

# **Guidebook for the Arroyo Grande Creek Watershed:**

**What you can do  
to protect our creeks**



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*This Guidebook will describe how to improve your home and landscaping activities to protect the creek, and how to become a watershed steward.*

## ACKNOWLEDGEMENTS

The information in this Guidebook is intended for education and not to meet regulatory requirements. Portions of this Guidebook were modeled after the 'Guidebook for Living in the San Jacinto Watershed: A guide for residents of the San Jacinto Watershed and surrounding Communities' and on 'Basins of Relations: A citizen's guide to protecting and restoring our watersheds'.

Prepared by:  
Nicole Smith

Central Coast Salmon Enhancement



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SECTION 1:  
CARING FOR YOUR CREEK

Creeks are a source of beauty and recreation for residents and visitors as well as essential habitats for fish and wildlife.

Creeks also provide:

- Water supply
- Groundwater recharge
- Flood water conveyance



Arroyo Grande swinging bridge

Whether crossing the swinging bridge, picnicking in Kiwanis Park or visiting a creek-side residence, we are constantly interacting with our creeks. The majority of creek-side property is in private ownership, placing the responsibility for the health of the creek and the survival of creek-dependent fish and wildlife with you, the creek-side resident or business. Everyone can go for a walk along their creek looking for signs of health using the chart below.

What is a Healthy Creek?

**Healthy Creeks will have:**

- Stable vegetated banks
- Native trees and shrubs
- Woody debris
- Clear water and minimal erosion
- Cool water, deep pools and fast moving riffles
- Healthy wildlife populations

**Unhealthy Creek will have:**

- Bare, unvegetated banks,
- Invasive species
- Little or no canopy cover and algal mats
- Actively eroding banks
- Warm water, few pools and riffles with pools filled with sediment
- Yard waste or trash
- Concrete retaining walls

Your activities affect the land and water resources in your community whether or not you live right next to a creek. Acting as a watershed steward you can protect Arroyo Grande Creek and help your neighbors to do the same.

*Creek care is everyone's job.*

Problem: Lawns and thirsty landscapes

Solution: Reduce lawn size and plant native, drought tolerant species

More than 50% of residential water use is for landscape irrigation.

Reducing outdoor water demand increases the amount of water available to the creek and its functioning.



Reducing the size of your lawn is a good place to start. Lawns require high levels of water, fertilizers, pesticides, equipment fuel and your energy!

Instead of lawn, use native, drought tolerant plants that are well adapted to our dry Mediterranean climate, needing less water, fertilizers, and pesticides once established. When planning your landscaping also consider hydro-scaping (grouping plants with similar water needs), drip irrigation, mulching and water schedules appropriate for the season.

If you're still not sure, look into the City's Cash for Grass Program.

**Planting Guides**

*California Native Plant Society*

[www.cnps-slo.org](http://www.cnps-slo.org)

*City of San Luis Obispo*

[www.slocity.org/utilities/conservation-garden/plantsite/waterconserving-plants.asp](http://www.slocity.org/utilities/conservation-garden/plantsite/waterconserving-plants.asp)

Problem: Erosive stream banks

Solution: Protect or restore native trees and shrubs

Removing trees and shrubs from stream banks destabilizes the soil and can result in eroded banks and loss of property. High levels of sediment in streams can fill in the creek bed including pools affecting water temperatures and instream habitat for fish and aquatic insects.



Eroded streambank

Protecting or planting native trees and shrubs will reinforce the stream bank preventing undercutting and bank collapse. Riparian plants also help protect water quality by slowing runoff and filtering sediment, nutrients and other pollutants before entering the water.

#### Native Plants Versus Invasive Plants

Native plants provide important riparian functions like improved water quality and stream habitat that non-natives do not provide. However, many home landscapes are filled with non-native or invasive plants that compete aggressively with natives, often prospering while natives die off. The planting guides referenced on the previous page and the list below can help you choose native or non-aggressive non-natives for your landscaping.

#### Native plants:

Pink-flowering current	Wild Lilac
Coyote brush	Yarrow
California sagebrush	California poppy
Creek dogwood	Wild Grape
Black cottonwood	Fescue

## DON'T PLANT A PEST

The following plants are invasives that should not be planted for landscaping and instead should be removed when time and money allows.

