

Tree Management

Trees on SCWA property are routinely evaluated throughout the year in the course of regular operations and maintenance. The Agency also responds to inspection requests from the public. The decision to remove, prune, or preserve individual trees is made by qualified field staff familiar with arboriculture and regional and wetland ecology. The Agency follows recognized International Society of Arboriculture (ISA) safety standards to protect people, property, and tree health (see www.isa-arbor.com). If the Agency has evaluated a tree and determined that there is an imminent hazard, the tree will be pruned or removed. If a circumstance is not currently causing a hazard but has the potential to do so, it will be placed on a "watch list" for continued monitoring.

Creating a healthy ecosystem is the Agency's long-term goal. Native trees are essential to this process, and they provide a natural food base that improves the value of the wildlife habitat, while non-native trees do not offer this benefit. Because the Agency wants to retain this natural functioning whenever possible, native trees are encouraged over others by removing non-natives, such as eucalyptus, and allowing adjacent native tree saplings to grow in their place. Additionally, a native tree that has died or has a structural

defect might be retained for its habitat value if it is not creating a hazard for people or property.

What about trees growing over into my property?

As stated earlier, the Agency follows recognized ISA standards to protect people, property, and tree health. Overhanging limbs are not necessarily a hazard. If the Agency inspects a tree and determines that no apparent structural defect is present, no pruning measures are taken. Owners are permitted to prune the portion of a tree that crosses their property line so long as they do it reasonably, in accordance with ISA standards, and without incurring liability to the Agency by compromising the health and the stability of the tree.* If you would like to request an evaluation of a tree on SCWA property, please call Jon Niehaus at (707) 521-1845.

*Civil Code §3514 provides: "One must so use his rights as not to infringe upon the rights of another." Civil Code §1714 provides: "Everyone is responsible, not only for his or her willful acts, but also for injury occasioned to another by his or her want of ordinary care or skill in the management of his or her property or person." Civil Code §829 provides: "The owner of land in fee has the right to the surface to everything permanently situated beneath or above it."



Environment and Recreation

Our commitment to routine annual maintenance for flood protection has not wavered since the 1960s, when many of our stream and channel facilities were constructed. The Agency's approach to stream maintenance has evolved beyond flood management, however, and now includes multiple objectives, such as resource protection and environmental sustainability.

SCWA biologists supervise maintenance work to ensure compliance with federal laws and regulations, such as the Endangered Species Act and the Clean Water Act, as well as state laws and regulations administered by the Department of Fish and Game and the Regional Water Quality Control Board. Maintaining compliance requires an extensive authorization process each year for the Agency's planned maintenance activities.

SCWA takes advantage of its role as a steward of local streams by planting native trees not only to improve flood protection and wildlife habitat but also to reduce greenhouse gases such as carbon dioxide, in an effort to combat global warming.

Public access to paths and trails along streams allows outdoor enthusiasts to enjoy the natural beauty of our region. SCWA works with other government and non-government entities to increase and improve public access and to connect trails for a variety of outdoor uses, such as hiking, bicycling, and jogging.



SONOMA COUNTY
WATER AGENCY

Stream Maintenance Program

Native Riparian Trees

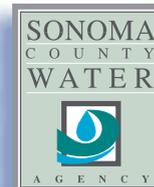
- ✓ Big leaf maple, *Acer macrophyllum*
- ✓ Box elder, *Acer negundo californicum*
- ✓ California bay laurel, *Umbellularia californica*
- ✓ California buckeye, *Aesculus californica*
- ✓ California live oak, *Quercus agrifolia*
- ✓ Cottonwood, *Populus fremontii*
- ✓ Oregon ash, *Fraxinus latifolia*
- ✓ Redwood, *Sequoia sempervirens*
- ✓ Valley oak, *Quercus lobata*
- ✓ White alder, *Alnus rhombifolia*
- ✓ Willow, *Salix*, many species



At left, a member of the Sonoma County Summer Youth Ecology Corps plants a native tree.

Non-native, Invasive Riparian Trees Being Phased Out

- ✗ Acacia, many species
- ✗ Arroyo willow, *Salix lasiolepis*
- ✗ Eucalyptus, many species
- ✗ Flowering plum, *Prunus* species
- ✗ Indian bean, *Catalpa bignonioides*
- ✗ Lombardy poplar, *Populus nigra* 'Italica'
- ✗ Privet, *Ligustrum* species
- ✗ Tree of heaven, *Ailanthus altissima*
- ✗ White poplar, *Populus alba*



For more information about the SCWA Stream Maintenance Program and the current list of affected streams, visit www.sonomacountywater.org or contact Stream Maintenance Coordinator Jon Niehaus at (707) 521-1845.

Stream Maintenance Program

IMPROVING *Water Quality* AND *Flood Protection* IN OUR STREAMS

WHILE PROVIDING *Wildlife Habitat* AND *Recreation* FOR OUR COMMUNITY

Each summer the Sonoma County Water Agency (SCWA) works in and around streams throughout Sonoma County, removing sediment and garbage and planting trees. Riparian canopies—mature trees surrounding a stream—provide shade, which helps cool the water and shade out less desirable plant species.

Stream maintenance activities support a proactive regional approach to flood protection and stream and wildlife habitat restoration. Stream maintenance also offers our community the access and the infrastructure needed to enjoy streams for recreational activities.

