Restoring From Eucalyptus

Lessons Learned

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Eucalyptus 101

- Planted in CA in 1850's
  - Ornamentals
  - Timber/Fuel
- Cal-IPC classifies as "moderate" invasive due to needed conditions to thrive (thrive in the coastal zones)
- Lack litter decaying fungus (Australia) = 100 ton/acre vs. coast live oak = 3 tons/acre

Eucalyptus 101

- Alters
  - Soil moisture and chemistry
  - Light availability
  - Fire patterns
  - Ecological relationships among species

- Displaces native trees (also used by monarchs, egret and herons)
- Changes composition of insect and bird communities (large decrease in cavity nesting species) – Point Blue Bird Observatory Reports state a 70% in bird diversity vs. oak woodlands/native riparian
- Fallen leaves in water courses change aquatic macroinvertebrate communities, altering food chain due to chemical content
- Adapted to fire – Increase in fire frequency/intensity
  - Oakland “Tunnel” fire (worst in CA history)
  - Huge fuel load and volatile compounds

NRCS Support

- Funded Del Dios eucalyptus removal Project in 2014 (Phase 1) – completed this spring
- Funded Del Dios continued eucalyptus Removal in 2015 (Phase 2)
- Funded CNLM eucalyptus removal project in Copper Creek in 2015
- Funded San Elijo Lagoon Conservancy eucalyptus removal project in 2015

- Resource Concerns Addressed
  - Catastrophic wildfire
  - Wildlife habitat

- Funded by Farm Bill's Conservation Program – Environmental Quality Incentives Program – Initiative for Southwestern Willow Flycatcher

Background

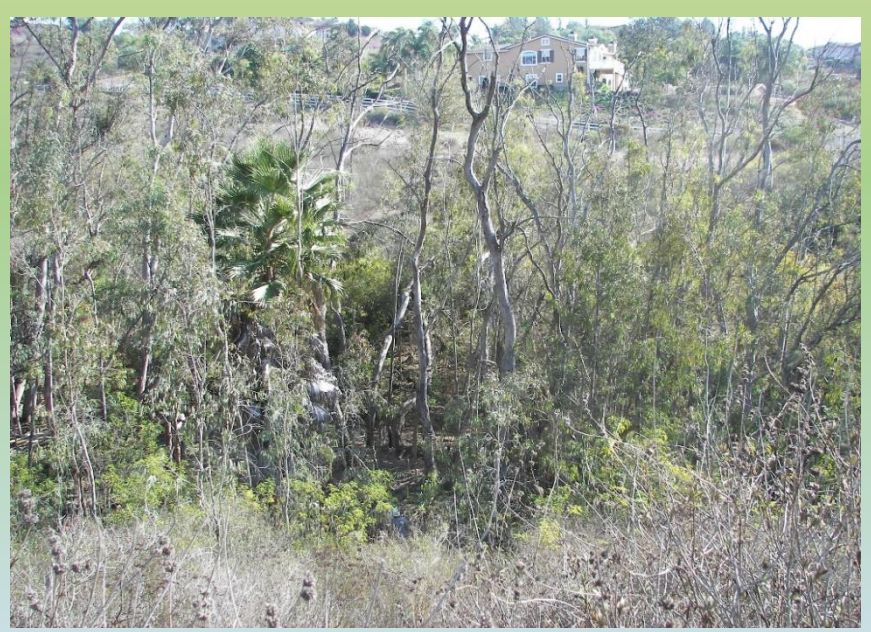
- Center for Natural Lands Management
- Copper Creek Fee Parcel in Rancho La Costa HCA
- 1.25 miles of creek full of Eucalyptus; approximately 4 acres treated, 4 acres remain
- 12 years of habitat restoration and Eucalyptus removal

Center for Natural Lands Management


San Marcos
Carlsbad
Project Area
Encinitas

Challenges

- Access to site
- Access to removing trees in creek
- Cost of tree removal using contractors
- Biomass removal
- Rapid herbicide application



