

100 Years of Coordinated County and Statewide Eradication of Noxious and Invasive Weeds in California: a Brief History



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Overview

- Setting the Stage
- Act 1: Early History 1900-1945
- Act 2: The Heyday 1945-1978
- Act 3: Fall from Grace 1978-2011
- Noxious Weed Eradication 2 – the sequel ??

Setting The Stage

What's a Noxious Weed?

- Ag Code 5004. “Noxious weed” means any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, which the director, by **regulation**, designates to be a noxious weed.

§ 4500. Noxious Weed Species.

3 CA ADC § 4500

BARCLAYS OFFICIAL CALIFORNIA CODE OF REGULATIONS

Barclays Official California Code of Regulations [Currentness](#)

Title 3. Food and Agriculture

Division 4. Plant Industry

Chapter 6. Weed Free Areas and Weed Eradication Areas

Subchapter 6. Noxious Weed Species (Refs & Annos)

3 CCR § 4500

§ 4500. Noxious Weed Species.

It has been determined that the following species of plants are noxious weeds within the meaning of Section 5004 of the Food and Agricultural Code:

Acacia paradoxa (Kangaroo thorn)

Acaena anserinifolia (biddy biddy)

Acaena novae-zelandiae (biddy biddy)

Acaena pallida (biddy biddy)

Origin of Noxious Weeds

Not all noxious weeds started in California, they are introductions into western North America originating from other parts of the world.

- Many noxious weeds were unintentionally introduced and spread in commercial seed.
- Other weeds were intentionally brought to California for horticulture, but have escaped and now cause economic and environmental harm.

THE REBELS BRAND TALL FESCUE MIXTURE		
MAT. 100519431		NET WT. 20 LB
PURE SEED	VARIETY/KIND	GERMINATION %
23.35%	Rebel Advance Tall Fescue	85%
14.60%	Rebel Xtreme Tall Fescue	85%
9.75%	Rebel IV Tall Fescue	85%
1.50%	OTHER CROP SEED	
0.75%	INERT MATTER	
50.00%	COATING MATERIAL	
0.00%	WEED SEED	
NOXIOUS WEED: 87 ROUGH BLUEGRASS		PER LB. (5.5 PER
LOT: M16-15-RTF045		
TEST DATE: 8/2015		
In AK, AZ, CA, CO, CT, DE, ID, IL, IN, MD, MI, NC, NE		



CDFA has the Mandate and Authority

- Food and Ag Code 403 - The department (*CDFA*) shall prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds.
- Food and Ag Code 7271(a) - The Legislature designates the Department of Food and Agriculture as the lead department in noxious weed management