English ivy or Algerian ivy (*Hedera helix* or *canariensis*)

Iceplant or Hottentot fig (*Carpobrotus edulis*)

Periwinkle (*Vinca major*)

Giant reed or giant cane (*Arundo donax*)

Pampasgrass (*Cortaderia jubata* or *selloana*)

Fountain grass (*Pennisetum setaceum*)

Bridal broom, French broom, Portuguese broom, Scotch broom or Spanish broom  
(*Retama monosperma*, *Genista monspessulana*, *Cytisus striatus*, *Cytisus scoparius* or *Spartium junceum*)

Cotoneaster (*Cotoneaster lacteus* or *pannosus*)

Blue gum eucalyptus (*Eucalyptus globulus*)

St. John's wort (*Hypericum perforatum*)

Problem: Pesticides and other harmful chemicals  
Solution: Choose safer alternatives

Excessive or incorrect use of toxic chemicals can lead to water pollution in our creeks that can pose serious threats to aquatic life. Some pesticides remain in the environment for a long time while others only become toxic when mixed with other compounds in the environment.

Reducing the use of toxic chemicals and choosing safe alternatives can greatly protect your family and watershed. Integrated pest management can also be useful in minimizing chemical use especially for agricultural operations.



Algae mat

Problem: Excessive and Polluted runoff  
Solution: Maintain water runoff onsite

Impervious surfaces cause water to runoff a developed site unlike natural vegetated sites that allow water absorption into the groundwater. Overwatering landscaping and washing driveways and cars can create dry weather runoff that eventually enters the creek. When it does rain, our roofs, driveways and patios block water infiltration and create stormwater runoff.

### Safe Alternatives

*Alternatives to Pesticides*

[www.pesticide.org/](http://www.pesticide.org/)

*County of San Luis Obispo*

[www.slocounty.ca.gov/agcomm/PestManagement/AlternativePestControl.htm](http://www.slocounty.ca.gov/agcomm/PestManagement/AlternativePestControl.htm)

To maintain water on your property during the dry season, follow irrigation schedules to minimize over irrigation, sweep driveways instead of spray washing and wash cars on unpaved areas. For the wet season, greatly reduce irrigation, allow house gutters to drain to vegetated areas instead of hard surfaces and use rain barrels or rain gardens to capture the runoff. Driveways and patios can also be made from pervious pavers or other alternatives that allow water to infiltrate into the ground.

Problem: Wasteful water use  
Solution: Water conservation

We often forget that we live in a dry region with limited water resources. The City of Arroyo Grande gets its drinking water supply from Lopez Reservoir and groundwater sources. However as development continues, water resources become more scarce.

Conserving the water we have can greatly increase the availability of local sources. Consider replacing high water use toilets, shower heads and washing machines with low flow alternatives; fixing leaking faucets and irrigation sprinklers; watering your yard in the early morning to minimize evaporation; retaining water on-site to filter into your yard instead of running off into storm drains; and installing graywater systems.

Look into the City's Water Conservation Incentive Programs.

### Water Conservation

*City of Arroyo Grande*

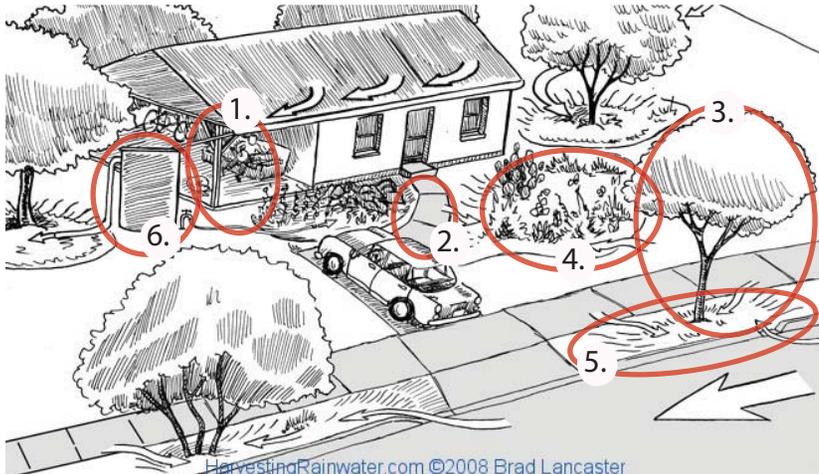
[www.arroyo-grande.org/water-conservation](http://www.arroyo-grande.org/water-conservation)