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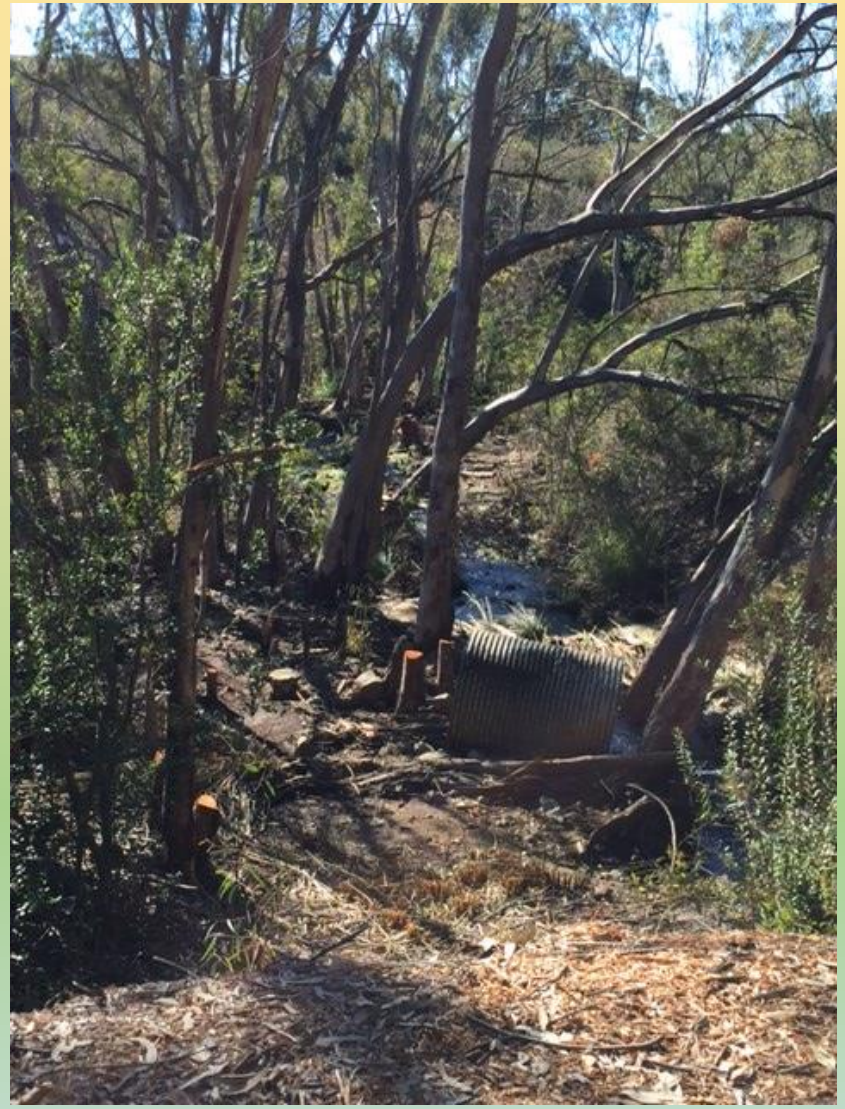
Lessons Learned

- Treatment Timing is a challenge– October/November when trees go into dormancy, nesting bird season, fire season, follow-up planting and retreatments
- Access
- Biomass removal is greatest challenge
  - Biomass removal is more expensive and complex than felling or treatment
  - Use mulch/material on site whenever possible
- Using Cal Fire Camp crews are the most effective labor to be found.
  - Need CEQA to be in place
  - Exemption for less than 5 acres for restoration purposes – Section 1533; 60-day turnaround



