

Creek Care Guide

For San Leandro Creek Watershed



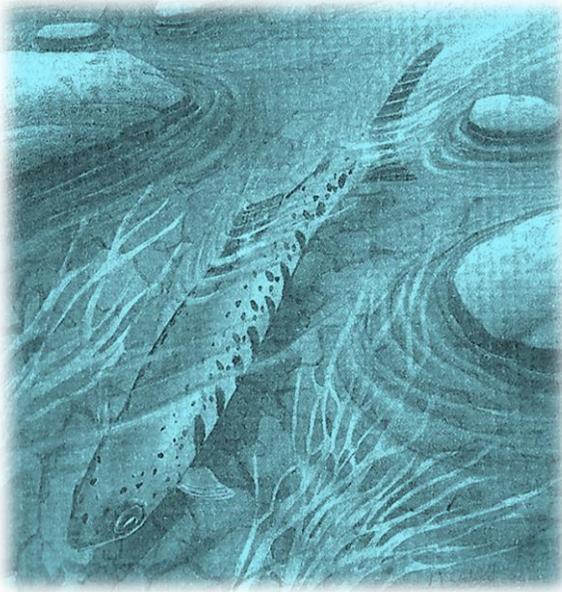
Published By

Friends of San Leandro Creek



Creek Care Guide

For San Leandro Creek Watershed



Acknowledgements

Creek care guide for the San Leandro Creek Watershed was adapted from several publications, including those produced by the Rivers, Trails and Conservation Assistance Program, National Park Service; Alameda County Flood Control, Alameda County Industries (ACI), StopWaste, and the City of San Leandro. We thank all these agencies and organizations for permission to excerpt from their guides and web pages.

Published By: The Friends of San Leandro Creek

Edited by:

Susan Levenson

Cover and (some) interior Illustrations by:

Halstead Hannah

Layout and Design by:

Susan Levenson

2017

Caring for the creek we share

A creek flowing through our city adds so much value; aesthetically, recreationally, as a wildlife corridor and habitat. It's a water supply, groundwater recharge and flood protection. It is a natural resource and riparian corridor (area around creek and rivers) that many birds, insects and mammals rely upon. While a healthy creek has many benefits, a degraded creek causes problems for all its neighbors, wild & otherwise. Even if your property is not located on the creek, runoff from your roof, street, driveway, lawn and other surfaces will reach the creek through the storm drain system. Everyone living, working or just enjoying the San Leandro Creek can play an important role in protecting it.

This guide was written to provide San Leandro residents and businesses with practical information on how to maintain our creek and watershed. This includes ideas for day to day activities which are creek-friendly. Please keep this pamphlet handy when planning landscaping, enhancement or stabilization along the creek. Even if you don't live *right* by the creek, you live in the San Leandro Creek *Watershed*! Chemicals, pesticides, soil amendments and even grass and yard cuttings are washed directly into storm drains that end up in the creek with no treatment in between.

Our Watershed History



Watersheds are divided from each other by natural features such as hills and mountain ridges. In the low land between these features there is always a creek or river which, wherever you are in the world, eventually runs to the ocean. The San Leandro Creek Watershed covers 48 square miles from the headwaters in Sibley Volcanic Regional Preserve by Canyon, California. It flows through the Oakland hills, to Upper San Leandro Reservoir, down through eastern Castro Valley to Lake Chabot, spilling from the Chabot Dam into the City of San Leandro. It meanders through San Leandro until it turns north and hits Highway 880, where it flows under the underpass at 98th Ave back into Oakland. It continues northwest under Hegenberger Road into the San Francisco Bay at Martin Luther King Park by the Oakland Airport. Everywhere between the neighboring watersheds, Sausal to the north and San Lorenzo to the south is the San Leandro Creek Watershed.

