

**San Joaquin River Watershed  
Project Description**  
for the Team Arundo Del Norte  
Arundo Eradication and Coordination Project

**History and Background**

**Past Efforts and Funding:**

The San Joaquin River Parkway and Conservation Trust (River Parkway Trust), a 501(c)(3) nonprofit organization, was founded in 1988 *to preserve and restore San Joaquin River lands of ecological, scenic or historic significance; to educate the public on the need for stewardship; to research issues affecting the river; and to promote educational, recreational and agricultural uses of the river bottom consistent with protection of the river resources.* The River Parkway Trust completed its first significant habitat restoration project in 1998, restoring 31 acres of riparian woodland at Kiwanis Camp Pashayan, 10 acres on the Willow Unit of the San Joaquin River Ecological Reserve and 15 acres adjacent to Riverside Golf Course. In the course of implementing those projects and other operations of the River Parkway Trust, the impact of invasive exotic weeds along the San Joaquin River became obvious.

In 2000, the River Parkway Trust began the first major effort to control invasive weeds along the Parkway reach of the San Joaquin River (Friant Dam to Highway 99). The three-year project was funded by the Wildlife Conservation Board, with matching funds provided by the US Bureau of Reclamation (Bureau) and PG&E. The project targeted three weed species—*Sesbania*, *Arundo*, and *Tamarix*.

In 2003, under contract to the Bureau, the River Parkway Trust produced the *Invasive Weed Control and Prioritization Plan for the San Joaquin River* to guide weed management and revegetation efforts along the San Joaquin River. The project entailed analysis of existing vegetation and weed maps of the San Joaquin River to develop a priority list and removal calendar. During the course of these projects, the River Parkway Trust has removed stands of *Arundo donax* from several locations along the San Joaquin River Parkway, engaging the help of volunteers, local school groups, church groups and service organizations.

**Cooperating Groups:** The San Joaquin River Parkway and Conservation Trust will work as a subcontractor for the Sonoma Ecology Center and will serve as the lead coordinator for this project in the Fresno/Madera region of the San Joaquin River watershed. California Conservation Corps members, students from local high schools, community colleges, and Universities, and other community volunteers will assist with project implementation.

The Trust works closely with all of the public agencies involved in San Joaquin River issues, including the California Department of Fish and Game, California Department of Water Resources, San Joaquin River Conservancy, California State Lands Commission, California State Parks, US Bureau of Reclamation, City of Fresno, County of Fresno, and County of Madera. All of the agencies will be informed about the project and may contribute staff expertise on some portion of the project, as well as property access when necessary.

### **Summary of Plan**

**Location and Rationale:** Our project objective is to eradicate *Arundo donax* from targeted areas along the thirty-three mile San Joaquin River Parkway that extends from Friant Dam to Highway 145. Priority sites for eradication will include riparian areas with a high concentration of Arundo. According to the *Invasive Weed Control and Prioritization Plan for the San Joaquin River* described in the first section, the total project infestation area comprises of approximately 60 patches of Arundo of varying sizes.

**Land-Use and Types:** The infestations occur on riparian woodlands and open space areas along the San Joaquin River in Fresno and Madera Counties that fall under various ownerships, including the State of California, the County of Fresno, the Fresno County Office of Education, and private individuals. Many of these areas have been mined for sand and gravel in the past. The land use classifications along this twenty-two mile section of the San Joaquin River include agricultural, rural residential, public parkland, golf course, sand and gravel mining operations, and state-owned lands in the form of Department of Fish and Game Ecological Reserves or San Joaquin River Conservancy-owned conservation lands.

**Characteristics of Area:** This section of the San Joaquin River provides habitat for Great Egrets, Great Blue Herons, Mule Deer, Coyote, Wood Ducks, Elderberry and Valley Oaks, among other plants and animals native and non-native to the region. The infestation of Arundo has compromised the ecological health of this ecosystem.

**Sensitive Species:** The most commonly-encountered special-status species along the San Joaquin River is the Mexican Elderberry, protected as habitat for the Valley Elderberry Longhorn Beetle (VELB). Impacts to Elderberries will be avoided as described below. Other special status species that may be encountered are nesting raptors. We do not anticipate any impacts to nesting raptors from the implementation of this project, since eradication will not be scheduled for nesting season.

Trust staff, volunteers, and a licensed herbicide applicator will be working on the Arundo eradication project. Trust Project Manager Sharon Weaver is familiar with USFWS regulations regarding avoidance and incidental take of VELB, and will brief all other staff, volunteers, and contractors working on the project on the appropriate avoidance measures (for example, no soil disturbance within 100' of plant dripline, no herbicide or pesticide use within 100' of dripline).[RLU1]

## **Project Goals and Schedule**

Specific project goals include:

- ⊖ Eradicating target infestations of *Arundo donax* along the San Joaquin River between Friant Dam and Highway 145.
- ⊖ Monitoring the effectiveness of eradication efforts and continuing treatment as needed for up to five years (depending on available funding)
- ⊖ Educating the community about invasive species and new methods of Arundo control
- ⊖ Providing improved ecosystem functions and reduction of roughness in river channel through the removal of Arundo and revegetation with appropriate native species

Project Implementation:

**Year One:** Collect site information using WIMS / identify the target areas of Infestation; implement hand removal of smaller infestations using volunteers and herbicide treatment in Fall, 2006; secure written permission to access private property within riparian areas; secure necessary permits from the appropriate agencies for the eradication work.

**Year Two:** Continue to remove Arundo and begin monitoring the treated areas; begin working with landowners of more heavily infested areas down-river from this project's geographic scope.

**Year Three:** Complete Arundo removal and continue monitoring for successful Arundo eradication.

**Years Four-Five:** Continue monitoring treated areas and continue any revegetation efforts in progress.

## **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 methods will include foliar spraying of an aquatically-approved herbicide, cut-stump treatments using hand tools, and cut-only treatments in areas where the existence of sensitive species prevents the use of herbicide or soil disturbance. Arundo that has been killed by foliar spray will be left in place to decompose. If material left in place poses a fire hazard, it will be cut and chipped for mulch. Cut Arundo stalks will be dried on tarps and then either chipped for mulch or disposed with other green waste.

Eradication will be conducted with herbicides from August through November; other eradication may take place in late spring and early summer. Eradication will not take place during nesting season in order to avoid impacts to sensitive bird species.

The three goals of the project's revegetation work are: 1) to prevent reinfestation of Arundo removal areas by other invasive weeds, 2) to improve community structure by planting additional sub-canopy vegetation, and 3) to provide erosion control. Active revegetation will be limited to sites where reinfestation by another invasive is very likely, and sites where other restoration projects are already underway.