

**Sonoma Creek Watershed
Project Description
for Team Arundo del Norte
Arundo Eradication and Coordination Program**

History and Background

Past Efforts and Funding: In 1997 the Sonoma Ecology Center (SEC), as a partner of the Sonoma Creek Watershed Conservancy, applied for funds to plan giant reed (*Arundo donax*) eradication in Sonoma Valley. The Valley had an *Arundo* infestation, which, though not yet major, was increasing in size each year. In 1998, the SEC received a small grant from the Department of Water Resources to begin eradication work for one year. In 2001, the project received funding from CALFED through the *Arundo* Eradication and Coordination Program (AECF), administered by the Sonoma Ecology Center, to continue its eradication efforts through March 2004. The project is continuing as a partner in Phase II of the program now funded by CBDA, and has received additional funds to continue monitoring existing sites and expand eradication efforts to new sites for three years.

Cooperating Groups: The Sonoma Ecology Center is the lead agency for the project. Others collaborating in this work include: the Sonoma County Water Agency (supplying herbicide and a chipper, and handling required reporting); Resource Conservation District (identifying infestation sites and contacting specific landowners); California Conservation Corps (supplying work crews); Sonoma State University (interns assisting with surveying, monitoring, and eradication); and local volunteers (assisting with *Arundo* removal).

Summary of Plan

Location and Rationale: The objective of this project is to eradicate *Arundo donax* from several sites along the mainstem of Sonoma Creek from Sugarloaf Ridge State Park downstream to the Highway 121 crossing. Priority sites for eradication are those in riparian areas, where *Arundo* spreads the quickest. The project begins on the uppermost reaches of Sonoma Creek and proceeds southward to the city of Sonoma (Phase II), and then continues southward to San Pablo Bay (Phase III). The total project infestation area is estimated at 39,000 square feet.

Land-Use Types: The infestation area includes riparian woodland within a number of small, unincorporated towns including; Glen Ellen, Agua Caliente, Boyes Hot Springs, Fetters Hot Springs and the larger town of Sonoma. Land use in the Phase II upper watershed area is predominantly rural residential, with some agricultural and public parkland. Land use in the Phase III lower watershed area consists primarily of agricultural use with some rural residential sites.

Characteristics of Area: The target area contains riparian woodland vegetation, which, in most areas, has been reduced to a narrow band confined to the steep bank of the well-incised Sonoma Creek. Within Sonoma Creek and its tributaries are populations of Chinook salmon, and two endangered species, the California freshwater shrimp and steelhead trout. This highly valuable

fish and wildlife habitat supports a wide variety of migratory songbirds, raptors, and small mammals. However, the movement of *Arundo* into these areas has begun to degrade habitat necessary for wildlife.

Project Goals and Schedule

Specific project goals include:

- Eradicating target infestations at the top of the watershed and then work downstream.
- Working with landowners to encourage participation, and offer different removal and revegetation options.
- Educating the community about invasive species to prevent new infestations and to increase residential participation.
- Monitoring the effectiveness of eradication efforts and continuing treatment as needed for up to five years.
- Providing erosion control, revegetation with appropriate native plants, and removal of other invasive weeds where necessary.

The project has four phases.

- **Phase I** includes: working with landowners to educate them about the environmental damage *Arundo* can cause and the ways of preventing its further spread; securing written permission to access private property within riparian areas; securing necessary permits from the appropriate agencies for the eradication work; and locating, mapping, and prioritizing the *Arundo* infestations.
- **Phase II** focuses on eradication, re-vegetation, and monitoring the upper, less-infested parts of the watershed.
- **Phase III** extends eradication efforts to the more heavily infested areas of *Arundo* in the lower watershed.
- **Phase IV** provides long-term monitoring, including low-intensity re-treatment of *Arundo* sites.

Eradication and Restoration Methods

The project is following the Surveying and Monitoring Protocols provided in the Weed Information Management System (WIMS) developed by the Nature Conservancy (TNC) and upgraded in partnership between TNC, SEC, and the UC Davis Information Center for the Environment (ICE).

Eradication is being conducted from August through October using foliar and cut-stump herbicide applications, a prep-and-spray method, and using hand tools and an aquatically-approved herbicide (glyphosate). (See Eradication Methods form for more detail.) *Arundo* eradication will not take place during bird nesting season or during winter months, in order to avoid impacts to sensitive bird and fish species.

All cut or treated material is either left standing, chipped, or mulched on site. Chipped material is used to mulch new native plantings. Material left standing may be cut after it is dead to reduce fire hazard and improve the aesthetics of the site. When feasible, revegetation will be done in areas where erosion is a potential problem, where passive revegetation of native plants is unlikely to occur, or to suppress growth of secondary weeds.

There are two goals for the project's revegetation work. One is to restore the form and function of healthy riparian habitat by reestablishing native vegetation at sites where natural, passive revegetation is not feasible. The other is to replace any positive form or function that Arundo may have been serving, such as controlling erosion or providing a privacy screen.