Before the 1870s, San Leandro Creek was home to 3 salmon species, abundant native fish, shellfish, plants and mammals. The local Ohlone people thrived along its banks for thousands of years utilizing the cool, clean water and the rich food sources it attracted. In 1855 the founder of the California Academy of Science, William Gibbons “discovered” the coastal rainbow trout while exploring San Leandro Creek’s upper stretches. He named the fish, *Oncorhynchus mykiss iridia*. A pure population of these rainbow trout still reside in Upper San Leandro Reservoir that have been land-locked since the construction of dams blocking their natural runs over 100 years ago.

Between 1874 and 1892 Anthony Chabot built the dam on San Leandro Creek forming Lake Chabot. EBMUD & EBRPD now use the lake as an emergency water source and recreational area. EBMUD chooses when and how much water is released into the creek below. The dams blocking the creek and changing natural water flows caused an end to the major salmon runs.

San Leandro Creek is an important waterway, as it is one of the few creeks in the entire Bay Area that runs uncovered by concrete (or *daylighted*) for its entirety. Even though our creek flows through some of the most busy, densely populated urban sections in California, we are lucky to have the vast majority of it remain more or less a “natural riparian corridor”. Only the last 2,500 feet of creek to the bay was confined to a rectangular concrete channel by the Army Corps of Engineers between 1972 and 1973.

Every stream varies depending upon where it is. In many parts of California a healthy creek may be an intermittent stream that does not flow year round, or *an arroyo*. San Leandro Creek is one such creek. It is a “tidal” creek, and when tides are high on the San Francisco Bay, waters flowed naturally up the creek. Between Bancroft Ave and Root Park at E 14th St. there is a natural aquafer and during dry periods, the creek runs underground often leaving this area dry. Above Bancroft Ave. to the dam, water normally flows, or remains in pools even through periods of drought. No matter the structure or stretch, our creek, especially below Lake Chabot Dam has been polluted with chemicals, garbage and debris.



How Healthy is Our Creek?

Many creeks in cities and towns have been altered, channelized, or piped underground. Others have become victims of excessive sedimentation, sewage, reduce water flows, and dumped debris. It is possible for urban creeks to survive, or be restored into a more natural state. Creeks are resilient. With care, and stewardship, the health of our creek can rebound.

Signs of a healthy creek:

Water Quality & Flow

- 💧 Cool, clear water free of contaminants and excess algae
- 💧 Varied flow cycles

Creek Beds and Banks

- 💧 Stable vegetated banks with minimal erosion
- 💧 Presence of both slow pools and fast running water over shallow, rocky stretches
- 💧 Abundant rock and clean gravel of various sizes (critical for fish spawning)

Plants and Wildlife

- 💧 Native riparian tree canopy, which stabilizes banks, provides habitat for birds and small animals, and keeps water temperature cool for fish populations
- 💧 Abundance of native riparian vegetation, providing cover for wildlife, and root systems which stabilize banks
- 💧 Thriving fish, amphibian and aquatic insect populations
- 💧 Leaves, small branches, fallen logs and other natural vegetative debris within the stream bed and along banks, which support the aquatic food chain and provide hiding places for fish and invertebrates



On the Other Hand...

Creek health is affected by activities beyond the streets adjoining it. Within our watershed, as natural surfaces were paved, less rainfall percolates into the ground and more water flows directly into the creek from streets and storm drains. As with most communities, there are no public storm drains in San Leandro to discharge into the sanitary sewer system, thus water receives no wastewater treatment. Almost always, this urban runoff carries debris and pollutants that are dangerous to creeks. While you have little or no control over the entire watershed, your diligence and cooperation with other neighbors can prevent and reduce activities which harm our creek.

