

**ABSTRACT FOR CA WEED SCIENCE SOCIETY PRESENTATION
AQUATIC SPECIES SESSION:
MULTI-YEAR CONTROL OF ARUNDO DONAX IN SANTA CLARA COUNTY WATERSHEDS**

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The Santa Clara Valley Water District has implemented a multi-year program to control *Arundo donax* in Santa Clara county streams. The goal of the project is to control 125 acres of the target species over a ten year period. The program is currently in Year 3 with an accomplishment to date of 33.5 acres removed from various creeks, mostly in the southern part of the county. The removal efforts are being done under contract by Clean Lakes, Inc. The focus of the presentation is methods tried, lessons learned, and process improvement.

Arundo is a large perennial grass that propagates vegetatively by rhizomes. There is no evidence of propagation from seed in CA. The plant is native to Southeast Asia and was introduced in the early 1800's as a building material. *Arundo* has been used as a windbreak, for erosion control, and as an ornamental. More recently it was commercially used for reeds in woodwind instruments. It has been considered for pulp production and as fuel for biomass generators.

Arundo is found throughout Santa Clara County Creeks though the largest infestations are in four watersheds. The program's goal is to remove 125 acres of from county watersheds over a ten year period as part of the District's stream maintenance program. The primary focus is riparian restoration in the infested areas.

The program to date has had a number of challenges. Most infestations are located in hard to access areas that require very labor intensive control methods. Most of the locations are in very environmentally sensitive areas that have high levels of regulation. Endangered Species Issues, Water Quality, Pesticide Use, and Archeological sites are some of the potential issues that add to project complexity. Biological surveys and training are required due to multiple endangered species that inhabit project areas.

The valley floor is entirely built out and people are not sensitive to issues in the creeks. The project sites have hundreds of owners with their own agendas. Often other projects have other goals that conflict with these project goals. Project is highly political. The work window, with all regulations in place, is approximately 14 weeks. Any work outside this period requires additional regulatory clearance. The compressed work window adds a huge amount of complexity and cost to the project.

Effective control of the plant requires herbicide use. The Bay Area is very environmentally conscious and there are many critics of pesticide use. The project is an ongoing educational challenge. Access is one of the most critical challenges. Many places do not have room for any equipment. All work must be done by hand. Biomass has to be hauled long distances. Most times the project is accessed through someone's back yard.

Disposal is always an issue because of the huge amounts of biomass. We have tried various disposal methods including burning, chipping or grinding on site, and hauling to landfills.

Project cost varies depending on the site and your project parameters. Labor is a huge element of the project so the more expensive the labor, the higher the cost. The access and regulatory issues add a lot of cost to the project.

The project requires specialized technology. GPS mapping technology allows for both initial assessment and long term monitoring of each site. NPDES permit requires water quality monitoring and reporting for in-stream pesticide application. We have a consultant perform these tasks. Close coordination is required for all project elements.

UVAS SITE (Year 1)

This project site had large single owner parcels and much of the infestation away from the channel. There was significant space to stockpile biomass. Mechanical mowing or mulching was limited due to large amounts of debris mixed in with the Arundo.

Los Gatos Creek

The project area was highly urban with no access. A trail system located along one side meant a high level of public use and project visibility. Most clumps were very small but there were numerous clumps. The stream is a steelhead creek that required a softer touch. Numerous homeless issues.

UVAS CREEK (Year 2)

Access required coordination with multiple property owners. "Ag folks" took more convincing to allow into properties. The contractor skipped a large section in center of project because the calendar forced us to pull out of the creek. Heavy autumn rains and farming operations made disposal a problem.

LLAGAS CREEK AND UVAS CREEK (Year 3)

All of the work was in-stream which made removal much more difficult and all spray work required NPDES sampling.

The project site had more than 50 landowners to coordinate with. County of Santa Clara proved most challenging. An initial mowing trial on Uvas Creek was highly successful.

In summary, the early years of the project have produced mixed results. This is attributable to the varied nature of project locations but also the complexity associated with highly regulated work in riparian areas. Santa Clara County is densely populated and very little access to project areas requires more time, planning, and resources to effectively implement the project. Future project goals are to maximize the use of mechanical equipment where possible, negotiate site specific resource protection with regulatory agencies to expand work practices and work season, and investigate more cost effective disposal methods. The project will also closely monitor timing of cutting and herbicide treatments to determine the most effective matrix of control methods to reduce re-growth.