CDFA Weed Prevention System



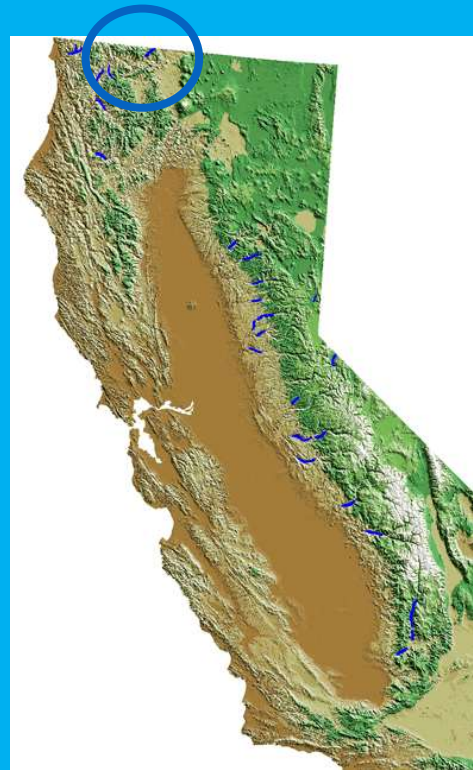
CDFA Weed Prevention System



* Hydrilla Eradication Program and Forest Service Grant Program Retained

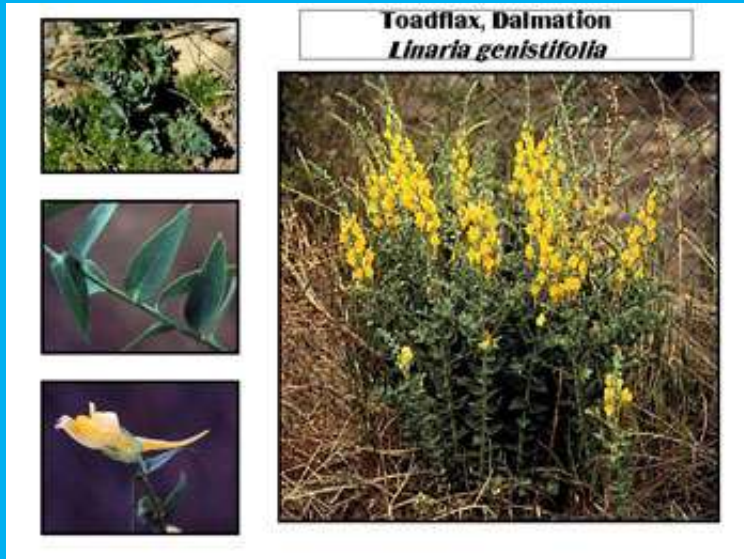
Leafy Spurge

- On the 100 worst Invasive Species of the World list
- Only on Scott River and heading down the Klamath
- \$180 million losses in upper midwest / year
- Need to use herbicide in a river channel



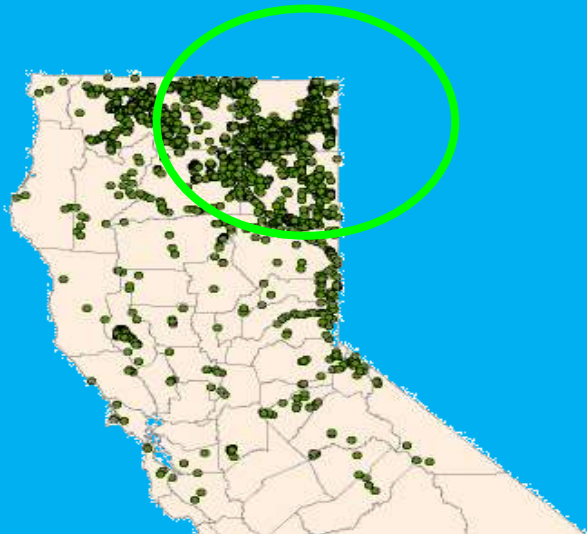
Dalmation Toad Flax

- Forms monocultures
- No mechanical methods
- Chemical control is difficult



Scotch Thistle

- Can be over 10 feet tall- spiny cornfield
- Very heavy in Modoc county
- Herbicidal control necessary
- 50 year seed bank



Act 1

Act 1: Early History 1900-1945

Bureau of Rodents and Weeds started within the new California Department of Agriculture in 1919

State weed laws were first enacted in 1872 to prohibit the dissemination of Scotch and Canada thistle in Humboldt, Siskiyou, Del Norte and Alameda counties.

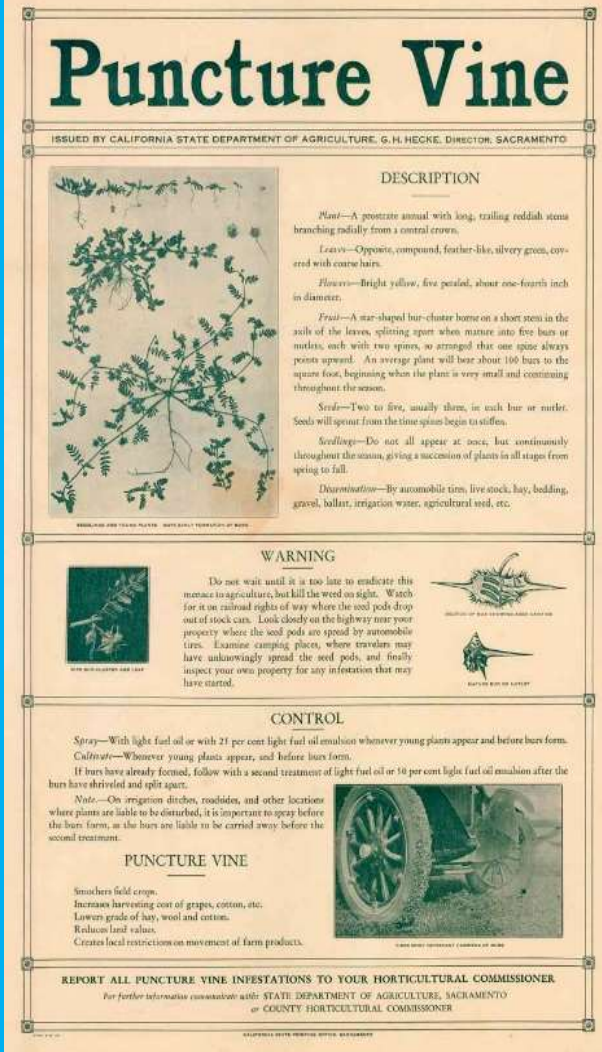
In 1883 statutes were enacted to grant the authority to county boards of supervisors to provide for the control of noxious weeds.



