



Dry Creek Watershed Red Sesbania Control Project

INITIAL SUCCESSES AND CHALLENGES

- **Peter Buck-** Sacramento Area Flood Control Agency
- **Loran May, Shannon Lucas**— May & Associates, Inc.
- **Eric Evans-** Restoration Resources

Project Overview

- The Sacramento Area Flood Control Agency, together with its project partners is conducting a 3-year project to remove the invasive species red sesbania (*Sesbania punicea*) from the Dry Creek watershed in Sacramento and Placer Counties.
- Red sesbania is a Cal-IPC “red-alert” species that is rapidly invading riparian ecosystems of the Central Valley.

Project Overview (continued)

- **Project Funding** - Proposition 13 Flood Control Protection Program Grant provided by the California Department of Water Resources (DWR)
- **Project Oversight** —Management Advisory Team consisting of representatives from Sacramento and Placer County, City of Sacramento and City of Roseville, SAFCA, Placer County Agricultural Commissioner, California Department of Fish and Game, U.S. Fish and Wildlife Service, and NOAA Fisheries
- **Project Management** — SAFCA and May & Associates, Inc. providing hands-on project management

Project Objectives

- Improve floodwater conveyance;
- Aid the restoration of natural processes;
- Contribute to a statewide effort to control red sesbania;
- Eliminate a large key source population of red sesbania; and
- Restore recreational and habitat values along Dry Creek.

Project Area





- All publicly owned and accessible, privately-owned lands of the 100-square mile Dry Creek watershed.

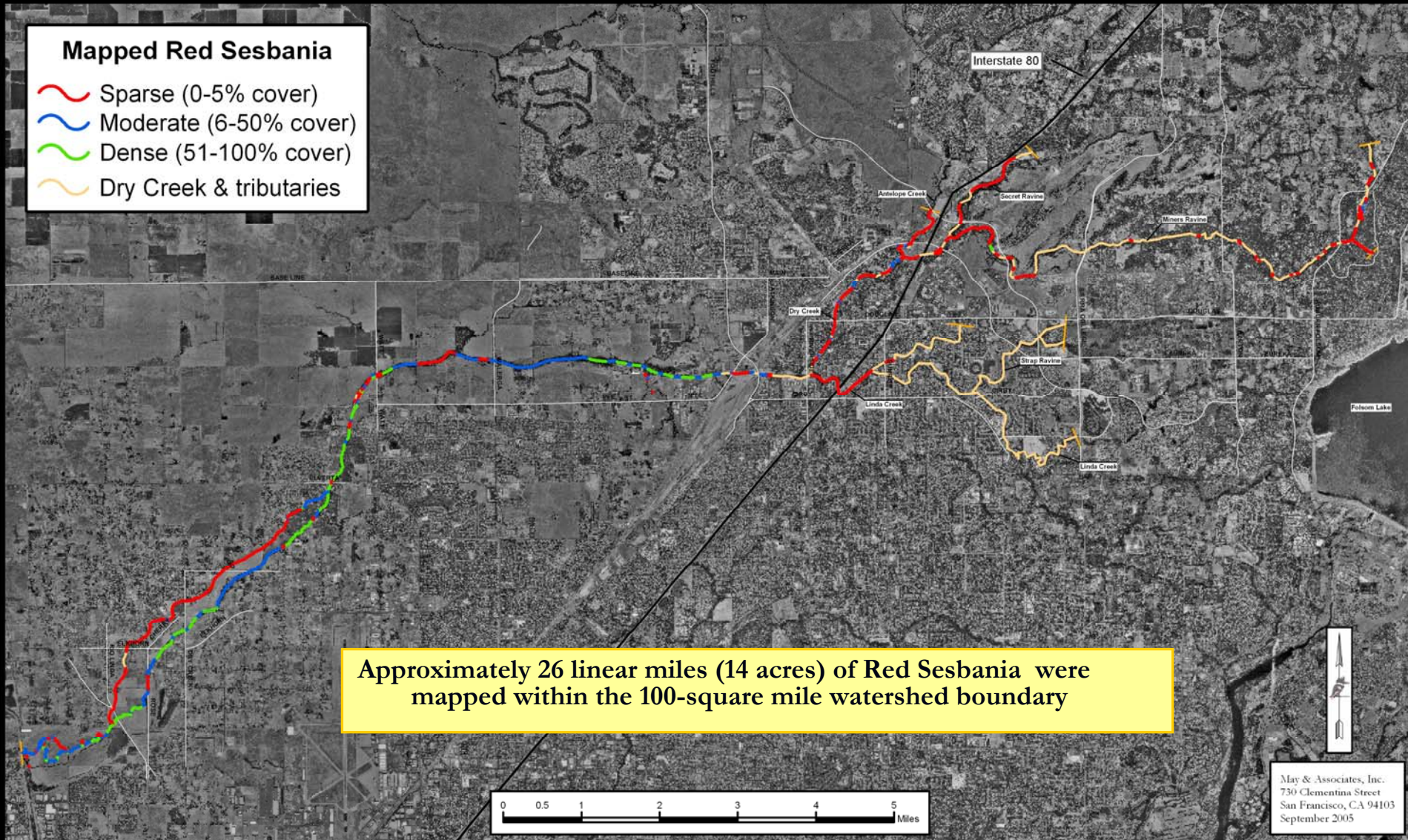
- Waterways included in Project Area:
 - Dry Creek and Linda Creek in Sacramento County;
 - Dry Creek, Miner's Ravine, Secret Ravine, Strap Ravine, Antelope Creek, Linda Creek, and Cirby Creek in Placer County.

- Of the approximately 44 linear miles of creek, 26 linear miles (60%) of the creek banks were found to be infested with red sesbania.