*City of San Luis Obispo Irrigation Schedule*

[www.ci.san-luis-obispo.ca.us/utilities/download/irrigationschedule.pdf](http://www.ci.san-luis-obispo.ca.us/utilities/download/irrigationschedule.pdf)

## LOW IMPACT DEVELOPMENT (LID)

LID for homeowners emphasizes holding rainwater on your property through rain gardens, rain barrels, swales and downspouts disconnected from paved surfaces.



A yard with low impact development retains rainfall as a resource.

LID incorporates:

1. Disconnected downspouts
2. Alternative paving materials
3. Interceptor trees
4. Rain gardens
5. Vegetated swales
6. Rain barrels/cisterns
7. Soil amendments
8. Other infiltration techniques

### Benefits of Low Impact Development:

Reduce your water bill

Capture water for passive & active irrigation

Flush accumulated salts from the soil

Add aesthetic interest to your yard

Protect your community's natural resources

Help your community by reducing off-site flooding

Problem: Waste disposal practices

Solution: Properly dispose of waste and hazardous materials

Lawn clippings, pet waste, paint and oil containers, electronic equipment, and other household waste should NEVER be dumped into storm drains, on stream banks or in the creek. Such waste will degrade water quality, in some cases to toxic levels. Proper disposal of waste and hazardous materials is easier than you think.

Cold Canyon Landfill takes organic waste such as lawn and yard clippings and hazardous waste such as like paint, solvents, oil, and electronic equipment.



Garbage dumped into Arroyo Grande Creek

1-800-Got Junk is another easy way to remove unwanted items from your house and yard. Someone will come out to your house to pick up items and you don't have to lift a finger!

### SPECIAL TIPS FOR BUSINESSES

All of the solutions to protecting creeks for residents also work for businesses, but here are a few additional tips.

Problem: Open or leaking dumpsters

Solution: Cover and maintain dumpsters

Leaking dumpsters can cause water pollution. Locate dumpsters away from creeks and storm drains, and cover dumpsters at the end of the day or in rain.

Regularly inspect and repair leaks in dumpsters that are not water tight. Don't hose dumpsters down or clean them on site as this also creates water pollution. Instead have the trash hauler clean them.

For a large pick up call  
Cold Canyon at  
(805) 549-8332.

Problem: Pouring of grease, oil or detergents in storm drains  
Solution: Dispose or recycle properly

When grease, oil, detergents and food scraps enter creeks from storm drains, they can decrease oxygen needed by fish.

Grease and oil can be recycled for use as biodiesel. Biodegradable detergents should be used, but even these are toxic to fish and wildlife.

### REPORTING A CREEK PROBLEM

#### HAZARDOUS MATERIAL SPILL -

For Emergencies call 911.  
Other calls can be referred to the City of Arroyo Grande Department of Fire and Building (805) 489-5490 or City Code Enforcement at (805) 473-5437.

#### ILLICIT DISCHARGE OF UNKNOWN ORIGIN -

City of Arroyo Grande (805) 473-5440 or Central Coast Regional Control Board at (805) 549-3147

#### A POACHER OR POLLUTER -

1-888-DFG-CALTIP (888-334-2258), 24 hours a day, seven days a week.

