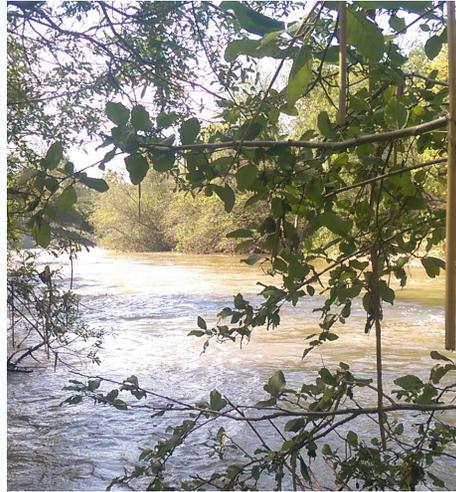
FLOODPLAINS AND RIPARIAN FORESTS OF ALAMEDA CREEK

A **floodplain** is an area of land next to a creek or river that experiences flooding during periods of high flow. *Functioning floodplains are essential to healthy ecosystems.* They store nutrients, filter pollutants, and provide nourishment for a vast array of life. They absorb destructive floodwater and recharge groundwater.

When rivers are connected to their floodplains the channel is able to migrate naturally and create important off-channel habitats. During high flow events, water is spread across floodplains – dissipating energy and depositing nutrients. They provide refuge for young fish free from the battering of the fast-moving waters.

The water storage and recharge functions of floodplains ensure a more constant source of the cold water needed by salmon and steelhead. Water seeps into the groundwater table during floods and recharges underground aquifers. These aquifers then release water to the stream during the summer months. Without this recharge, summer flows are typically lower and water is warmer.

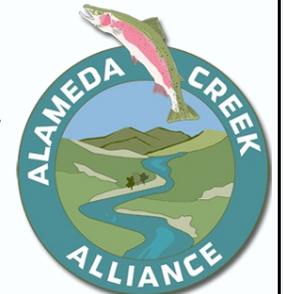
Right: Steelhead trout (NOAA Fisheries)



Riparian forests occur along lakes and rivers where there is fertile soil and an ample water supply. These forests appear as a green belt along water courses, and are one of the most striking features of California's landscape.

The dynamic nature of California creeks and rivers creates numerous habitats within these productive systems, which helps to explain why *riparian forests in California carry a greater diversity of wildlife than any other habitat type.* *The leaves, branches, and other organic matter input into creeks and rivers from riparian forests form the base of the in-stream food web.*

Riparian forests also benefit people by providing recreational opportunities, slowing bank erosion, and by directing flows and sediment transport.

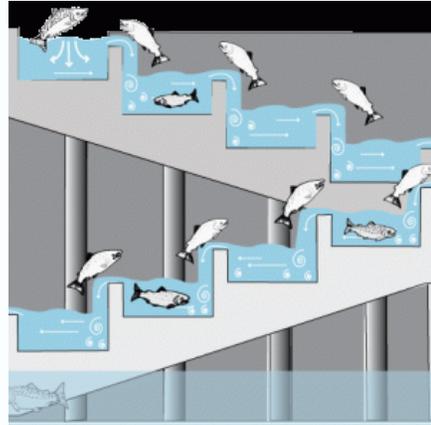


ALAMEDA CREEK FLOOD CONTROL CHANNEL



Above: Managed primarily for flood control and water management, this 12-mile reach to the Bay has engineered banks kept clear of vegetation. The bottom of the channel is flat, which leads to little diversity in flow and in-stream habitats.

Below: This concrete weir was originally built for water management but also blocked fish migration. It was notched and partially deconstructed in 2009 for better fish passage. Fish ladders are another way to allow fish to pass these barriers.



ALAMEDA CREEK



Above: Alameda Creek through Niles Canyon has natural meanders that provide a diversity of habitats within the creek. Overhanging vegetation feeds the creek food web, stabilizes banks, and provides shelter to fish from overhead predators.

Below: The creek is a dynamic environment that changes with the seasons. Rains bring higher flows that pick up (entrain) sediment and move it downstream, where it helps to build protective marshes at the Bay's edge.

