

First field release of the cape-ivy shoot tip-galling fly along the California coast

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Cape-ivy (*Delairea odorata*, Asteraceae)



- Native to coastal regions of South Africa.
- Introduced into CA in the late 1800's as an ornamental.
- Forms dense mats that overwhelm other vegetation.
- Causes significant declines in biodiversity.

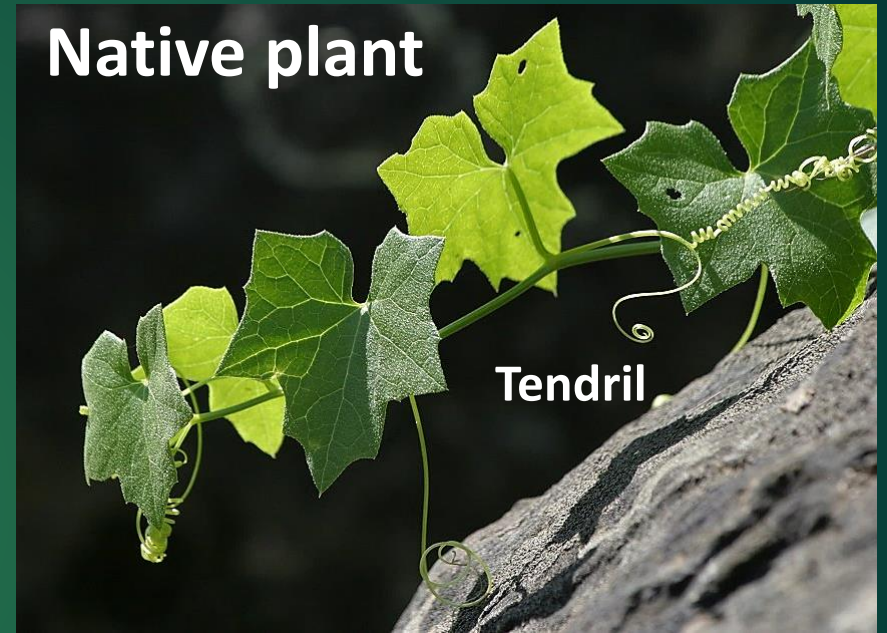
March 2017, Big Sur

Identifying Cape-ivy



Cape-ivy - **Invasive**

- Palmate leaves with 5-9 pointed lobes.
- Smooth stems and leaves.
- No tendrils.
- Clusters of yellow flowers in winter.