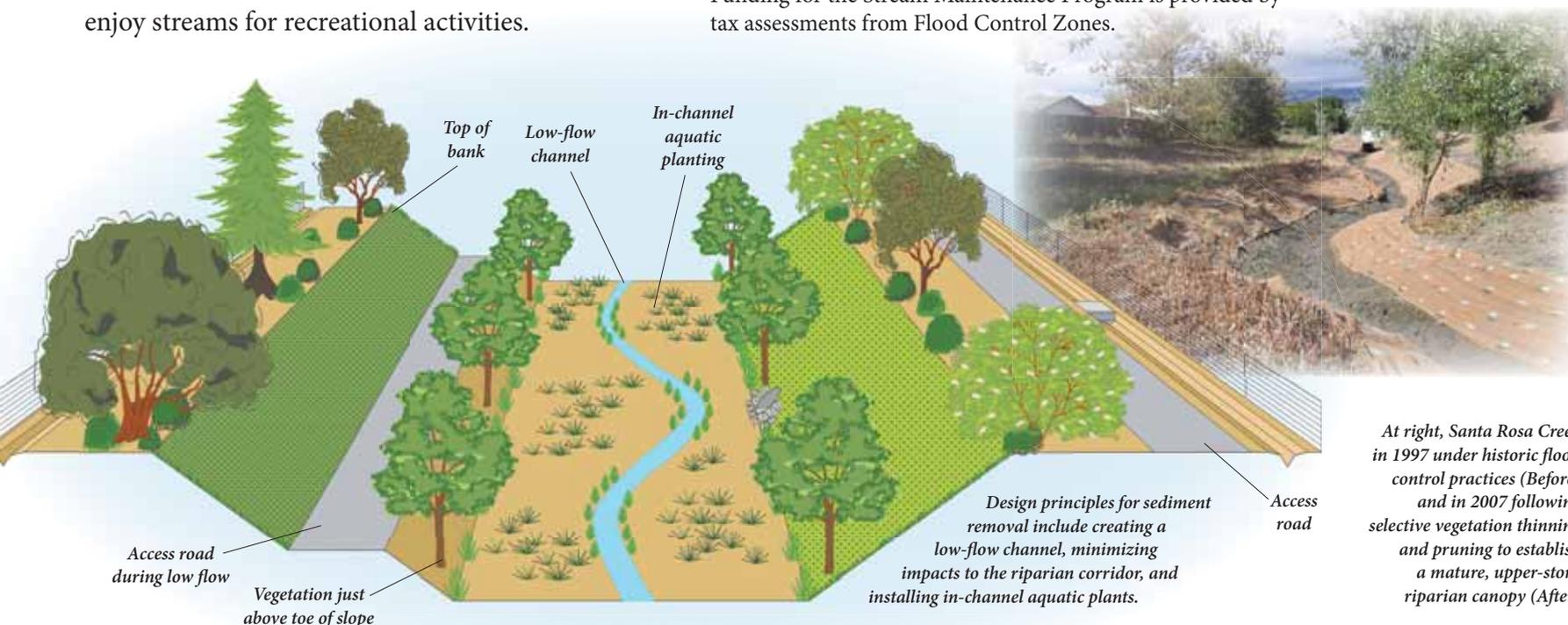
Maintaining Our Waterways

SCWA maintains approximately 75 miles of engineered flood control channels in Sonoma County. Such channels are designed and constructed to provide a specific level of flood protection, such as for a 25-, 50-, or 100-year flood event. The channels are located primarily near Santa Rosa, Rohnert Park, Cotati, Windsor, Petaluma, and Sonoma. The Agency also has discretionary hydraulic easements to maintain approximately 150 miles of modified and natural streams. Such easements give SCWA the right, but not the obligation, to conduct maintenance activities (typically vegetation and debris removal) on private property to maintain the hydraulic capacity of both natural and modified streams (those that have been improved for local drainage but are not designed to provide a specific level of flood protection). You can view maps of these easements at www.sonomacountywater.org.

Funding for the Stream Maintenance Program is provided by tax assessments from Flood Control Zones.

At right, sediment removal in Hinebaugh Creek that improves flood protection while maintaining the riparian canopy

Below, a completed sediment removal project that includes a sinuous low-flow channel and preserves existing trees



At right, Santa Rosa Creek in 1997 under historic flood control practices (Before) and in 2007 following selective vegetation thinning and pruning to establish a mature, upper-story riparian canopy (After)



Sediment Removal

SCWA works to remove excess sediment from engineered flood channels when streams are driest, usually from June 15 to October 15. The preferred approach is to use the most reasonable, time-efficient method with the least environmental impact that is not cost-prohibitive. The Agency is progressively pursuing opportunities to improve channel function and conduct maintenance activities that are self-sustaining and will require less maintenance in the future.

Stream Bank Stabilization

SCWA routinely repairs and stabilizes banks along its engineered channels. Eroding banks that are not repaired will continue to destabilize and deposit sediment into the waterways. Maintenance activities include minimizing hardscape by back-filling with soil, installing erosion-control fabric, seeding with grasses, and planting native trees to provide shade and additional stability.

Vegetation Management

The Agency's vegetation management practices involve restoring local streams into waterways that provide not only flood protection but also good water quality and habitat for wildlife. The goal is to establish a mature riparian canopy with alders, maples, and other native trees that grow tall and stretch their branches over the water. This is conducted in a phased approach by selectively thinning brush and multi-trunk tree species on stream banks and planting single-trunk, canopy-forming trees. A mature riparian canopy will reduce the level of routine maintenance required over the long term.

Vegetation management activities also include mowing; tree pruning; willow pruning and removal; blackberry, cattail, ludwigia, and exotics removal; and nursery-stock tree planting. These efforts are overseen by a biologist, a certified arborist, or other qualified personnel.

Other Maintenance Activities

- ▶ Access road maintenance
- ▶ Culvert repair and installation
- ▶ Trash and debris removal
- ▶ Fence maintenance
- ▶ Graffiti removal

At right, debris blocking a stream

