

# Resources

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Department of Public Works**  
701 Ocean Street, 4th Floor  
Santa Cruz, CA 95060  
[www.co.santa-cruz.ca.us](http://www.co.santa-cruz.ca.us)  
(831) 454-2580

**California Department  
of Fish and Game (CDFG)**  
20 Lower Ragsdale Drive, Suite 100  
Monterey, CA 93940  
[www.dfg.ca.gov](http://www.dfg.ca.gov)  
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**Santa Cruz County Resource  
Conservation District**  
820 Bay Avenue, Suite 128  
Capitola, CA 95010  
[www.sccrcd.org](http://www.sccrcd.org)  
(831) 464-2950

**Soquel Demonstration State Forest**  
4750 Old San Jose Road  
Soquel, CA 95073  
(831) 475-8643

## For More Information on Large Woody Material

Neil Lassetre's report: [Process Based Management of Large Woody Debris at the Basin Scale, Soquel Creek, California](#) is available at the Soquel Demonstration State Forest for viewing.

*Information in this brochure was adapted from the Santa Cruz County Stream Care Guide. Copies can be obtained by calling (831) 454-3154 or visiting [www.co.santa-cruz.ca.us](http://www.co.santa-cruz.ca.us).*

# Santa Cruz County Resource Conservation District

The Santa Cruz County Resource Conservation District (RCD) is a non-regulatory, not-for-profit entity. The mission of the SCCRCD is to help people protect, conserve and restore natural resources through information, education, and technical assistance programs. The District provides an active program for the conservation of soil, water, plant, and wildlife resources in Santa Cruz County.

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# Large Woody Material



Photo provided by Neil Lassetre

# In Your Watershed



## Ecological Importance

### Creates Habitat for Fish

Large woody material in the creek- fallen logs, stumps, root wads, and large branches- provides an important source of cover, food, and shelter for fish and other stream dwellers. Submerged trees help the river's current to scour deep holes used by fish for refuge and cover.

Areas of accumulated woody material have been found to support the highest number of juvenile steelhead and coho salmon in local streams.



*Steelhead Trout*

*Coho Salmon*

### Contributes to Channel Complexity

Large woody material dissipates streamflow, stores and distributes sediment, and creates channel features, such as pools, riffles, and waterfalls.

A moderate amount of such material can also provide natural protection for streambanks. Fallen trees deflect current away from highly unstable streambanks.

In cases where large woody material is causing rapid bank erosion by redirecting stream flow, or creating a flood hazard on your property, modification or removal of this material may be warranted.

This work requires a consultation with California Department of Fish and Game to ensure it is done properly without harming the stream. The County of Santa Cruz Public Works Department provides assistance with the assessment and modification of large woody material accumulations for flood control purposes.

### Large woody material

Logs, root-wads, stumps, trees, or parts of trees recruited from the riparian corridor serve a vital role in stream ecology. In the past the importance of large woody material was unknown and large pieces of wood in streams were considered a nuisance and a flood risk. It was a common practice to pull large woody material from streams, even by public agencies. Now that we know the ecological importance of large woody material, it is crucial that all streamside residents or those who have any interaction with streams in your watershed, act as good stewards and leave large woody material in streams in order to sustain fisheries habitat.



### Benefits of Woody Material

- Trap sediment that would otherwise be washed downstream.
- Create pools and overhead cover that act as critical fish habitat.
- Dissipate stream energy that would otherwise potentially cause erosion to the bed and banks of the stream.
- Can create and maintain islands and gravel bars that increase habitat complexity.
- Provide a food source to aquatic insects and trap leaves and other important nutrient sources like salmon carcasses.

When woody material is removed, streams tend to become simpler. They will cut off meanders, have long uniform riffles, begin to down-cut and erode laterally, and will lose much of their biodiversity.

## Important tips for managing Woody Material

- Woody material should be left in the creek.
- Woody material may need to be modified or removed if it causes flooding or erosion that threatens life or property, or speeds up natural erosion processes.
- In an emergency, you have the right to protect life and property, but must notify the California Department of Fish and Game within 2 weeks of starting a project. In a non-emergency, contact Fish and Game for advice and information about obtaining a permit.
- In an emergency, trim smaller branches that catch other material first. Otherwise, modify woody material so that trunks or root wads remain intact. Keep log lengths at least 1.5 times the stream width.
- Most fish can swim through, under, or around log clusters or debris jams, especially during high flows. If you know that fish can't swim through a barrier, contact the California Department of Fish and Game.
- Brush, weeds, grass clippings, or other small material should not be thrown into a creek or dumped on creek banks where it can be washed away by the stream. This small material could create a debris jam or block a culvert which can cause flooding, erosion, or block fish passage.