Symptoms of an ailing creek:

Water quality and flow

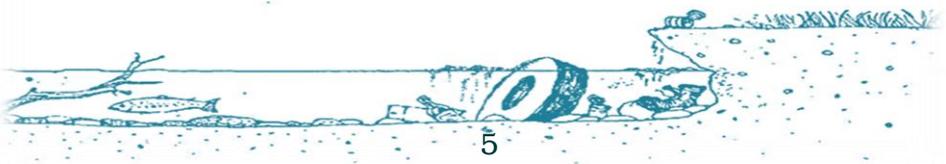
- 💧 Poor water quality, including problems such as excessive algae, suspended sediments, contamination from animal waste or sewage, or presence of metals or other toxics
- 💧 High water temperature
- 💧 Reduced water flow

Creek beds and banks

- 💧 Loss of natural creek channel
- 💧 Excessive erosion along creek banks or deeply incised stream beds and high rates of sedimentation impeding stream flow
- 💧 Still water, an absence of pools, riffles or clean gravel
- 💧 Litter, yard clippings, trash and other dumped debris

Plants and Wildlife

- 💧 Lack of diversity in flora and fauna
- 💧 Barren creek banks
- 💧 Invading non-native plants which compete with native species in the riparian corridor
- 💧 Diminished or non-existent fish, amphibian and aquatic insect populations



Household waste

Most homes and businesses in San Leandro have Alameda County Industries (ACI) as their trash collector. Hazardous waste can't be thrown out with the garbage, recycling or organics. Before tossing it out, check the label. If it's marked Danger, Warning, Poisonous, Toxic, or Flammable, it's hazardous and requires special handling.

ACI offers curbside collection of used motor oil and filters, and of household batteries. Please review the handling instructions below:

Household batteries should be placed inside a clear zipper-locked bag and placed on top of your blue cart on collection day. They'll collect alkaline and lithium batteries including A, AA, AAA, C, D, 6-volt, 9-volt, rechargeable, camera, watch, hearing aid, calculator and similar. **Please put a piece of tape over the positive terminal on all batteries before placing in a bag.** Household batteries may also be dropped off at the ACI office.

Motor oil: Used motor oil and oil filters are collected on your day of service. Set jugs and filters next to the carts, NOT INSIDE. Free jugs and oil filter bags may be requested from ACI or you may use your own 1-gallon, screw top container. Be sure the top can be securely closed. Limit of 2 jugs of oil per pickup. No other automotive liquids. Do not mix oil with other fluids. Oil filters must be contained in clear zipper-lock bags.

PUT HAZARDOUS WASTE IN THE RIGHT PLACE. Household hazardous waste (HHW), radioactive materials, poison or toxic materials are **not accepted in any Alameda County Industries collection carts or bins.** For more information call the Alameda County Household Hazardous Waste team at 1-800-606-6606.

OR

Many oil changing businesses will dispose of your hazardous fluids free of charge. Most Radio Shacks will accept cell phones and their batteries. Here are two locations in San Leandro, or check listings for a location close to your home or business.

Wheel Works (510) 357-7100

1050 Marina Blvd
San Leandro, CA 94577

Materials accepted: Brake fluid, Car Batteries, Marine Batteries, Motor Oil, and Oil Filters

Radio Shack (510) 352-5037

1353 Washington Ave
San Leandro, CA 94577

Materials accepted: Cell Phones & their batteries: Lithium-ion rechargeable Batteries, Nickel-cadmium rechargeable Batteries

OR

Alameda County's **FREE** drop-off facilities, located in:

Fremont 41149 Boyce Road, Fremont Wed–Fri: 8:30 a.m.–2:30 p.m.
Saturday: 8:00 a.m.–4:30 p.m.

Oakland: 2100 East 7th Street, Oakland Wed–Fri: 9 a.m.–2:30 p.m. Saturday:
9 a.m.–4:00 p.m. The Oakland Facility is operated by Alameda County
Household Hazardous Waste.

Livermore 5584 La Ribera St., Livermore Fridays 9a.m.–2:30 p.m. Saturdays
9a.m.–4:00 p.m.

The facility in Hayward is temporarily closed. Check the website for details.

<http://www.stopwaste.org/recycling/residents/household-hazardous-waste/drop-off>

This drop-off service is free for Alameda County residents.

