

Elements of Healthy Stream and Riparian Habitats

Salmon, steelhead, and other aquatic and terrestrial wildlife depend on healthy rivers and streams. Habitat criteria needed for healthy salmon and steelhead populations include unobstructed migration, spawning and rearing habitat, cold water, and natural tributaries and side channels.

High quality habitat for threatened, endangered, and special status species sustains resiliency for individuals and populations that have been decimated by drought, wildfires, climate change, urban development, roads, dams, agriculture, and other impacts.



Tributaries, Multi-thread Channels, and Floodplains

- Characteristics:**
- Lower flows
 - Smaller channels

- Benefits:**
- High quality rearing habitat
 - Areas of slower flows (velocity refugia)
 - Protection from predators

Riparian Habitat

- Characteristics:**
- Mature, native riparian vegetation
 - Overhanging vegetation

- Benefits:**
- Shade and cooler temperatures in stream (thermal refugia)
 - Streambank stabilization
 - Reduction in stream sedimentation

Spawning Habitat

- Characteristics:**
- Well-sorted gravels free from fine sediments
 - Sufficient flow

- Benefits:**
- Suitable substrate for redd building
 - Adequate oxygenation of embryos

Channel Complexity

- Characteristics:**
- Fallen trees, logs, rootwads
 - Boulders
 - Pools
 - Undercut banks
 - Riffles and runs
 - Stream meander

- Benefits:**
- High quality rearing habitat
 - Cover from predators
 - Mix of low- and high-velocity habitats
 - Areas of slower flows (velocity refugia)
 - Cooler temperatures (thermal refugia)
 - Food sources that promote a nutrient cycle (invertebrates, etc.)



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