

Lightening Talk by Bill Neill  
for 2021 Cal-IPC Symposium



# Ailanthus Control Methods

*Ailanthus altissima*

Common names in U.S.:

West Coast – (Chinese)  
Tree of Heaven

East Coast – Stink Tree

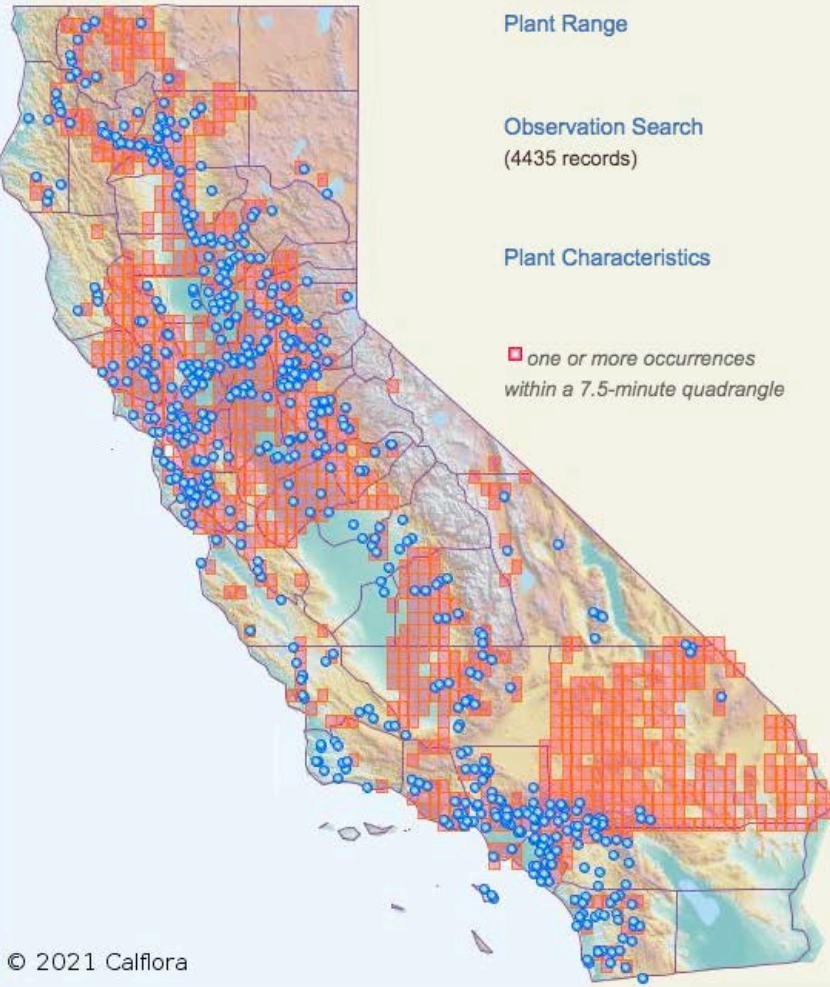
Riverside Fwy – Santa Ana Canyon



*Ailanthus altissima* (Mill.) Swingle  
Ailanthus, Tree of heaven

*Ailanthus altissima*, a dicot, is a **tree** that is **not native** to California.

Cal-IPC rating: Moderate



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**Name Status:**  
Accepted by PLANTS

Alternate Names:

PLANTS *Ailanthus glandulosa*  
PLANTS *Toxicodendron altissimum*



Bloom Period

Photos from [Calflora](#) / [CalPhotos](#)

Family: [Simaroubaceae](#)

Genus: [Ailanthus](#)



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© 2013 Neal Kramer



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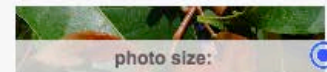


photo size:

Toxicity: MINOR, DERMATITIS Wetlands: Occurs usually in non wetlands, occ

Habitat: disturbed

Communities: weed, characteristic of disturbed places



# **WIDESPREAD IN SOUTHERN CALIFORNIA & SIERRA NEVADA FOOTHILLS**

Natural Areas treated during past 20 years:

Whittier Narrows – Army Corps Engineers

Griffith Park – City of Los Angeles

Montecito Heights – North East Trees

Big Tujunga Canyon – Angeles N. Forest

Mill Creek Canyon – Inland Empire RCD

Private yards treated during past 10 years:

Mt. Washington/Pasadena --- 75

Calabasas/Agoura/Topanga – 15

Lake Hughes/Leona Valley --- 18





Ailanthus flourishes in degraded soil where few other trees can survive; abundant on abandoned factory sites of eastern US.





