

Wood in the Water is *Good* for the River and Salmon

Wood in the water includes the fallen trees, old stumps, root wads and piles of branches found along the edges of larger rivers and spanning smaller streams.

Wood is *Vitally* Important to our Chehalis Basin Salmon:



Photo Credit: Kathy Jacobson

- Wood provides **diverse** and **complex*** habitat for salmon and other creatures. The more complex a system is, the better it is for fish.
- This wood helps to **stabilize streambanks** and helps to sort and stabilize **spawning gravels** for salmon. This **creates cover** and helps to create backwaters, and off-channel habitat that provide refuge and foraging opportunities for juvenile salmon at a **wide range of river flows**.

juvenile over-wintering salmon species. Wood helps to create **deep pools** which store cold water. These pools provide **resting areas** for migrating spawners and **holding areas** for species like spring Chinook salmon that spend significant time in freshwater before they move upstream to spawn.

- Also provides food sources and habitat for aquatic macroinvertebrates, who in turn are **food for salmon**.
- Wood also helps to trap sediment and **reduce excessive erosion**. It helps to **stabilize sand bars** and form islands which provide **edge habitat**. Edge habitat is critical for newly emerged salmon and provides protection from birds and other predators.

* Complex salmon habitat is defined as having a large count of habitat units within a given unit length of channel.



Photo Credit: Kathy Jacobson

The Chehalis River outside town of Oakville

What Happens to the Health of Rivers *without* Wood?

- The loss of wood is directly connected to extensive **salmon habitat degradation**, and the river channel becomes simplified, and ditch-like.
- There is a **loss of pools, sediment storage, flow complexity, and lack of hiding places from predators**.
- **Loss of low-velocity habitats (cover)** that are crucial to the survival of overwintering species like coho, steelhead, and Spring Chinook.
- Riverbanks and beds are subjected to higher **erosion** leading to **increased channel migration** rates in some areas **and channel incision** in others. River bottoms can become scoured to bedrock. This is the opposite of how a healthy river system can store and sort gravels needed by spawning salmon.

This publication was created by the Chehalis Basin Lead Entity. For more information on ways to protect and restore salmon habitat, visit: www.chehalisleadentity.org.

Rebuilding Resilience in Rivers

Large wood plays a critical role in maintaining physical complexity in streams.

Swift river chutes send wood, nutrients and food downstream

Fast streamflow delivers food to salmon, shutting aquatic larvae and insects downstream

Log jams build islands, create gravel bars and divide the river into fast channels and deep slow pools

Deep, quiet waters offer salmon a refuge from predators, resting areas for juvenile fish and provide feeding and spawning grounds

Gravel & fine sediment increase spawning grounds available for salmon and maintain streambed elevations



Logs, boulders and tree stumps break up the flow of the river