What's OK to bring to a drop-off facility:

- 💧 **Paint:** Stain, Shellac, Solvents, Thinners, Additives, Oil Paint, Latex Paint
- 💧 **Auto:** Fuel, Waxes, Batteries, Additives, Motor Oil, Oil Filters, Antifreeze
- 💧 **Garden:** Sprays, Fertilizers, Ant Traps, Pesticides, Herbicides, Rat Poison, Gopher Bait.
- 💧 **Adhesives:** Putty, Caulk, Epoxy, Mortar, Stucco, Uncured Cement Powder, Wood Glue
- 💧 **Electronics:** Televisions, Computers, Telephones, Stereo Equipment, Microwaves, Thermostats, Ballasts for Fluorescent Lamps, Digital Clocks & MP3 Players, Digital Cameras, Cathode Ray Tubes
- 💧 **Miscellaneous:** Fluorescent Bulbs, Household Batteries, Needles & Other Sharps, Most Prescription Medicine & Drugs, Acids & Caustics, Bleach & Cleaners, Photo Chemicals, Pool Chemicals, Propane



Household Tips:

Know what's harmful to creeks and dispose of wastes properly. As a first step, learn what products become pollutants when they enter a storm drain or creek. If proper disposal of a particular product is inconvenient, consider using an alternative product.

- 💧 Never dump water from carpet cleaning into a creek or storm drain.
- 💧 Avoid hosing down paved surfaces or washing your car in the driveway of your home or street. Even “biodegradable” soaps are toxic to fish and wildlife. Wash cars on a lawn or unpaved surface or use a commercial carwash.
- 💧 Clean automotive spills using “dry” cleanup methods. Use cat litter or other absorbent materials to remove spills from paved surfaces. Depending on the substance spill, dispose of absorbent materials in the garbage can or at a hazardous waste collection site. If you must use water in a final cleanup step, direct flow to a lawn area – not the street, gutter or storm drain.
- 💧 Practice creek-safe swimming pool and spa maintenance techniques. Chlorine and copper algaecides used in pools and spas are toxic to aquatic organisms and other wildlife. Pool and spa water should never be drained to the street, gutter or storm drain. The best way to drain your pool is to let the chlorine dissipate by allowing the water to sit for up to two weeks and then drain onto landscaping. Do not use copper-based algaecides. Proper chlorination should take care of algae problems. If you use a pool service, discuss safe pool cleaning methods with them.
- 💧 Check your rain gutters and other pipes to see where they drain. Make sure they do not carry water directly into the creek.
- 💧 Control pet access to creek and riparian vegetation. Keep pets leashed in your yard, or fence pets out of the creek corridor. Pick up animal waste in your yard and when walking your pet, dispose of the waste in the garbage.
- 💧 Do not dump yard clippings down creek banks or storm drains.
- 💧 Remove old tires, garbage and litter from your property. Never store these materials in your yard. They may be carried away during storm events.

Local Business Tips:

Know what's harmful to creeks and dispose of wastes properly. Operate your business responsibly to eliminate discharges into storm drains. Never store waste materials in the street or near the creek.