A Century of Noxious Weed Eradication

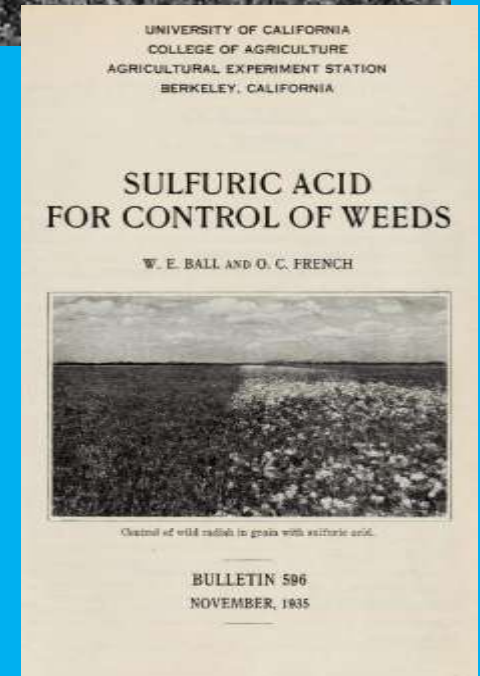
Bureau of Rodents and Weeds started within the California Department of Agriculture in 1919

- Fight plague in rodents
- Implemented Weed Free Area Act
- Trained County Commissioners
- Conducted risk analysis,
- Designed experiments
- Coordinated state-level weed surveys
- Funded county eradication projects



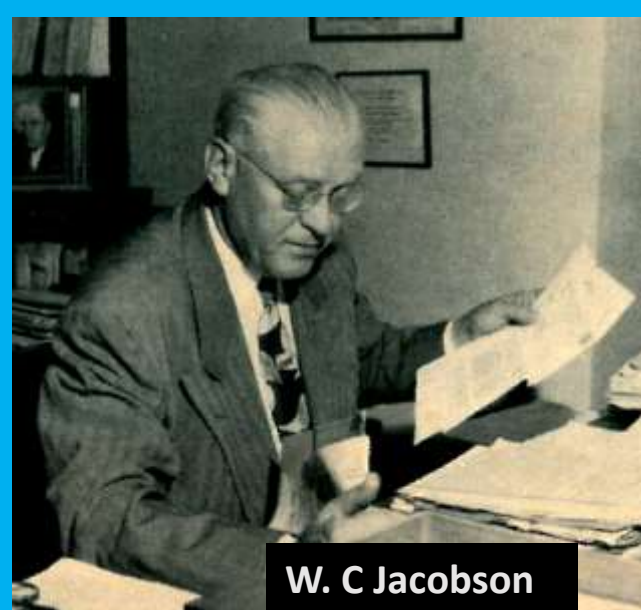


Options for control were limited, harsh and not always effective. One of the early criteria for becoming a noxious weed was difficulty in achieving control. The thought was “better prevent spread and establishment than to let a difficult problem take root”.

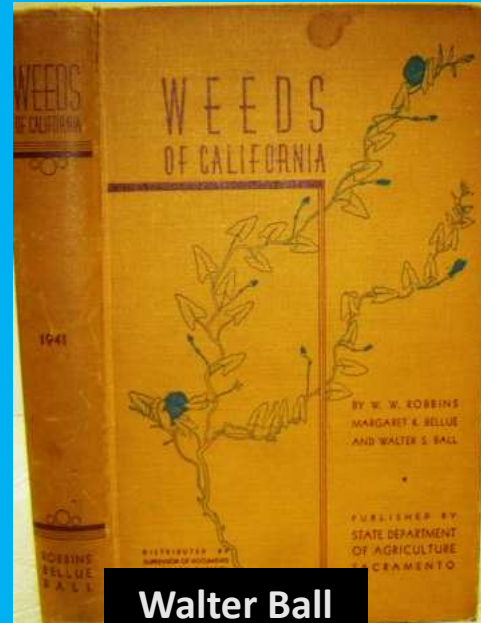


The Rodent and Weed Program Was Highly Regarded.