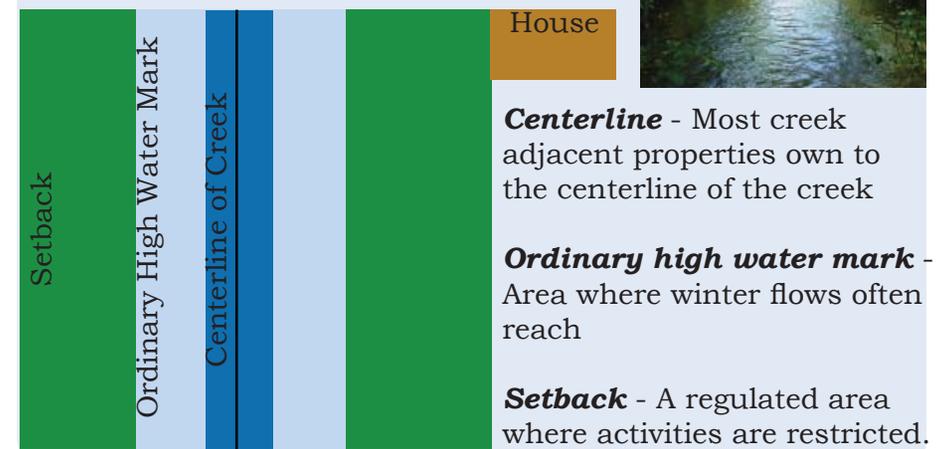
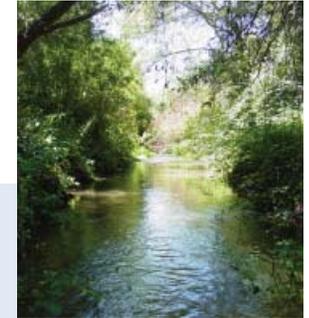
#### FALLEN TREE -

Call property owner if known.  
If it is a public safety problem, call the Arroyo Grande Police Department at (805) 473-5100.  
If on City property or in City Right of Way call the City Department of Recreation and Facilities Management at (805) 473-5480.

## SECTION 2: RESOURCES

Finding the right person to address your creek-related concerns can take a little time. We hope that the resources on the following pages help you to care for your creek.

Knowing some basic creek ownership terminology will help you to communicate effectively with regulators and community groups alike.



Permit and Technical Assistance - State Regulatory

#### California Department of Fish and Game - (559) 243-4005

[www.dfg.ca.gov/habcon/1600/](http://www.dfg.ca.gov/habcon/1600/)

Regulates work on stream banks, channels and diverted flows through the Lake and Streambed Alteration Permit.

#### Regional Water Quality Control Board - (805) 549-3147

[www.swrcb.ca.gov/rwqcb3/water\\_issues/programs/401wqcert / index.shtml](http://www.swrcb.ca.gov/rwqcb3/water_issues/programs/401wqcert/index.shtml)

Regulates work in stream channels through 401 Water Quality Certification.

Permit and Technical Assistance - Federal Regulatory

**U.S. Army Corps of Engineers - (415) 503-6795**

[www.spn.usace.army.mil/Permits/regulatory\\_corps\\_permit.html](http://www.spn.usace.army.mil/Permits/regulatory_corps_permit.html)  
Regulates the discharge of dredged, excavated, or fill material in wetlands, streams, rivers, and other U.S. waters through 404 Permits.

**National Oceanic and Atmospheric Administration (NOAA) Fisheries -**

Regulates endangered species like Steelhead trout through Endangered Species Act (ESA) permits.

Technical Assistance - Non Regulatory

**Coastal San Luis Resource Conservation District -**

[www.coastalrcd.org](http://www.coastalrcd.org)  
Provides technical assistance for agricultural land practices and creek restoration.

**The Land Conservancy of San Luis Obispo - [www.lcslo.org](http://www.lcslo.org)**

Provides technical assistance and oversight for land conservation and easements.

Other Community Groups

**Central Coast Salmon Enhancement -**

[www.centralcoastsalmon.com](http://www.centralcoastsalmon.com)  
Provides creek restoration opportunities and community environmental education.

**California Native Plant Society - [www.cnps-slo.org/](http://www.cnps-slo.org/)**

A non-profit organization of amateurs and professionals with a common interest in California's native plants. They have a great list of native plants and local nurseries.

**Arroyo Grande in Bloom - [www.arroyograndeinbloom.org](http://www.arroyograndeinbloom.org)**

Provides a variety of clean up, planting and other beautification efforts throughout the City of Arroyo Grande.

## CITY AND COUNTY REGULATIONS

When doing work adjacent to the creek, City or County codes and regulations apply depending on where you are. Before you build a new structure or do major vegetation maintenance, always contact the Community Development Department for details on codes and regulations.