Baseline Red Sesbania Mapping

Mapped Red Sesbania

-  Sparse (0-5% cover)
-  Moderate (6-50% cover)
-  Dense (51-100% cover)
-  Dry Creek & tributaries



Approximately 26 linear miles (14 acres) of Red Sesbania were mapped within the 100-square mile watershed boundary

Highlights of 2004 Activities

- Prepared Baseline Red Sesbania Mapping
- Secured Project Permits (CEQA Notice of Exemption, DFG Streambed Alteration Agreement, Confirmed “No Effect” for endangered species with USFWS and NOAA, and for wetlands with USACE)
- Prepared Contractor Bid Specifications and Awarded Contract to Restoration Resources
- Completed Removal of 80% of all Mature Red Sesbania Plants by November 2004
- Conducted nursery outreach to raise awareness of invasive plant species entering wildlands from backyard gardens

Highlights of 2005 Activities

- Completed Removal of remaining 20% of all Mature Red Sesbania Plants by July 2005
- Conducted first full Re-Treatment of Red Sesbania seedlings and re-sprouts in July 2005, and second full re-treatment in October 2005.
- Conducted a pilot project 'flaming' of red-sesbania seedlings
- Conducted outreach to watershed groups and other land managers (Dry Creek Watershed Council, including Placer County Water Agency, El Dorado Irrigation District and others) to raise awareness of problems associated with red sesbania and other invasive plant species entering wildlands from storm drain systems and backyard gardens.

Project Permits

SENSITIVE SPECIES PROTECTIONS

Anadromous Fish and Valley Elderberry Longhorn Beetle (VELB)

- **Permits** - CEQA Notice of Exemption, DFG Streambed Alteration Agreement, Confirmed “No Effect” for endangered species with USFWS and NOAA, and for wetlands with USACE
- **Timing Restrictions** - Requirement to treat plants before October 15th and to remove plant biomass from active floodplain by November to protect fish and to protect floodway conveyance.
- **Herbicide Restrictions** – Requirements to use herbicides approved for use near water and follow anadromous fish guidelines from EPA (Aquamaster™ or Garlon 3A™ near water, Garlon 4™ away from water).
- **Removal Method Restrictions** - Use of small, fast-moving crews using hand-removal and backpack herbicide methods for sparse infestations, or a combination of hand removal with herbicide for moderate and dense infestations.

2004-2005 Activities

Red Sesbania Removal Using Hand Tools - Machete



Red Sesbania Removal with Power Tools - Chainsaws

2004-2005 Activities



Selective Spraying of Red Sesbania (2005)



Red sesbania cut in 2004 are re-treated (sprayed) in 2005

2004-2005 Activities



Hauling Red Sesbania Debris



2004-2005 Activities

Biomass Brush Piles (2004)



Using Bobcat to break down biomass (2004)



Biomass piles (2005)

2004-2005 Activities

Red Sesbania in the Upper Watershed



BEFORE

AFTER



2004-2005 Activities

Red Sesbania in the Lower Watershed



BEFORE

AFTER



Small Successes...

Positive results of test “Flaming” of red sesbania seedlings on sandbars



Many larger cut stumps had minimal re-sprouting in 2005



Natural re-generation of willow riparian habitat already observed

Big Challenges...

Seedlings can grow to 6 feet and produce flowers and set seed in 2-3 months



Plants cut (but not sprayed) in October 2004 were vigorously re-sprouting by summer 2005



Summary of Most Effective Treatments

- **INITIAL TREATMENT**- Cut and immediately paint cut stump with Aquamaster™
- **RE-TREATMENTS** – We recommend 3 re-treatments per year with Aquamaster™: one in late spring (when water levels drop) for cut stumps, one in mid-summer for 1st flush of seedlings, and one in early fall for second flush of seedlings.
- **FLAMING** - Mixed results: seedling control rate was good, however, flaming of the re-sprouting stumps (especially those in areas with a high water table) was not as successful.

Where Do We Go from Here?

Continue Treatment of Red Sesbania

- Get additional funding, find project sponsor. Suggest Ongoing Maintenance Contract with a professional herbicide applicator/contractor

Build Stewardship

- Continue to build community goodwill, foster partnerships with existing to build volunteer organizations for ongoing stewardship of the Dry Creek watershed

Provide Volunteer Opportunities

- Creek Week, Adopt-a -Creek? (Note opportunities may be limited due to private ownership of most of watershed lands)

Where Do We Go from Here? (Continued)

Continue Outreach and Education

- Private Landowners- pilot program in Placer County to provide replacement trees for landowners that voluntarily remove red sesbania
- Local Nurseries – Outreach with goal to help reduce the number of non-native plants invading wildlands from backyard gardens
- Upstream Land Managers - Continue to partner, share information about red sesbania detection and control

Lessons Learned

- **Weed control is a long-term objective; the project should be long term too!**
- Red sesbania can grow to more than 6 feet and produce seeds/flowers within 2-3 months – **Repeated Re-treatments are a MUST!**
- **Don't start something you can't finish**

Lessons Learned (Continued)

- **Maximize your funds** with efficient use of paid staff partnered with volunteers
- **Partner-** Look for other programs that can maximize your program
- Line out your grants so there is no gap in funding

Lessons Learned (Continued)



- **Don't forget the permits**
(allow 3-6 months minimum for permit processing time).
- **Restoration** (passive or active) following weed control is essential.
- **Keep track** of per-acre cost and effectiveness of various techniques.

Lessons Learned (Continued)

- Document your progress – a picture is worth a thousand words!



- Record your successes and failures in project notes.
- **NEVER GIVE UP!!!**

THANK YOU!

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