Some Historic Program Leaders



W. C Jacobson



Walter Ball



Jim Koehler

W.C. Jacobson started as the Rodent and Weed Program Leader in 1919 and rose to become the Director of Agriculture by 1930

“Since Koehler retired, weeds and the emphasis placed on them appears to have diminished”
Staff memo 1986

Act 2

Act 2: The Heyday 1945-1978



Act 2: The Heyday 1945-1978

- 13 established noxious weed species were eliminated completely from California.
- 9 additional species were reduced to less than 5% of their statewide distribution
- 1000's of individual infestations were detected and permanently extirpated.



County-State-Private Partnership

- **CDFA's main role was to supply statewide leadership and prioritization, funding, control .**
- **The County Agriculture Departments (Ag Commissioner) supplied most of the people power and did most of the treatments and monitoring.**
- **Private and governmental landowners also did treatments and shared in the cost of control.**
- **For 40 years the cost of eradication was split 1/3, 1/3, 1/3.**
- **The 1/3 split ended in 1979 after Prop 13 when the counties suffered economic disaster.**

Eradicated Species

- 1) **Whitestem distaff thistle** – *Carthamnus leucocaulos*.
- 2) **Giant dodder** – *Cuscuta reflexa*
- 3) **Serrate spurge** – *Euphorbia serrata*
- 4) **Russian salttree** – *Halimodendron halodendron*
- 5) **Blueweed** – *Helianthus ciliaris*
- 6) **Tanglehead** – *Heteropogon contortus*
- 7) **Creeping mesquite** – *Prosopis strombulifera*
- 8) **Meadowsage** – *Salvia virgata*
- 9) **Heartleaf nightshade** – *Solanum cardiophyllum*
- 10) **Austrian peaweed** – *Sphaerophysa salsula*
- 11) **Wild marigold** – *Tagetes minuta*
- 12) **Syrian beancaper** – *Zygophyllum fabago*
- 13) **Perennial sowthistle** - *Sonchus arvensis*

A-rated Weed Species Under Eradication (as of 2012)



****Punagrass - *Achnatherum brachychaetum***

Biddy biddy - *Acaena* spp.