# CONTROL AND UTILIZATION OF TREE-OF-HEAVEN

*A Guide for Virginia Landowners*

Ubiquitous in vacant lots and abandoned factories of eastern U.S.; increasingly common in wildlands.

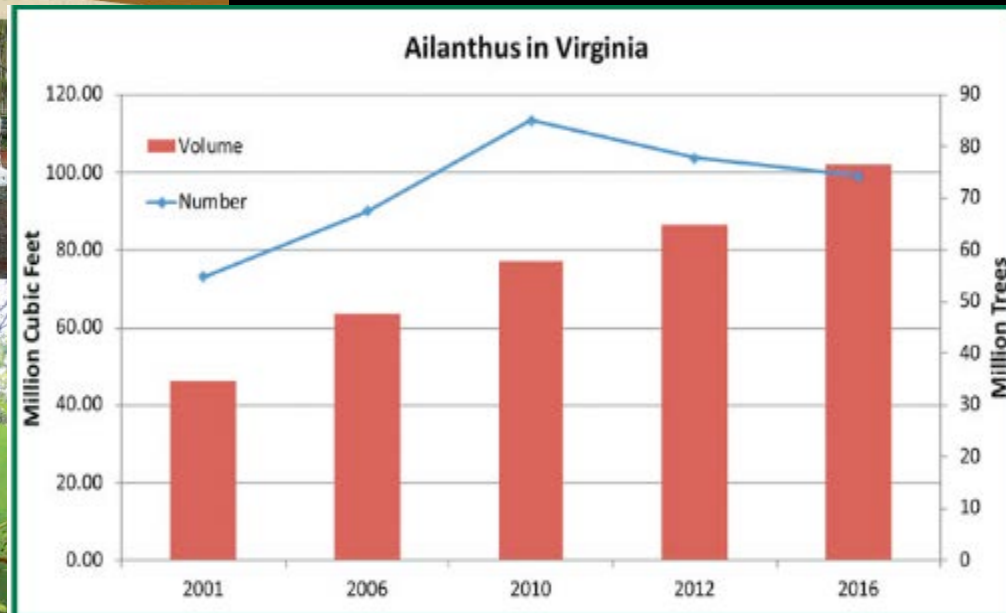


Figure 1. Volume and number of trees ( $\geq 5.0$  inches d.b.h.) of Ailanthus by survey year, Virginia.



# How to recognize Ailanthus

- > Long pinnate compound leaves
  - >> Leaflets have notch at base
    - >>> Mottled yellow-gray bark
      - >>>> Foliage odor resembles male cat urine (Wikipedia) or rancid peanut butter