### IN THE CITY

City creek setback requirements do not allow impermeable surfaces within a setback. Creek setbacks are measured from top of bank or edge of vegetation. City setbacks are:

Arroyo Grande and Tally Ho Creek:	Minimum of 35 ft
Meadow and East Fork Meadow Creek:	Minimum of 50 ft
All other creeks and drainages:	Minimum of 25 ft

Properties within the floodprone area have additional requirements.

The City also has regulations relating to the discharge of water to storm drains through their Stormwater Management Plan found at [www.arroyogrande.org](http://www.arroyogrande.org)

City of Arroyo Grande Community Development  
805-473-5420

City of Arroyo Grande Recreation and Facilities Management  
805-473-5480

### IN THE COUNTY

County creek setback requirements that must be followed:  
Coastal Zone: Minimum of 100 ft  
Inland Areas in the County do not have setback requirements.

Properties within the floodprone region have additional requirements.

The County also has regulations relating to the discharge of water to storm drains through their Stormwater Management Plan found at [www.slocounty.ca.gov/PW/Stormwater.htm](http://www.slocounty.ca.gov/PW/Stormwater.htm)

County of San Luis Obispo Planning Department  
805-781-5600

County of San Luis Obispo Public Works (Stormwater)  
805-781-5252

### CREEK-RELATED PERMITS

When living adjacent to a creek, all associated maintenance becomes the responsibility of the property owner. This includes removal of fallen trees and bank protection. Before undertaking any of these activities on the creek bank or in the creek, please ask yourself if the Department of Fish and Game (DFG) needs to be involved. Use the table below as guidance, and if there is a potential permit required, contact the DFG.

Department of Fish and Game, Fresno Office  
559-243-4014 x230

#### No Permit Required:

Trash/debris removal

Minor dead/downed limb removal

#### Potential Permit Required:

Tree/strump removal

Vegetation removal

Gravel removal

Alteration/armoring of banks

Culvert placement

## SECTION 3: EXPLORE OUR WATERSHED

Everyone lives in a watershed and everything we do from work to shopping to play occurs in a watershed. Watersheds can be small like our coastal watershed or large like the Mississippi River watershed.



Lopez Lake



Arroyo Grande Creek



Arroyo Grande Estuary

### Quick Facts

Arroyo Grande Creek Watershed:  
157 sq. mi.

City of Arroyo Grande:  
5.45 sq.mi

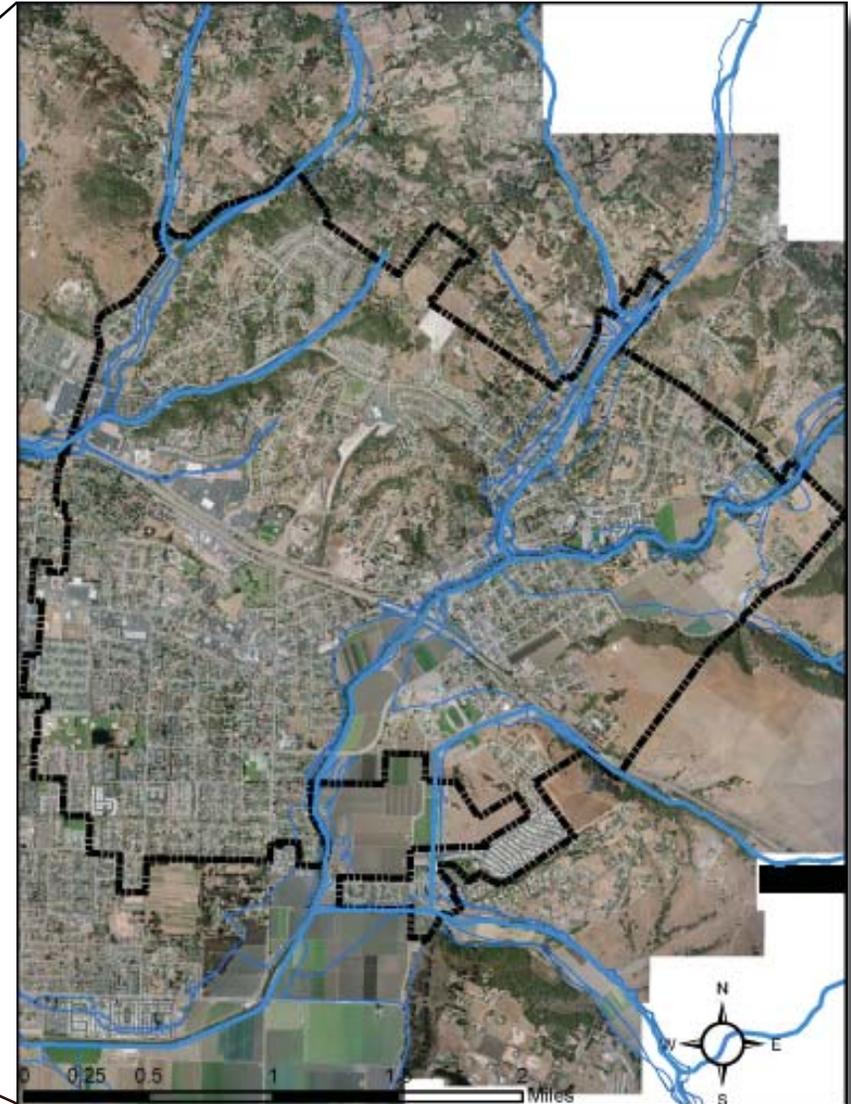
Three primary tributaries:  
Tally Ho (Corbett Canyon) Creek  
Tar Springs Creek  
Los Berros Creek.