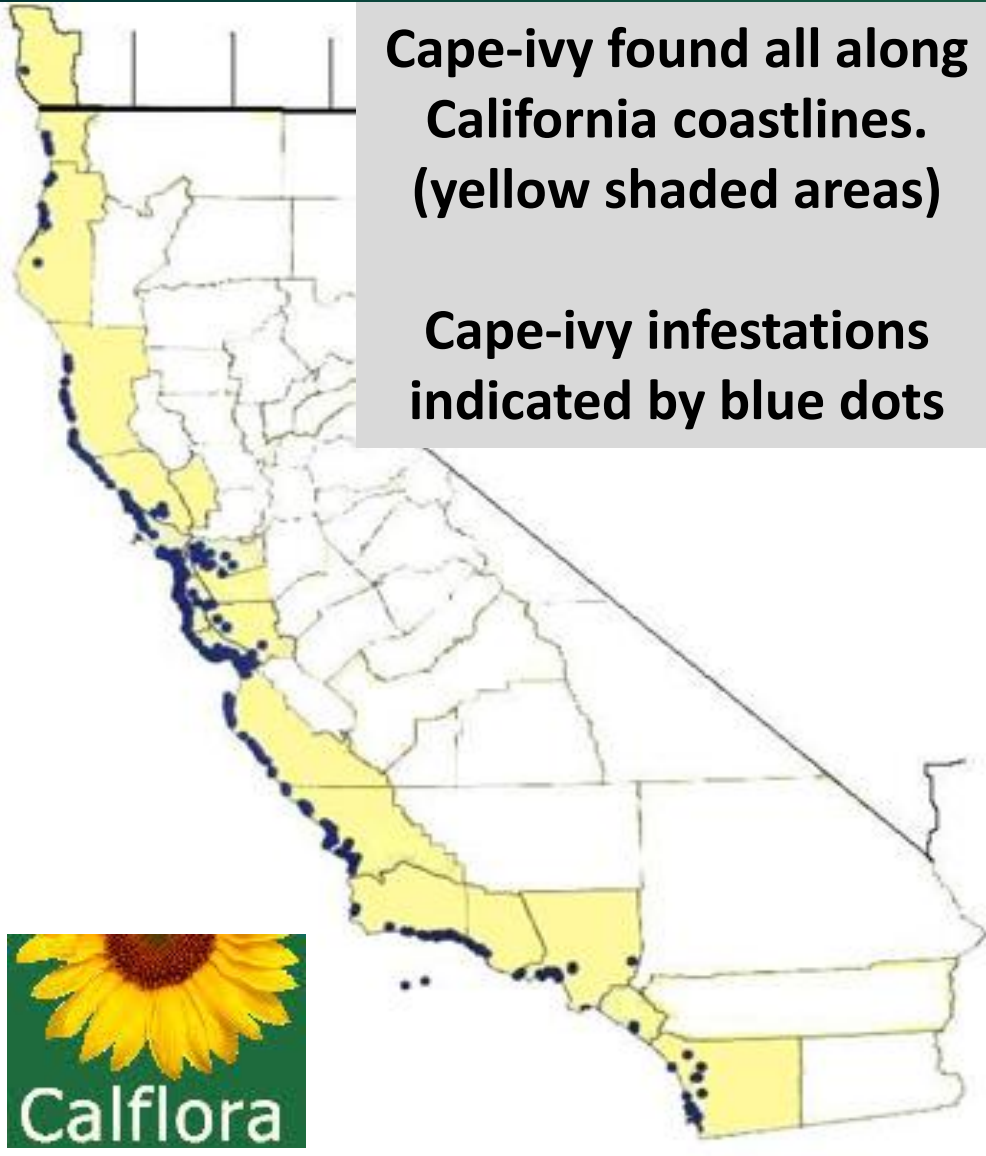
Manroot (*Marah fabaceus*)

- Palmate leaves with 5 pointed lobes.
- Hairy stems and rough leaves.
- Tendrils.
- Prickly spherical fruit.

Cape-ivy distribution in California

Cape-ivy found all along California coastlines. (yellow shaded areas)

Cape-ivy infestations indicated by blue dots



Cape-ivy prefers moist, shady habitats with infrequent freezing temperatures.

- Riparian habitats
- Coastal scrub
- Non-coniferous mountain forests
- Urban/agricultural areas



Morro Bay State Park, SLO



Quarry Park, San Mateo

Current cape-ivy management methods

Manual removal



“Friends of Five Creeks” volunteers hand-pulling cape-ivy in Tilden Park

Herbicide treatments



- Glyphosate
- Triclopyr
- Clopyralid

Cape-ivy shoot tip-galling fly



Parafreutreta regalis
(Tephritidae)