California Walnut



Ailanthus





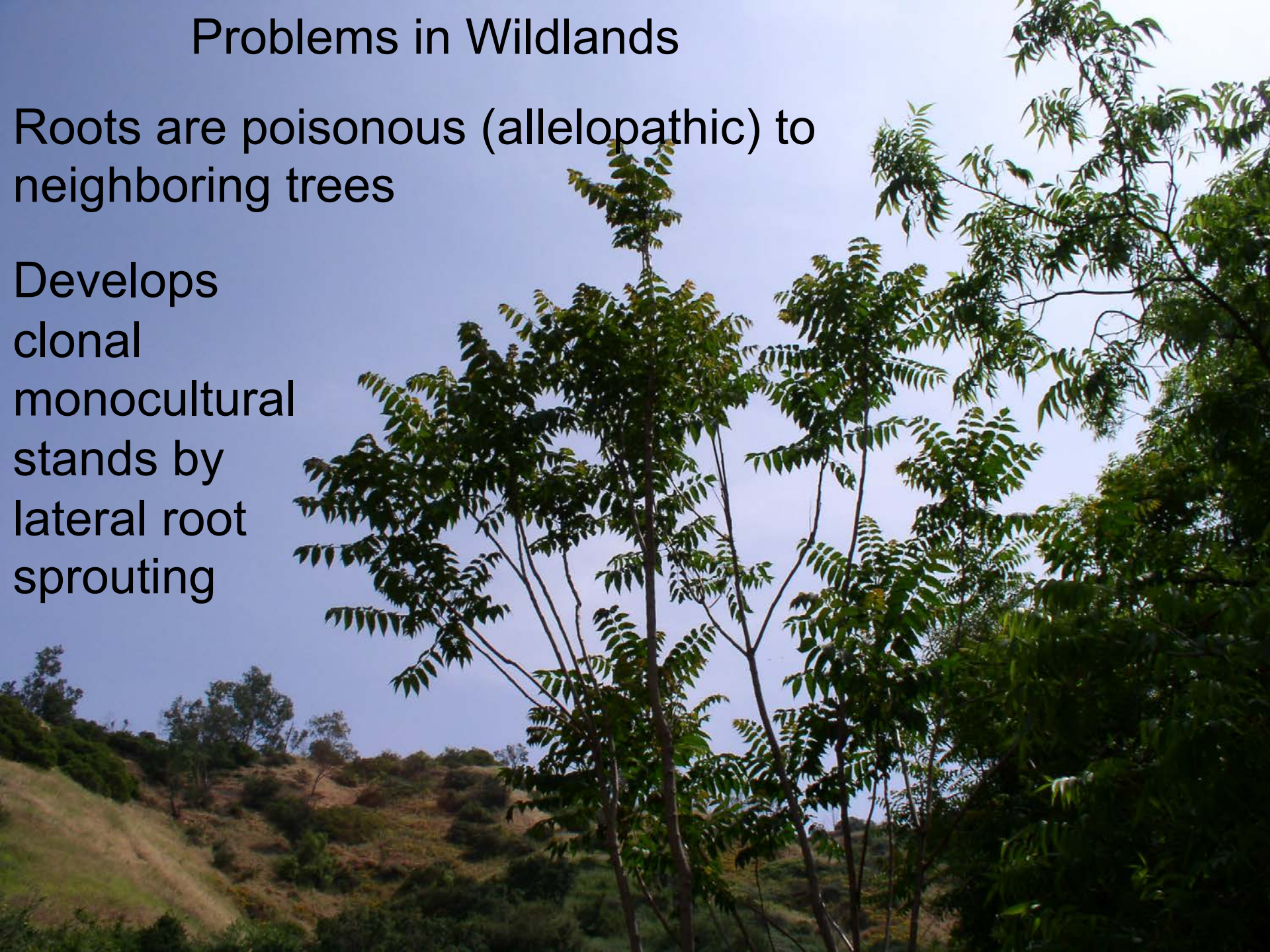
**In Big Tujunga Canyon, basal bark application of Pathfinder II herbicide accentuates yellow-gray mottling of bark on 2-inch trunk**



# Problems in Wildlands

Roots are poisonous (allelopathic) to neighboring trees

Develops  
clonal  
monocultural  
stands by  
lateral root  
sprouting







**Large parent tree surrounded by saplings grown from lateral roots –  
outlier plants to left, possibly sprouted from seeds --  
6 weeks after herbicide treatment, in Santa Fe Dam basin  
of San Gabriel Valley**



