



United States Department of Agriculture

## Conservation Effects Assessment Project (CEAP)

### Watershed Fact Sheet

## Stemple Creek Watershed, California: 2004-2006

An NRCS\* Special Emphasis Watershed, one of 24 CEAP watershed projects.



## CEAP Assessment

Evaluate water quality and wildlife benefits of dairy waste management systems, riparian restoration, and soil erosion control.

### Watershed Description

- Sub-watershed, Bodega Bay (Marin and Sonoma Counties).
- Included in the Gulf of the Farallones National Marine Sanctuary
- 32,980 acres
- 90% grazingland, 20 medium-sized dairies, limited cropland

- California has designated Stemple Creek as an impaired water body for: dissolved oxygen, temperature, pH, ammonia, and sediment.
- Endangered species: California freshwater shrimp

**Issues:** Loss of riparian vegetation on 70% of waterways, nutrients in runoff from dairy manure, sediment loads to the estuary, Estero de San Antonio.

\*Natural Resources Conservation Service



Upper Reaches of Stemple Creek, stream gradient 0.034; result of fault truncated watershed. Pre ditch condition - marsh.



In the Middle Reaches, Main Stem of Stemple Creek a back hoe pit was dug to characterize the floodplain soil and attempt to find the break between modern sediments and geologic sediments.

## Approach

**Water Sampling:** Dissolved oxygen, temperature, pH, ammonia, and sediment

**Watershed Models:** AnnAGNPS (Annualized Agricultural Non-Point Source), REMM (Riparian Ecosystem Management Model) and CONCEPTS (CONservational Channel Evolution and Pollutant Transport System).

**Photo Monitoring:** Use periodic photography  
1) to qualitatively measure habitat improvement and  
2) for rapid stream assessments.

## Communicating Results

1) Three annual progress reports; 2) technical papers: evaluation of existing data, channel erosion as a component of a watershed sediment budget, nutrient sources, and the effects of best management practices on sediment and nutrients; and 3) final project report.

## Collaborators

- Marin and Sonoma County Resource Conservation Districts
- North Coast Regional Water Quality Control Board
- USDA Agricultural Research Service
- University of California Davis
- California Department of Fish and Game
- U.S. Environmental Protection Agency
- Sonoma County Farm Bureau

## Contacts

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