Camelthorn - *Alhagi pseudalhagi*

****Alligatorweed - *Alternanthera philoxeroides***

Fertile capeweed - *Arctotheca calendula*

****Plumeless thistle - *Carduus acanthoides***

****Musk thistle - *Carduus nutans***

****Diffuse knapweed - *Centaurea diffusa***

Iberian starthistle - *Centaurea iberica*

****Spotted knapweed - *Centaurea maculosa***

****Squarrose knapweed - *Centaurea squarrosa***

Yellowspine thistle - *Cirsium ochrocentrum*

Wavyleaf thistle - *Cirsium undulatum*

****Bearded creeper - *Crupina vulgaris***

Golden thistle - *Scolymus hispanicus*

Leafy spurge - *Euphorbia esula*

Halogeton - *Halogeton glomeratus*

****Dalmatian toadflax - *Linaria genistifolia* spp.
*dalmatica***

****Scotch thistle - *Onopordum acanthium***

Illyrian thistle - *Onopordum illyricum*

Taurian thistle - *Onopordum tauricum*

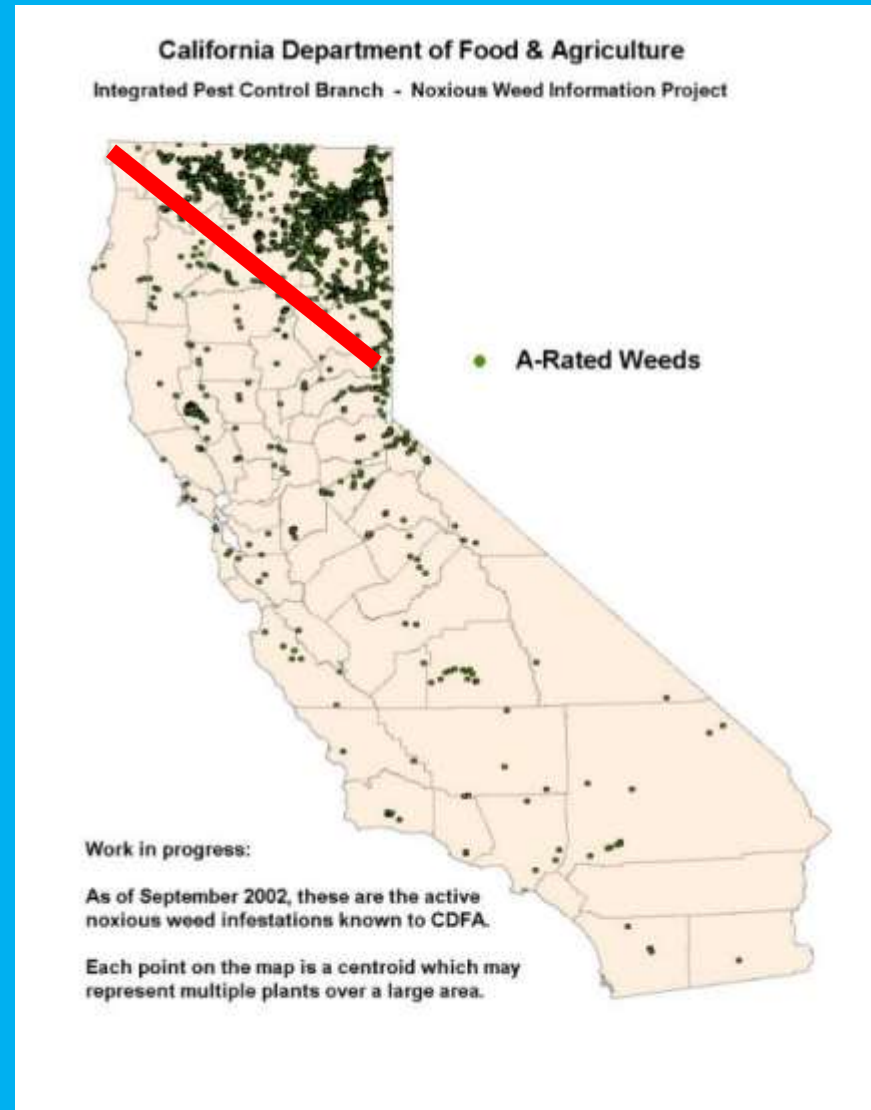
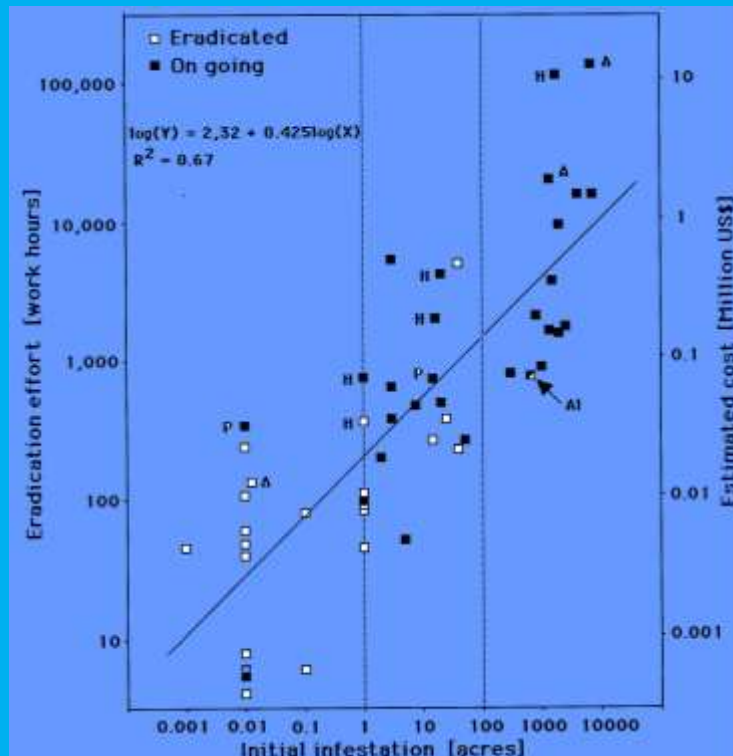
Harmel - *Peganum harmala*

Wormleaf salsola - *Salsola vermiculata*

****Under containment**

Longer Term A-rated Weed Eradication & Containment Projects

CDFA and county Noxious Weed Program detection surveys and small population eradications stopped the spread along high risk corridors