# Half-acre dense grove of Ailanthus at Griffith Park

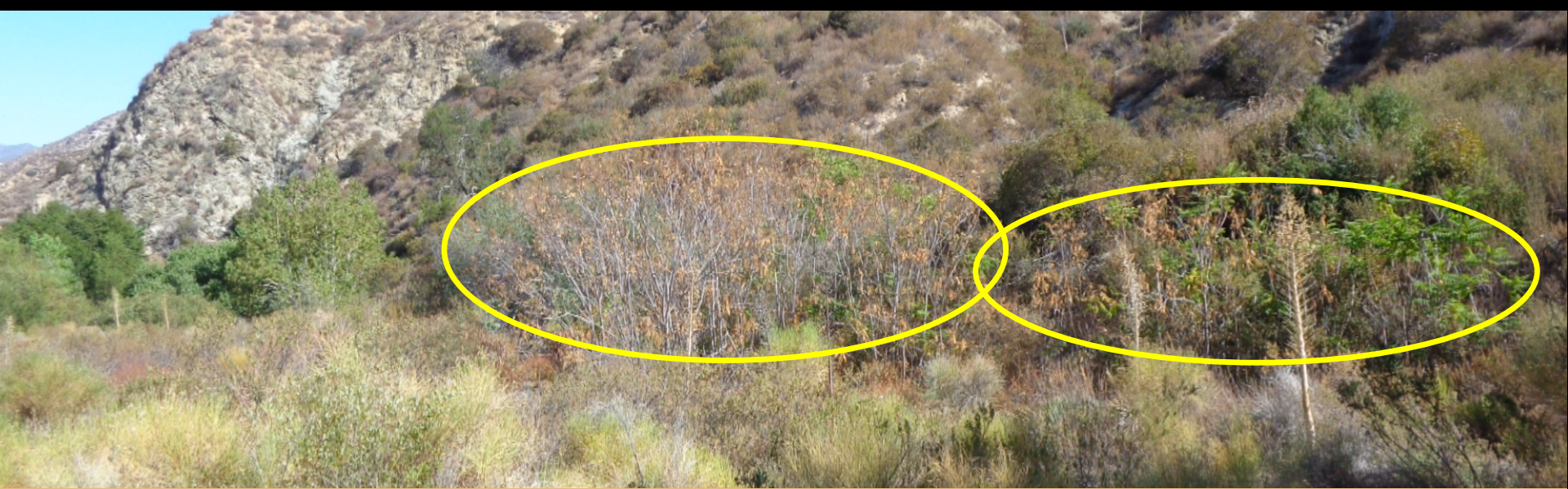






**Quarter-acre Ailanthus grove  
on Glendora Ridge in San Gabriel Mountains,  
4 weeks after herbicide treatment**





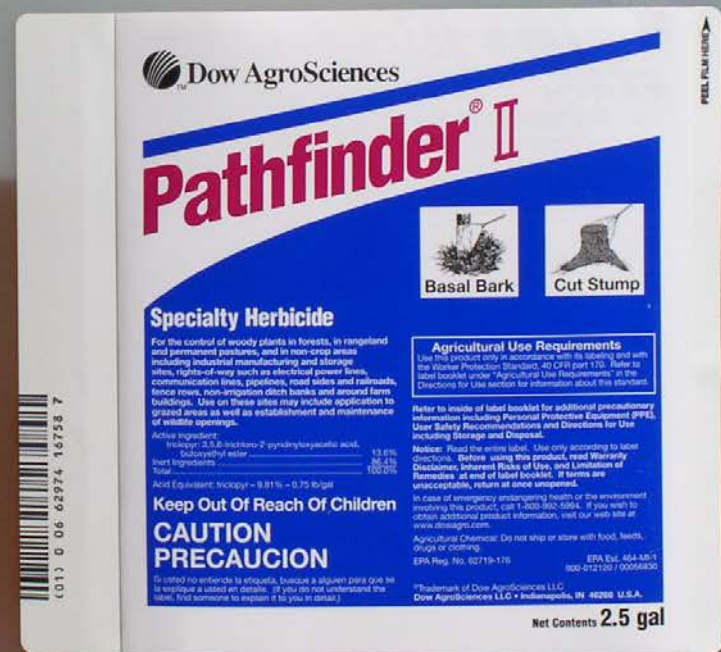
**Upper: Ailanthus grove in Big Tujunga Canyon, sprouted after 2009 wildfire**  
**Lower: Defoliated trees 7 weeks after basal bark herbicide application**



# AILANTHUS Control Considerations

- > Felling or girdling trunks causes profuse root sprouting
- > Has thin bark like castor bean, so saplings & juvenile trees are susceptible to basal bark application of Pathfinder II without cutting
- > For large trunks, use hatchet to chop frill cuts in vertical rows, followed by basal bark treatment with Pathfinder II
- > Imazapyr (BASF's Stalker & Habitat) effective for foliar spraying of saplings





Preferred Control Methods

Highly susceptible to triclopyr herbicide

→ Pathfinder II for basal bark

→ or 25% Garlon 4 in veg oil or diesel oil





Apply Pathfinder II herbicide using spray bottle with chemical-resistant trigger, available from janitorial supply stores.