Some of these creeks have year round water while others have intermittent flow.

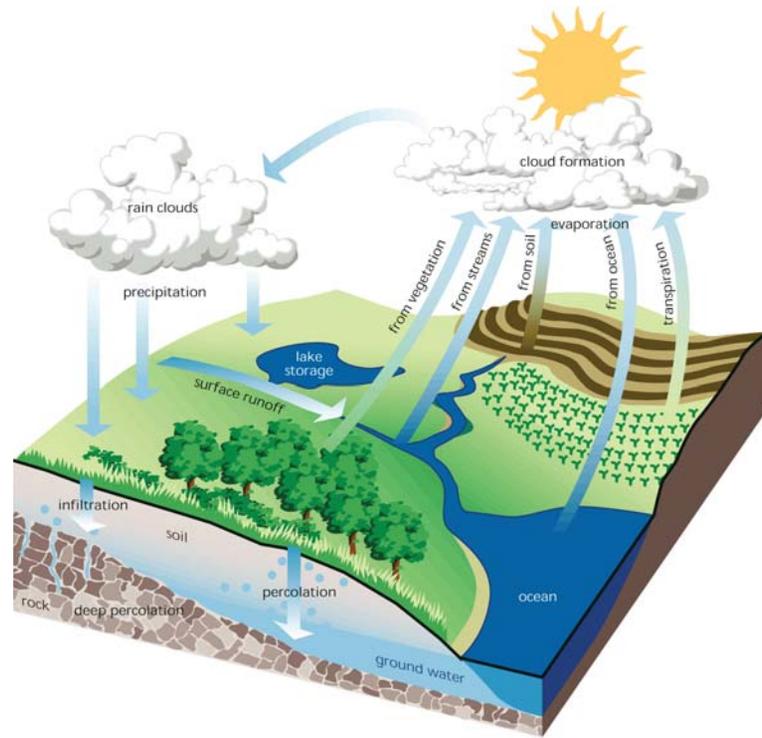
At the top of our watershed in the foothills of the Santa Lucia Mountains, seeps and springs join with rain water to form the headwaters of Arroyo Grande Creek and its tributaries. Water and sediment coming off the hills are captured by Lopez Dam, on Arroyo Grande Creek. Water is released from the dam between April and October for agricultural and fisheries uses. The creek then travels through areas of prime agriculture and urban development to the Pacific Ocean.

# THE ARROYO GRANDE CREEK WATERSHED

A watershed is a basin or drainage that funnels water from the surrounding hills to a creek or river and out to the ocean.



This map shows approximate floodprone area within the City of Arroyo Grande



## HEALTHY CREEKS MAKE HEALTHY COMMUNITIES

Cities and towns with creeks enjoy many benefits that strengthen the community. Protecting Lopez Lake, the creeks and the estuary in our watersheds can be likened to investing in health insurance, economic development and public services for the community.