- 💧 Never pour oil or grease down a storm drain or sanitary sewer. Grease and oil discharged into storm drains can enter the creek and decrease the oxygen content of the water, coat fish gills and smother bottom dwelling organisms. Food scraps can cause excessive nutrient loading into the creek, which uses up oxygen needed by fish and other organisms. Fats, oils, grease and food particles should be placed in sealed containers and recycled.
- 💧 Be a zero-discharger. When you reuse and recycle fluids and other products, they never become wastes. Purchase reusable or recyclable materials whenever you can. If your business routinely uses chemicals or cleaning compounds, consider "closed loop" processes that recycle these materials.
- 💧 Cover and maintain dumpsters. Open or leaking dumpsters are common causes of water pollution. Close dumpster lids, place dumpsters under roofs at the end of the workday and during rainy weather. Inspect dumpsters regularly for leaks, and repair or replace any dumpster that is not water-tight. Return dumpsters to trash haulers for cleaning. Do not hose them down or clean them on site.
- 💧 Label storm drain inlets so employees do not dispose of waste there.
- 💧 Use creek-friendly washing methods for vehicles and equipment. Do not wash cars, trucks or other equipment in a paved parking lot or street where soap and wash water can flow into the creek or storm drain. Install a "wash pad" on grass or dirt so soap is absorbed, or take vehicles to a commercial car wash.
- 💧 Keep pollutants off exposed surfaces. Place trash cans around your business site to minimize litter. Dispose of wastes appropriately in covered dumpsters or recycling receptacles.
- 💧 Control parking lot and site drainage. Strategic grading of parking lots and other outdoor spaces can prevent runoff from contacting potentially contaminated areas and reaching creeks and sensitive areas. Clean parking lots regularly using street sweepers and dry cleanup methods.
- 💧 Check rain gutters and other pipes where they drain. Make sure they do not carry water directly into the creek. Consider using cisterns, on-site filtration or gray water systems to capture roof runoff.
- 💧 Train employees and keep customers informed. If employees misunderstand how to handle waste, costly pollution incidents can occur. Make sure all your employees understand and implement appropriate practices. Educate your customers as well and prevent them from disposing of wastes improperly.
- 💧 Remove old tires, garbage and litter from your property. Never store these materials at your business. They may be carried away during storm events from the storm drain system.

To report hazardous materials issues, spills, and storm drain contamination:

City of San Leandro Environmental Services* Hours: Monday - Friday, 8:30 A.M. - 4:00 P.M.

Environmental Services is responsible for:

Hazardous Materials -- regulating the storage, use, and disposal of hazardous materials and hazardous wastes.

Pretreatment -- monitoring and regulating discharges to the City's sanitary sewer system.

Storm Water -- preventing pollutant discharges to the storm water system through site inspection and investigation of illegal discharges.

California Accidental Release Prevention (CalARP) Program -- regulating the handling of toxic and flammable materials.

The Alameda County Flood Control & Water Conservation District*

The Flood Control District provides flood protection for Alameda County residents and businesses. The District plans, designs, constructs, and maintains flood control projects such as natural creeks, channels, levees, pump stations, dams, and reservoirs.

The District's mission is to support the public safety, health, and welfare of the residents and businesses of Alameda County by developing and maintaining functional and appropriate flood control systems. The District also preserves the natural environment through public outreach and enforcement of pollution control regulations governing our waterways.

*Contact information in **Getting Help** Section

Creek-friendly Gardening and Landscaping Tips

Landscaping with Native Plants

Native plants offer an attractive landscaping alternative to traditional turf grass and ornamental plants. They are naturalized to the local growing conditions: climate, altitude, and precipitation. Native plants generally require less water once established, less fertilizer and other soil amendments, and are more resilient to insects and diseases than non-native plants. Native plants can be incorporated into an existing riparian area to add variety and interest. They can also be used to create a new riparian zone to reduce bank erosion, filter runoff, and improve overall creek viability.

Replace turf grass in the upland zone with low maintenance ground covers, open paths, or mulch to reduce irrigation water use and surface runoff. Where the neat trimmed look of grass is desired, native grasses or thyme lawns work well. Native grasses require less soil preparation when planting, require only occasional mowing, and are nearly maintenance free. When putting in new landscaping or sprucing up what you already have, check with City of San Leandro Zoning Code - *Article 19* Landscape Requirements *before* you begin work. They have good ideas and resources to help you.