Basal-bark  
treatment of  
large multi-  
trunk plants  
takes less than  
one minute



No cutting of bark required on largest  
trunks with diameters up to 16 inches

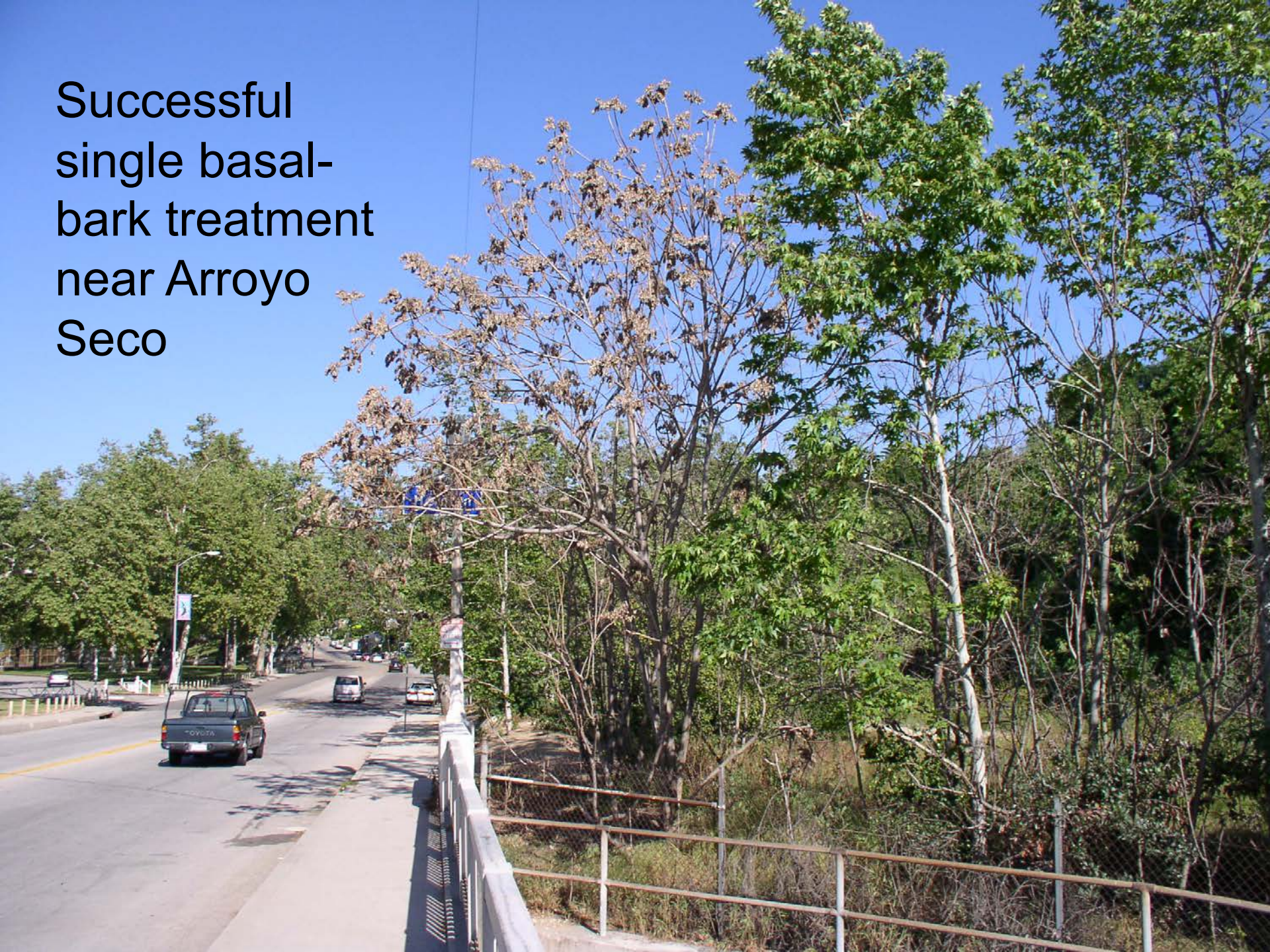




**Unlike girdling, vertical columns of frill cuts by hand ax followed by basal bark application preserves fluid communication between tree crown and roots, thus avoiding massive sucker sprouting from lateral roots**



