

## INTRODUCTION

San Luis Obispo's creeks are home to many species of sensitive wildlife, such as red-legged frogs, western pond turtles and steelhead trout. The long-term survival of these species in our area is threatened by human activities. Pollution of waterways, installation of barriers in creeks, and the development of wetlands, have all contributed to the decline of these aquatic organisms in recent years.

Steelhead trout are particularly vulnerable because of their complex lifecycle, which utilizes several types of creek habitat at various stages of development. Therefore, it is vital that the entire creek ecosystem is healthy if steelhead are to survive locally.



*San Luis Obispo Creek*

San Luis Obispo creek lies within the South-Central California Coast Ecologically Significant Unit (ESU) for southern steelhead trout (*Oncorhynchus mykiss*). An ESU is a population of fish reproductively isolated from other populations, and represents an important component in the evolutionary legacy of the species. The steelhead population of San Luis Obispo creek is very important to the survival of the species as a whole and has been listed as 'threatened' in our area.

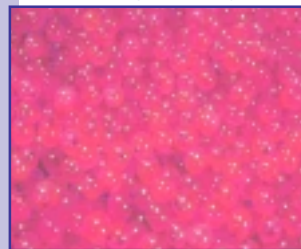
## STEELHEAD LIFE CYCLE

Steelhead trout are anadromous fish. They rear in freshwater streams and then migrate to the ocean where they spend from 1 to 5 years, and finally return to their home stream to spawn and complete the cycle. Each female steelhead produces over 2000 eggs, the exact number depending upon the size of the fish. The eggs are pink to reddish-orange in color, and are about the size of peas.



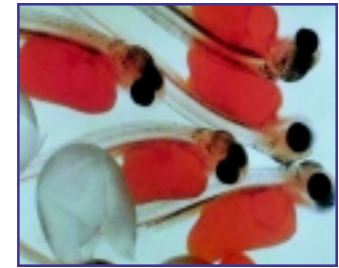
*Steelhead Trout Lifecycle*

When the female finds a good place to lay her eggs, she flips on her side and flaps her tail against the gravel, creating a pit 8 to 16 inches deep. The male hovers close-by defending the the nest (or redd) from competing males. When the pit is dug the mating pair position themselves side by side and she lays eggs into the pit, then he releases milt to fertilize the eggs.



*Trout Eggs*

Under the protective covering of gravel, the developing embryos are shielded from exposure to sunlight and predators. However, eggs are vulnerable to the damaging effects of siltation and scouring during high water flows. About 6 to 8 weeks after fertilization, the embryos hatch and become alevins, or sac fry. Over the next 3 to 4 weeks, the alevins remain within the gravel, living on nutrients contained in their yolk sac.



*Trout Alevins*

Once the yolk sac is fully absorbed, the inch-long fish emerge from the gravel. They are fully formed, free-swimming and begin feeding on tiny insects and plankton. When the fry are three inches long, they are called fingerlings, or parr. They have a camouflage pattern consisting of distinctive dark vertical stripes on their sides, called parr marks. Parr feed primarily on aquatic and flying insects.



*Parr*

When parr feel the instinctive urge to migrate downstream to the ocean, they become smolts. They go through many changes to prepare for the critical transition from fresh to saltwater. Extended residence in the estuary allows essential physiological adaptations to occur gradually, thereby increasing their chances of survival.

Resident rainbow trout are the non-migratory form of steelhead, remaining in freshwater for their entire lives. Because of the limited food supply in freshwater streams, resident rainbows grow slowly, and a 12-inch long fish may be 5 years old. Populations of resident rainbow trout tend to occur above impassable barriers such as debris jams and waterfalls, although in some areas the distribution of the resident and anadromous forms overlap.

Very little is known about the oceanic distribution of steelhead originating from rivers and streams in California. Smolts are thought to stay close to the continental shelf in shallower water. Their first year of life in the ocean is the most critical as the smolts are highly susceptible to predation by larger fish, seals, sea lions, and birds. Gradually, the fish venture further out to sea, growing rapidly as they feed voraciously on small fish, squid and crustaceans.

In the spring and summer of their return year, mature fish begin migrating back toward their home streams. Scientists speculate that homing is achieved through a combination of celestial navigation, orientation to the earth's magnetic fields, and a very highly developed sense of smell. In the winter months steelhead congregate at the mouth of creeks, waiting for the water level to raise and allow the fish to swim upstream. Unlike salmon, steelhead may return to the ocean after spawning and live to spawn again. Some steelhead spawn as many as 4 or 5 times, though twice is most common.

## LINKS

### Central Coast Salmon Enhancement Inc.

<http://www.centralcoastsalmon.com>

### Caltrout

<http://www.caltrout.org>

### Salmonid Restoration Federation

<http://www.northcoastweb.com/srf>

*Photo Credits: Michael Clarke, Paul Cleveland*

## THREATS TO STEELHEAD IN SAN LUIS OBISPO CREEK

Each year, many steelhead trout in SLO creek die due to the thoughtlessness of people who dump trash into the creek. Often young fish become entangled in the debris, unable to escape they die of exhaustion or starvation.

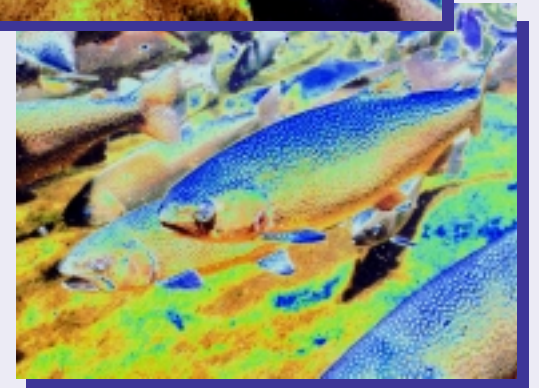
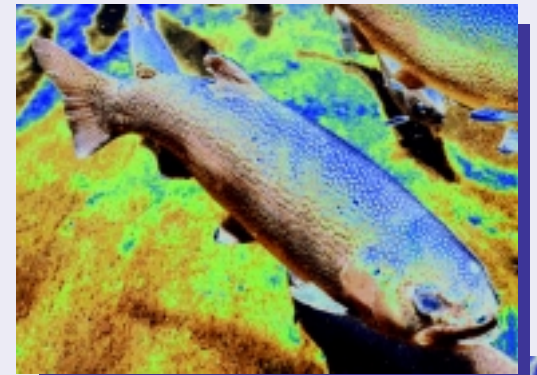
The photographs below show the problems that discarded trash can cause. The smolt on the left has a plastic seal from a bottle top wrapped around its middle. The fish swam into the circular piece of plastic when it was much smaller, as the fish grew the plastic gradually constricted its abdomen and would have eventually killed the fish.

The picture on the right shows three steelhead caught in a net that was abandoned in the creek. This type of monofilament netting is particularly deadly to fish, it catches in their gills and once trapped the fish have little chance of escape.

*Steelhead smolts  
trapped in trash  
deposited in San Luis  
Obispo Creek*



## STEELHEAD TROUT IN SAN LUIS OBISPO CREEK



### NATURAL RESOURCES PROGRAM

CITY OF SAN LUIS OBISPO  
990 PALM STREET  
SAN LUIS OBISPO, CA 93401

805.781.7511  
805.781.7211



[www.slocity.org/naturalresources](http://www.slocity.org/naturalresources)

***Please DO NOT dump trash in the creek***