- 💧 Limit your use of gardening chemicals. Avoid using chemicals entirely in wet weather. Pesticides, herbicides and fertilizers can run off to the storm drain and into the creek. Fertilizers add excess nutrients to natural waters that lead to algae bloom, bad odors and even fish kills.
- 💧 Consider using compost and organic soil amendments instead of chemical fertilizers. Pull weeds before they flower to reduce the need for herbicides. Introduce natural predators such as toads, spiders, garter snakes and ladybugs which reduce insect pests.
- 💧 Dispose of yard and lawn clippings properly. Never dispose of lawn clippings in the storm drain or creek. Soil and lawn clippings disposed of in creeks become unsightly, destroy aquatic habitats and may also worsen flooding problems. While they are biodegradable, organic wastes use the oxygen that fish, aquatic insects and native plants need for survival. Do not rake, sweep or blow leaves or lawn clippings into the street or storm drain. Add them to make a compost pile to make fertilizer for your property. Add them to your green waste bin, if you don't want to use them yourself.
- 💧 Landscape with native plant species. Native riparian vegetation is uniquely adapted to survive flood conditions. Native plants provide erosion protection during high flows and generally recover quickly when flood waters subside. Native species also require less water and fewer chemicals than most exotic plants. Consult a nursery, native plant organization, garden club or a good reference book to find out which plants are best suited to your garden and how to care for them.

Suggested Native plant species

We've listed some of the many native plants that grow within riparian corridors in our area. We recommend that you consult an expert for help in choosing the most suitable plants for your property and specific conditions.

Riparian – Lower terrace and water edge

Ground cover and vines:

Red columbine, crevice heuchera, common monkey flower, Red-flowering current, California wild rose.

Riparian – Mid-terrace to top of bank

Ground cover and vines:

Long-tailed ginger, Virgins bower, California strawberry, salal, trailing snowberry

Grasses:

Slender hairgrass, Idaho Fescue and Blue Bunchgrass, Common Spike Rush, Rough Sedge

Shrubs:

Coyote brush, smooth dogwood, toyon, red-flowering current, coffeeberry, California wild rose, snowberry

Trees:

Alder, buckeye, big leaf maple, box elder, California black walnut, sycamore, coast live oak, California bay, blue elderberry, willow.



Stabilizing Creek Banks

Creeks are constantly reshaping their channels through natural processes – scouring outside curves and depositing sediment inside bends in the waterway. A stream’s natural tendency to meander can be upset by human activities throughout the watershed. Increased volumes of stormwater runoff into creeks, removal of natural vegetation and upstream alteration of the creek channel may lead to erosion problems on banks that were once stable. Unstable banks can lead to extensive bank failure and add large volumes of sediment to the creek, resulting in property loss.

Creeks are complex systems. Stabilizing banks requires knowledge and expertise. Actions taken to protect your bank may have unforeseen consequences downstream. You may unintentionally pass your erosion problem on to your neighbor.

If you have a serious erosion problem, consult with a qualified professional in bank stabilization and repair. Check with your local representative from the California Department of Fish and Wildlife, the San Francisco Regional Water Control Board, and the US Army Corps of Engineers. In addition, the City of San Leandro and the Flood Control District will have local creek ordinances with which you must comply.

Local, state and federal permit processes help ensure that riparian habitats and creek flows are protected and that property owners do not inadvertently worsen the situation. Remember, these agencies are there to assist you! Organizations and agencies with more information are listed on the insert of this booklet.

Here are a few Bank Stabilization Techniques

Erosion control need not be costly. Consider low-tech, lower cost, creek friendly alternatives first. Be sure to seek professional advice before taking action.

- 💧 If the native riparian vegetation has been depleted or removed, but severe bank erosion has not yet occurred, you may be able to reestablish or augment the remaining vegetation on your own. Find out what types of native vegetation to use on your particular suite and how to plant and care for them.
- 💧 Modify steep banks to shallow or moderate slopes and revegetate with native riparian species (live cuttings of willow driven into the bank or bundles of live cuttings secured to the banks can be effective stabilization techniques).
- 💧 Create terraces and plant with native species.
- 💧 Retrofit existing bank stabilization with planting collars.

Bank stabilization with planting collar