Successful  
single basal-  
bark treatment  
near Arroyo  
Seco





Successful  
single basal-  
bark treatment  
in Santa Ana  
Canyon







**One-acre grove of Ailanthus trees in Montecito Heights  
(northeast of downtown Los Angeles) in July 2020,  
two weeks after basal bark application of Pathfinder II at top**





**One-acre Ailanthus grove in Montecito Heights, September 2020,  
6 to 8 weeks after basal bark application of Pathfinder II;  
approx. 150 trunks treated in 4 hours with 1 gallon herbicide**





**One-acre grove of dead *Ailanthus* trees at Montecito Heights, July 2021, one year after basal bark herbicide treatment; foliage of few new stems sprayed with dilute imazapyr**





# Cal-IPC News

*Protecting California's Natural Areas  
from Wildland Weeds*

Vol. 13, No. 1, Spring 2005

Quarterly newsletter of the California Invasive Plant Council

## Tools and Techniques

### The Basal Bark Method of Applying Triclopyr Herbicide

*By Bill Neill, Riparian Repairs and Team Arundo Angeles*

As we celebrate the 5th anniversary of Cal-IPC's *Invasive Plants of California's Wildlands* (UC Press, 2000), I would like to offer some insights about control methods that were not fully appreciated when the book was assembled during the late 1990's. My comments address basal bark and foliar treatment methods using Pathfinder II and Garlon 4 formulation

#### Basal Ba

Over the years, I have seen basal bark treatments used on numerous riparian corridors, stream channels, natural areas, and floodplains. The basal bark method involves applying herbicide to the base of the plant, where it enters the vascular system. This method is particularly effective for treating large, woody plants. Another advantage of

spray one-inch diameter stems from a distance, hitting adjacent stems. For treating large infestations of castor bean plants, I sometimes use a backpack sprayer of 4 diluted to 20 percent in diesel oil, as permitted on the label. Once I tried diluting to 15 percent, but it was ineffective.

Not only is the basal bark treatment method effective, it limits applicator contact with the plant's poison. Ricin toxin present in castor bean seeds, foliage, and fruit can be absorbed by the human body, where one ricin molecule can destroy ribosome molecules necessary for protein synthesis. Because manufactured compounds, the human health effects of exposure to natural poisons such as ricin have been studied by the U.S. EPA.

After herbicide treatment, dead trees left standing

For more information, see Spring 2005  
Cal-IPC News, posted at [www.cal-ipc.org](http://www.cal-ipc.org)



**After cutting without herbicide, shallow roots sprout abundant saplings that can be controlled by foliar spraying**

Los Angeles freeway margin







**After wildfire, Ailanthus foliage grows rapidly from root crowns and lateral roots, here at Whittier Narrows. Fire followed by foliar spraying allows control of established groves relatively easily and cheaply.**





**One options: Spray post-fire foliage with 2.5% imazapyr herbicide (Habitat or Polaris) plus methylated seed oil to control regrowth effectively and easily.**





**Imazapyr is effective at translocating through long lateral roots, but slow-acting so foliage turns yellow and wilted about 4 to 6 weeks after application**





**About ten weeks after foliar spraying, *Ailanthus* foliage is mostly brown; resprouted Mexican elderberry behind dead foliage is thriving.**



# Habitat<sup>®</sup>

## herbicide

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

**Active ingredient:**

Isopropylamine salt of Imazapyr: (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)\*

**Inert ingredients** ..... 28.7%

**Total** ..... 71.3%

\* Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Est. No. is indicated by the first digit of the code printed on this container:

4 = 241-PR-002

3 = 68585-FL-001

EPA Reg. No. 241-426

U.S. Patent No. 4,798,619

**KEEP OUT OF REACH OF CHILDREN.  
CAUTION/PRECAUCIÓN**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

In case of an emergency endangering life or property involving this product, call day or night,  
800-832-HELP.

See Next Page for Additional Precautionary Statements

For more information, please visit our web site:

[www.vmanswers.com](http://www.vmanswers.com)

**Net contents: 2.5 gallons**

Product of U.S.A.

2073067

NVA 2005-05-246-0441

BASF Corporation  
Agricultural Products  
26 Davis Drive  
Research Triangle Park, NC 27709

**BASF**  
The Chemical Company

The preferred herbicide for Arundo control stops protein synthesis by plants, hence is inert to animal life.