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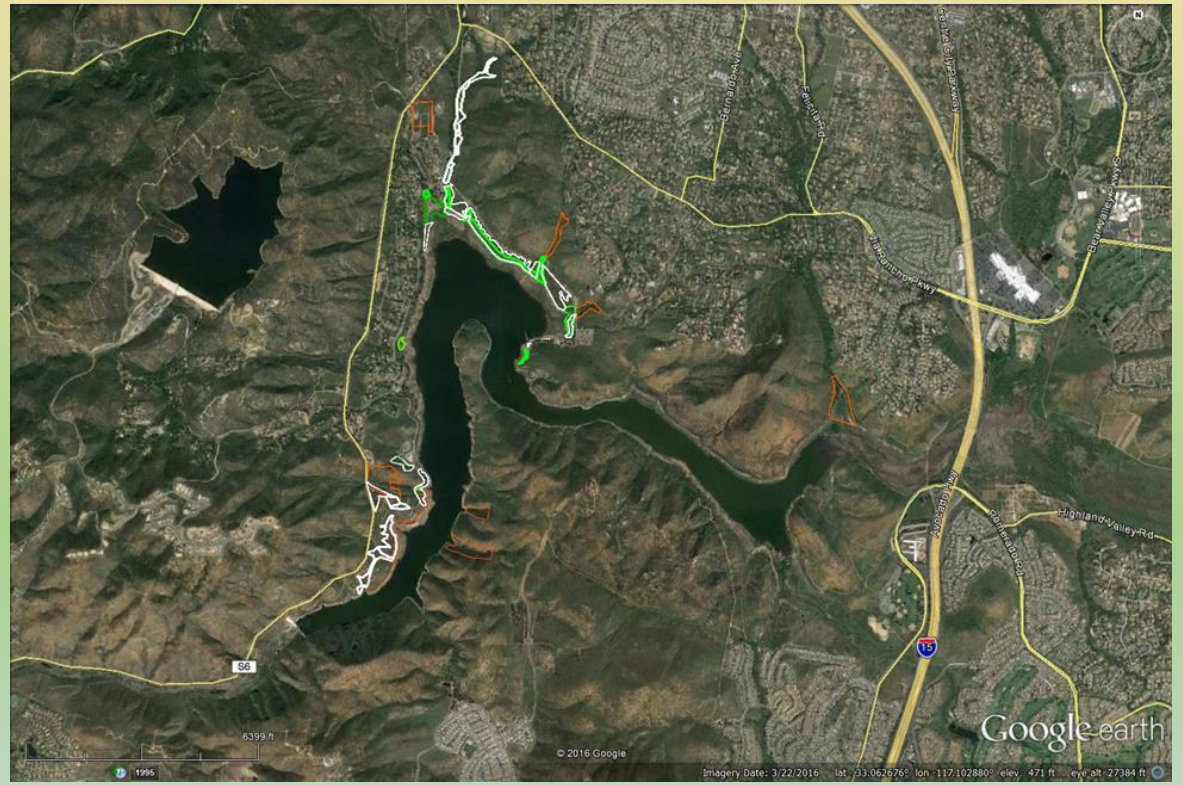
Lake Hodges Oak Woodland Restoration and Fire Fuel Reduction Project

- Burned in 2007 Witch Creek Fire adjacent to SDRP trail and community of Del Dios
- Project is 120 Acres owned by City of San Diego
- 100,000 Eucalyptus saplings in CSS and seasonal watercourses
- Mature Eucalyptus 10”-42” DBH
- Weed control and planting followed removal



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Biomass Removal: Women with Chainsaws

Cal Fire Camp Crews are extremely cost effective, capable and hard working

Daily communication of project requirements and constraints to Cal Fire Captain upon arrival

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Lessons Learned: Removal

- Cut Stump
  - Different projects use different herbicide formulas successfully. Garlon 4 at 30% in oil or Glyphosate 100% or 50% in water, immediately applied.
  - Cut stumps as low as possible and treat a stump immediately, with in minute of the cut.
  - Don’t drive over the stumps once the euc is cut and treated – keep on a track.
  - Heavy duty small 6” chipper was a very good investment for project with acceptable access

- Standing in Place (Drill n Kill, Girdling)
  - Uses same herbicide as cut stump
  - Better away from trails
  - Good habitat, tough visually for some humans

Del Dios Habitat Protection League

Mastication with a Tracked Skid Steer

- 10 acres of young trees removed
- 300’ Keep clear distance and water truck
- 3 passes with 5% glyphosate after mastication to treat re-sprouting

Also:

Euc removal is a long term project - seedlings and re-sprouts happen, probably for 5 years