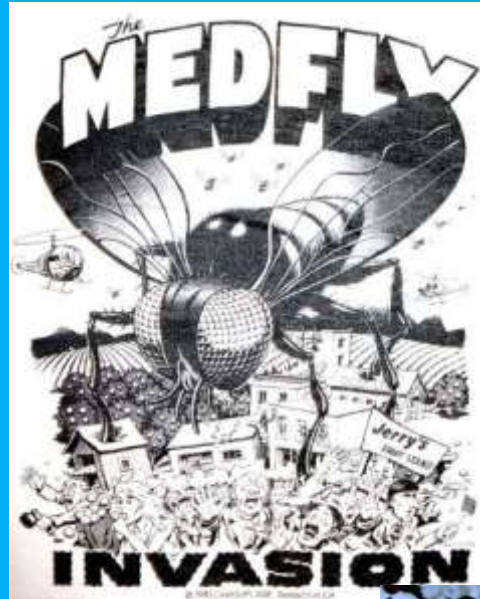
Act 3

Act 3: Fall from Grace 1978-2011



1978

Proposition 13 Jarvis-Gann voter initiative. Lowered county tax revenue by more than 50%. County weed programs slashed.



**1980 & 1981
Los Angeles and Bay Area Mediterranean Fruit Fly Detections.**



County and State Weed Program Decline

The state and county weed eradication programs suffered a series of funding cutbacks and other setbacks accelerating from the late 70's onward.

Some key events:

- 1978 Prop 13 tax rollback hit county weed programs drastically.
- 1980 Medfly program redirected CDFA weed biologists during eradication season.
- 1990 recession led to reduction of CDFA weed biologists by 1/3 (from 20 to 14).
- 2001 recession led to reduction of CDFA weed biologists by 1/3 (14 to 9).
- 2004 cuts led to reduction of CDFA weed biologists by 1/2. (4 positions left)
- 2012 Great Recession state revenue deficit led to complete elimination of Weed Eradication, WMA & Bio Control program.

Why did the weed programs decline and then become abolished?

- Weeds move slow. Even Successful eradication projects take decades to succeed.
- Few eradicable weeds in top agricultural crops.
- Insect pests move fast and hit billion dollar crops.
- Recession driven funding cuts.

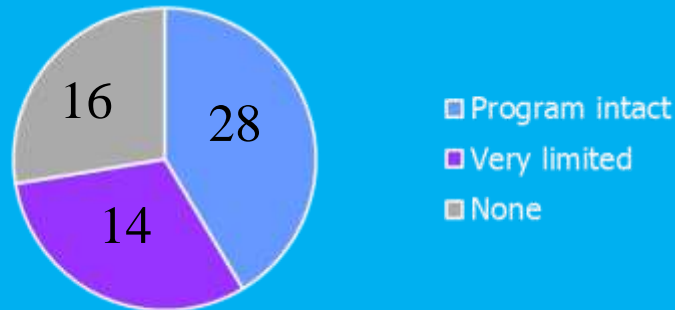
Why did the weed programs decline and then become abolished?

- Noxious Weed Program didn't update and refine priorities (way too many A-rated weeds that were not eradicable were retained as As).
- Program was often not staffed with or led by people who had weed science backgrounds.
- Program didn't document success well. Declared success infrequently – mainly at the county level.
- Mainstream environmental groups in California did not help support the program.
- Anti-Herbicide groups questioned safety of chemical control, lack of CEQA EIR.

Ag Commissioner Weed Survey

(conducted June 2017)

Does County Still Have a Weed
Program (58 counties)?



- Top 3 county weed control program needs:
 - Funding for Commissioner to do rapid response.
 - Funding for Weed Management Areas to partner in rapid response.
 - Training in grant writing & Weed ID.

Weed Management Areas



Food & Ag code 7272 (b) A “Weed Management Area” is a local organization that brings together all landowners, land managers (private, city, county, state, and federal), special districts, and the public in a county or other geographical area for the purpose of coordinating and combining their action and expertise to deal with their common weed control problems.



- Eradication of 2,015 populations of infestations.
- Treatment to 128,421 acres of priority infestations.
- \$5.6 million distributed to 58 counties.
- A 3-to-1 match from outside grant funding and in-kind donations.
- Outreach programs to 88,803 people.
- 6,781 regular participants at weed management area meetings

Noxious Weed Eradication 2

– the Sequel ??

Modest Proposal for a New CDFA/County Noxious Weed Coordination & EDRR Program

- Noxious Weed Statewide Supervisor and Coordinator
- 3 CDFA District Weed Coordination Scientists
- Cost-share Funding for Counties and WMAs to Implement Statewide Eradication Goals
- Weed detection trainings for counties and WMAs
- Weed Biocontrol - Scientist & Outreach