Habitat herbicide is registered for aquatic use, and livestock are allowed to drink treated water.





Recommended by Beau Miller, Corteva Agriscience:

- ▣ Excellent **grass safety**
- ▣ **Caution signal word**
- ▣ **Premix of Milestone + Garlon 3A**
- ▣ Broadcast use rates up to 9 pt/a or 9 qt/a max for spot treatments (50% acre limit)
- ▣ Not a Restricted Use Pesticide
- ▣ **Best Post Resistance Management Product on the market**
  - No grazing restrictions
- ▣ Packaging: 2.5's, 30's, bulk

**Capstone<sup>®</sup>**  
**HERBICIDE**



GROUP	4	HERBICIDE
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**Active Ingredient:**

Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-.....	2.22%
Triethylamine salt of [(3,5,6-trichloro-2- pyridinyl)oxy]acetic acid).....	16.22%
Other Ingredients .....	81.56%
Total .....	100.0%

**Acid Equivalents:**

aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) – 1.15% (0.1 lb/gal)	triclopyr (3,5,6-trichloro-2-pyridinyloxyacetic acid) – 11.63% (1 lb/gal)
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## Precautionary Statements

### Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-572

# CAUTION

**Harmful if Swallowed • Causes Moderate Eye Irritation**

**Avoid contact with eyes, skin or clothing.**

### Personal Protective Equipment (PPE)

Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category C on an EPA chemical-resistance category selection chart.

Do not ap  
persons, e  
in the area  
or Tribe, co

**Not For Sa**

**Not for use  
New Hamp  
are permitt  
these sites**



**Entry Restrict**  
or allow other

**Agricultu**  
Use this prod

Capstone equivalent to  
5% Milestone & 36% Garlon 3A



*Tree of Heaven Demo in Visalia  
Foliar treatment  
9 pints of Capstone/acre*



Beau Miller slide



# *Tree of Heaven Caltrans Demos With Capstone 9 pts/acre or 5% v/vol*



**Pretreatment**



**Capstone @ 28  
DAT**



**Dead Ailanthus  
Roots  
7 MAT**

**28 DAT**

Beau Miller slide





# *Capstone on Tree of Heaven 7 months after treatment*



Beau Miller slide





## Capstone on Tree of Heaven 54 Months after Treatment

Beau Miller slide



## THE ROLE OF HERBICIDES IN PRESERVING BIODIVERSITY

by Jake Sigg

**N**O DATA EXIST for private land, but the Bureau of Land Management estimates that the United States is losing 6,000 acres of public land every day to invasive non-native plants (4,600 acres a day in the West alone), rendering land economically useless and biologically impoverished. In the frequently polarized debate over the use of herbicides in battling aggressive weeds, the subject of biodiversity is too often lost. Herbicides, per se, have become the focus of the debate. This is backwards—biological diversity should be front and center. This is the pivot on which CNPS policy must turn. Does proper use of herbicides work for or against biodiversity? Herbicide critics usually isolate the subject. They neglect the differences among herbicides and fail to address the serious weed problem confronting the California flora. I am a proponent of judicious use of herbicides, and favor their employment as a vital part of a weed management strategy.

Our discomfort with chemicals began with revelations in Rachel Carson's *Silent Spring* in the 1960s. The use of chemicals as a quick fix for complex problems created a backlash, resulting in a regulatory climate that protects the public against many of the dangerous substances used indiscriminately in the past. Herbicides became entangled in the reaction to chemicals, but evidence is skimpy re-

at those "who are unwilling to accept a short-term environmental insult to avoid a long-term ecological catastrophe." Weed warriors are keenly aware that once native biological control agents are introduced, they find it difficult to remove them sometime later, and deeply pain-

Our present use of native weeds as biological agents, many of which are also herbicides.

Classical biological control, perhaps only, is a means of reducing the ample of classical biological control (*Hypericum* species) in northern California, which has been the introduction of the Klamath weed.

for some plants, biological control is not a natural crop or a predator that feeds on the crop.

Developing a biological control agent is initially expensive and time-consuming, and there is no guarantee of success. Un-



SPECIAL ISSUE: WEEDS



*That's all, Folks!*

*Thank you!*