### Health Insurance:

Recreation

Reduced stress & fatigue

### Economic Development:

Tourist amenity

Increased property values

### Public Services:

Water filtration

Erosion control

## THE RIPARIAN CORRIDOR

A healthy creek starts with a mature riparian corridor with sycamore, willow, baccharis, and other native trees and shrubs flanking the ever meandering creek.

### **Riparian corridors are important in:**

- Keeping water temperatures cool
- Stabilizing soil of stream banks
- Providing flood protection
- Filtering pollutants
- Providing food, shelter and movement corridors for wildlife



## STREAM FLOW

The stream flow, in terms of volume and duration, is also very important for a healthy creek. Our coastal creeks are variable in the amount of water that flows down them throughout the year and between years. Flows are also flashy meaning that they move quickly through the watershed. When water flows are high, creek water flows to the ocean and filters into groundwater along the way. When water flows are low, groundwater filters back into the creek bed maintaining base flows.

### **Stream flow is important in:**

- Protecting water quality
- Maintaining groundwater supplies
- Providing aquatic habitat for fish and insects

## STREAM FLOW (CONT'D)

Stream flow is just one part of a watershed's measurable in and out flows. A creek ecosystem can be thought of in terms of budget management with income, deposit, savings and expense.



### Basic Watershed Budget

#### Income:

Annual precipitation continually resupplies the account.

#### Deposits:

Precipitation is absorbed for groundwater supplies.

It is important to save these water deposits, avoiding overdrafting and dewatering.

#### Expenditures:

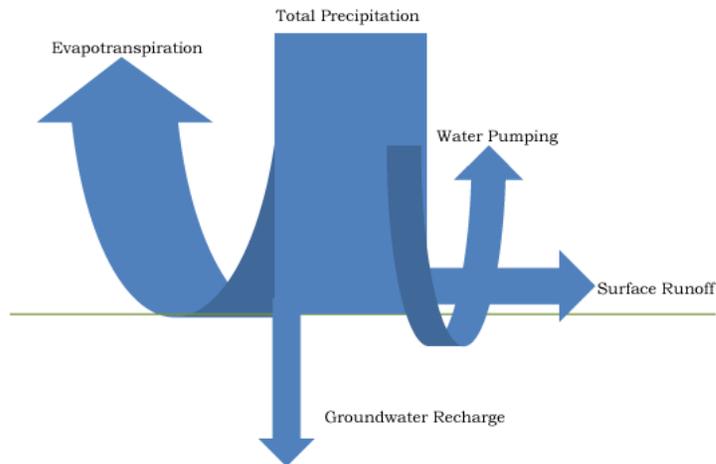
Impervious surfaces

Funnel water directly to creeks, bypassing the deposits necessary to balance our water budget.

Seeps

Evapotranspiration of plants

Water pumping

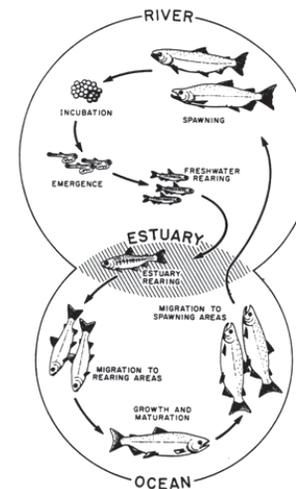


## THERE'S FISH IN THERE

Steelhead trout are identical to rainbow trout however steelhead trout migrate out to the ocean while rainbow trout remain in freshwater. Historically, Arroyo Grande Creek and its tributary Lopez Canyon Creek had significant steelhead runs with reports of 500 to 5,000 fish prior to the construction of Lopez Dam. In 1997, steelhead trout were listed as a threatened species in our region. With this designation, fishing for steelhead trout is not permitted in our creeks, punishable with hefty fines.



Steelhead trout



Steelhead trout begin their lives in the freshwater of Arroyo Grande Creek, spending up to three years swimming and hiding and feeding on insects. Juveniles can then migrate downstream to the estuary where they continue to grow and adapt to salt water. Juveniles called smolts then migrate out to sea spending one to three years off the Pacific coast. Adult steelhead migrate into coastal streams after winter rains from December to April to lay their eggs (spawn) in gravel nests called redds.