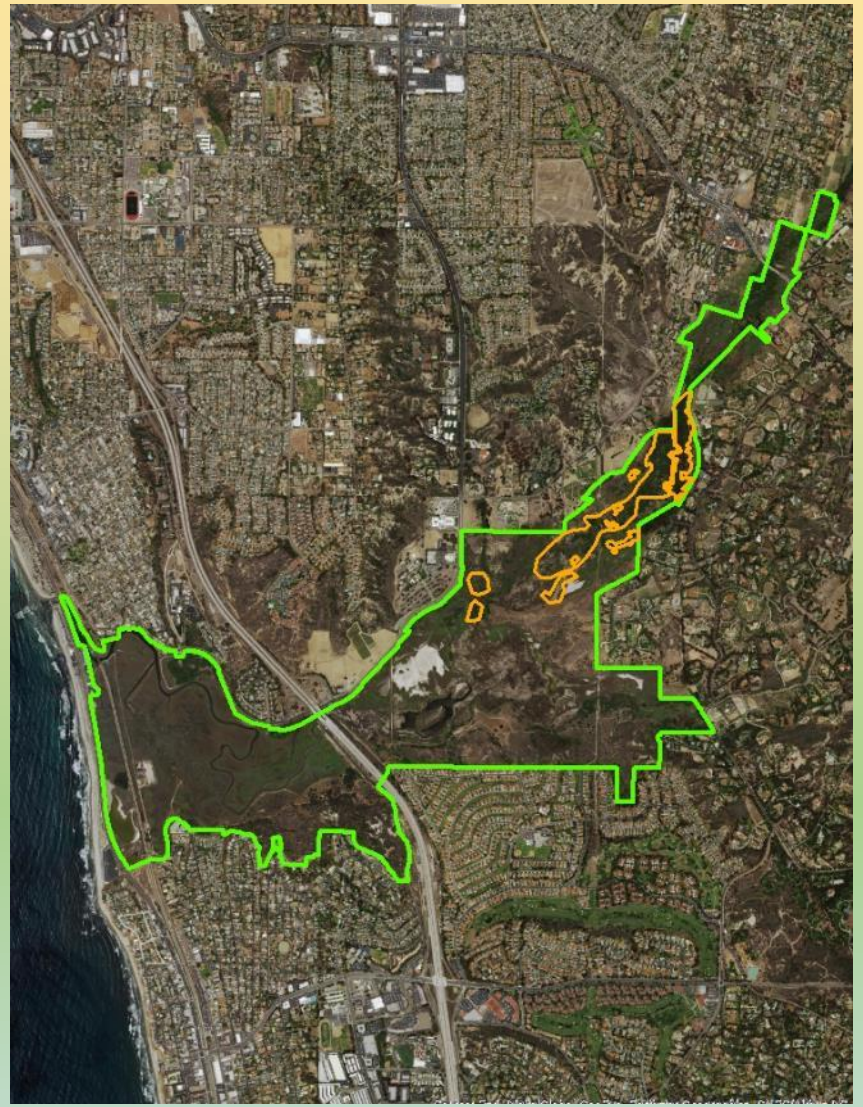
Trees are an emotional and political issue

While the public is now sensitized to glyphosate, many people don’t realize eucalyptus is non-native.

Del Dios Habitat Protection League

San Elijo Lagoon Conservancy (SELC) Forest Stand Improvement Project in the San Elijo Lagoon Ecological Reserve

- 57.0 acres of forested area within Escondido Creek and an oak/sycamore riparian woodland was infested with eucalyptus trees. Eucalyptus trees have been either cut/stumped, with 100% Aquamaster herbicide application or girdled with a 100% Aquamaster injection.
- Follow-up removal and treatment of slash resulting from the eucalyptus treatment on 6.4 acres adjacent Escondido Creek prior to planting.
- Removal of all the downed debris in order to reduce biomass, which could pose as a hazardous fuels risk and increase erosion and native plant regeneration (41.8 acres).
- In addition to eucalyptus, there is an infestation of thistles, non-native grasses and invasive mustards. This especially becomes a problem once the shade of the eucalyptus trees is removed and before native riparian forest species can establish. SELC is conducting on-going treatment of these invasives in order to allow the native vegetation to have an opportunity to establish.
- Following plant native plant installation, SELC will conduct avian monitoring to assess success of revegetation efforts.



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Challenges:

- Access – creek crossing; private property.
- Communicate with neighbors/community:
    - Emotional opposition to tree removal and elimination of privacy;
    - Fire and invasive species education leverages community support of eucalyptus removal.
- Timing – nesting birds, rainy season, brittle biomass.
- Cost for complete removal (vs. drill in place).

Lessons Learned:

- Phase project:
    - Leverage matching funds that allow for phasing.
- Have work plan organized for different award amounts per acre and paces of work; prepare contingency plans.
- Monitor crews daily.
- Conduct “test plots” to establish time/acre and amount of trees removed in that time given access restrictions and best management practices; employ adaptive management of funds and timing base on outcome of phasing.
- Continually engage community.

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SELC Project Partners

NRCS Natural Resources Conservation Service

CITY OF Encinitas

CA.GOV WCB State of California Wildlife Conservation Board

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Center for
Natural Lands
Management

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
CAL FIRE
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Oak Woodland and Fire Fuel Reduction Project at Hodges Reservoir

PARTNERS

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The Friends of
Los Peñasquitos
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Questions???