

319(h) Success Story  
Central Coast Region  
2010

## I. TITLE

Riparian Fencing Reduces Bacterial Levels and Improves Habitat in Tributary to National Estuary

## II. WATERBODY IMPROVED

Bacteria in San Luisito Creek, a perennial stream on the Central California coast, made the creek unsafe for swimming and water contact recreation. The main source appeared to be cattle that had unrestricted, year-round access to the creek. By providing an off-stream water source and fencing cattle out of about four miles of the creek, local ranchers were able to reduce bacteria in the creek, and improve riparian habitat.

## III. PROBLEM

San Luisito Creek watershed encompasses approximately 8 square miles and is a tributary to Chorro Creek, which feeds directly into Morro Bay National Estuary. Morro Bay National Estuary is located on the Central California coast and is an important recreation area, bird sanctuary and nursery area for many species of fish. Although relatively pristine compared to many California waterbodies, Morro Bay estuary is still considered impaired by bacteria, nutrients and sediment, and has an active program to improve the health of the estuary, including a robust citizen monitoring program. Data analysis showed that the monitoring site on San Luisito Creek exceeded the bacteria limit in 84% of samples taken between 2003 and 2008, more than any other monitoring site. The Central Coast Water Board placed San Luisito Creek on the Clean Water Act Section 303(d) list for fecal coliform bacteria in 2006.

The San Luisito watershed is predominantly beef cattle rangeland, with a small amount of acreage in row crops and dry farming. At the bottom of the watershed is a cluster of private residences. Upstream monitoring showed that the middle reach of the stream had the highest levels of bacteria and was most impacted by cattle grazing activities.

## IV. PROJECT HIGHLIGHTS

The Morro Bay National Estuary Program (MBNEP) contacted several property owners along the creek about the problem of bacteria in the creek. The goal of the project was to reduce creek bacterial concentrations through exclusion of cattle. Exclusion of cattle from creeks has been shown to prevent erosion of

creek banks, reduce bacterial levels in streams, and improve habitat, but it remains controversial and expensive. Two landowners agreed to exclude cattle from access to the creek. With help from the MBNEP and other partners, the landowners installed off-stream water sources and fencing that allowed cattle to be excluded from nearly four miles of creek, except for a few times of the year when cattle are allowed into the riparian area for weed control. The agreement by two major landowners to exclude cattle from their segments of the creek represented several months of negotiations and planning by the landowners and the staff at the MBNEP and Coastal San Luis Resource Conservation District. Discussions began in 2006 and installation took place in 2009. Providing water to cattle involved drilling new wells, installing tanks and creating a network of troughs throughout the ranches. The project also included installation of solar panels to power the pumps used to move water to the tanks and troughs.

Water quality samples were taken monthly or bimonthly at several sites on San Luisito Creek. Statistical analysis of monitoring data after less than two years has already shown a significant decline in bacterial levels in the areas where cattle have been excluded, as well as an increase in riparian vegetation. In 2008, before project installation, 90% of samples taken at the downstream monitoring site exceeded the bacterial standard for safe contact; in 2009 67% of samples exceeded the standard, and in 2010, only 33% of samples taken to date (September 2010) exceeded the standard.

This project is part of the larger effort to implement the Morro Bay National Estuary Program's comprehensive watershed management plan, to protect the many uses of the estuary and slow erosion that is filling in important habitat.

## V. RESULTS

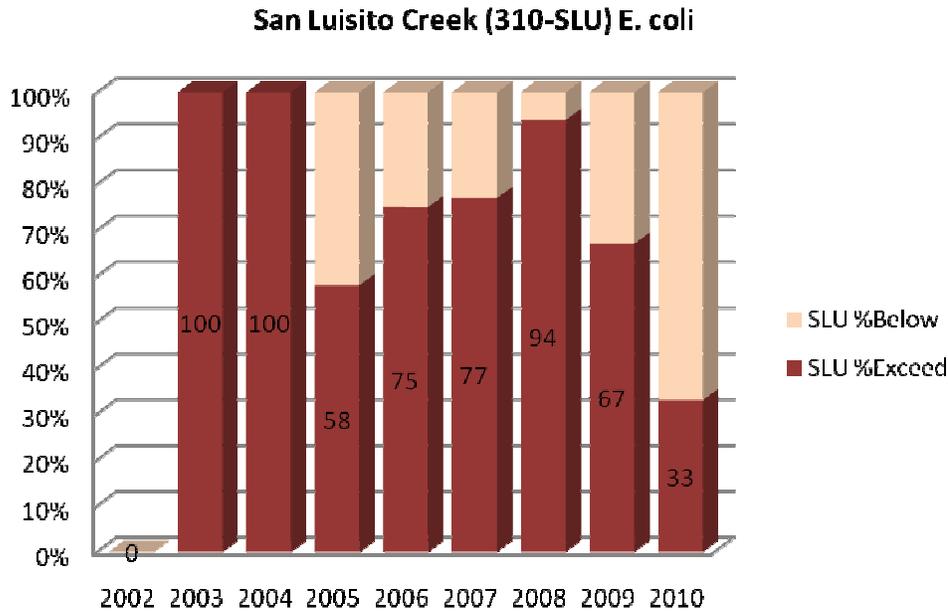
On-going monitoring has shown a significant reduction in bacterial levels in the area of exclusion along San Luisito Creek. In addition, vegetation is increasing along the creek banks. While data analysis shows evidence of improvement thus far, more monitoring is needed for confirmation and eventual de-listing. Bacterial monitoring is continuing twice monthly, and will be evaluated periodically. The entire Morro Bay watershed will be evaluated as part of the Central Coast Water Board's Measure W analysis in 2011.

## VI. PARTNERS AND FUNDING

The Morro Bay National Estuary Program partnered with the Coastal San Luis Resource Conservation District (CSLRCD) to design and fund the project. Funds came through the Central Coast Water Board, from a California Department of Corrections supplemental environmental project settlement agreement, from a CSLRCD 319(h) grant through the State Water Resources Control Board, from the Morro Bay National Estuary Program, and from private landowner contributions.

## Graphs and Pictures

The graph below shows the percentage of samples each year that exceeded the standard for *E. coli* bacteria:



The pictures below show San Luisito Creek in the vicinity of the fencing project, pre- and post-project.



San Luisito Creek, Oct 2008, Pre-project



San Luisito Creek, July 2010, Post-project

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