Source:  
USDA Forest Service

As a threatened species, it would be helpful to protect steelhead habitat whenever possible. These fish need cool, clear water, clean spawning gravels, deep pools and fast riffles. All of the creek stewardship solutions in this Guide protect these basic needs.

SECTION 4:  
CHANGES TO THE WATERSHED

According to the Environmental Protection Agency, the leading sources of stream degradation in California are unsustainable agriculture, non point sources of pollution, forestry activities, urban runoff, storm sewers and municipal point sources of pollution. Let's take a closer look at how our watershed has changed.



Aerial of creekside land use in the City shows encroachment on the floodplain and creek.

Throughout the watershed, our activities and the way we live changes the natural way water flows. We have increased impervious areas with roads, sidewalks, parking lots and roofs that do not allow water to filter into the soil and groundwater as it would in an undeveloped vegetated area.

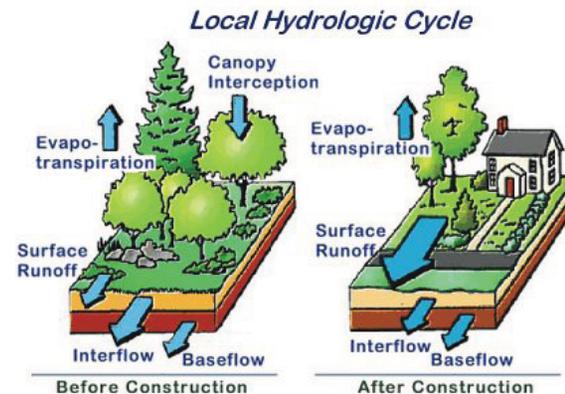
Human Activity:	Result/Change:
↓ Floodplain area	↑ Flooding
↑ Impervious surfaces	↓ Groundwater recharge
	↑ Erosion
	↑ Flooding
↑ Population (cars, land use, etc)	↑ Pollutant loading
↑ Landscaping	↑ Invasive plants

Water runs off these impervious surfaces to drains and pipes that quickly remove storm water.

**Altered flow volumes and timing/regimes results in:**

- Increased sedimentation
- Wider and straighter stream channels
- Degraded instream habitat
- Warmer water temperatures
- Decreased fish and aquatic insect diversity

In addition, pollutants from illicit discharges that collect on impervious surfaces like oil, gas, antifreeze, fertilizer, and soap degrade water quality and are sometimes toxic.



Source: Maryland Department of the Environment

Cities and Counties are now being mandated to regulate stormwater runoff in an effort to reduce our negative impacts on stream flows and aquatic habitat. One way of doing this is through Low Impact Development (LID).

For more information on LID visit the San Luis Obispo County Appropriate Technology at [www.slogreenbuild.org/cm/about\\_green\\_build/appropriate\\_technology.html](http://www.slogreenbuild.org/cm/about_green_build/appropriate_technology.html)

## GET INVOLVED

Volunteering in the community is a great way to reach beyond your own yard and activities to protect local creeks.

The Resource Section of this guide provides a good starting place for information on community groups that may have volunteer opportunities such as invasive plant removal, creek riparian planting and environmental education.

Annual volunteer opportunities include:

Creek Day - a county-wide event to clean trash out of creeks before the winter rains.

Coastal Cleanup Day - a county-wide event to clean trash off our beaches.

Organizations are always looking for help! If you find one that you want to support, give them a call. Most organizations are excited to put enthusiastic volunteers to work helping their community.



English ivy removal



Creek Day 2002

## GLOSSARY

Habitat – the food, water, shelter and space required for a plant or animal to survive

Ecosystem - a grouping of plants, animals, and other living things with non-living like soil and rocks that functions together. Streams are an ecosystem.

Erosion – the breakdown of soil and rocks by wind, water and other means.

Flow regime – a schedule or graph illustrating how much water is in the creek at different times of the year

Redd – steelhead trout nest made of fist sized cobble on a streambed

Sediment – soil that has eroded off the land and is deposited in streams

Spawn – steelhead trout reproduction



Made possible with funding from the  
City of Arroyo Grande