galled plant vs. healthy plant



Cape-ivy
shoot tips



Galled
shoot tips



galled plant

Day 59

11

1C

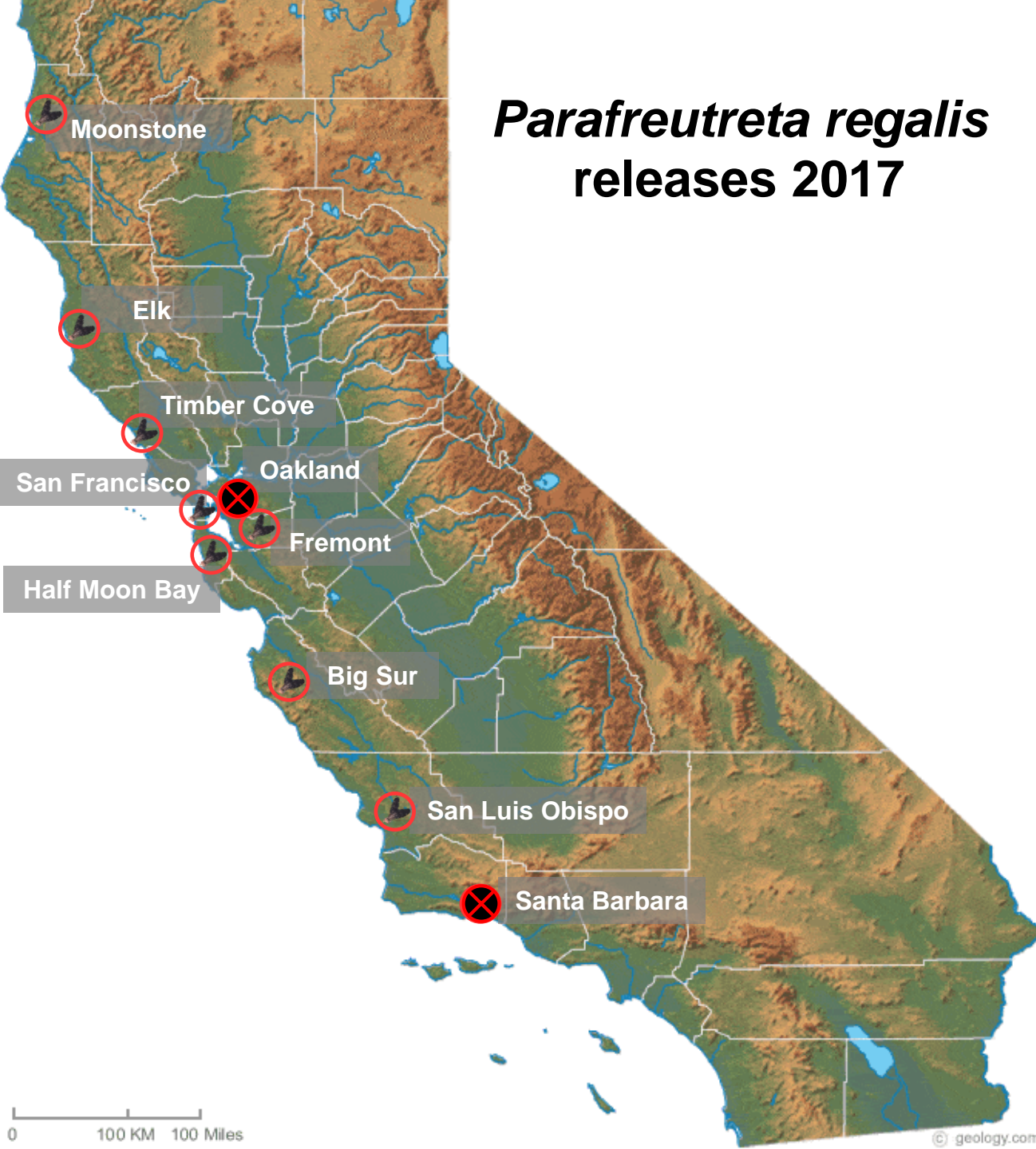
Fly released in field cages

- Flies released in field cages.
- Cage dimensions: 30" × 30" × 15" (L×W×H).
- ~40 females and 40 males released inside.
- Cages are removed after 3-4 weeks.
- Plots surveyed for galls.

Release cage - Timber Cove



Parafreutreta regalis releases 2017



- Moonstone – Humboldt Co.
Trinidad Land Trust
- Elk – Mendocino Co.
Elk Cove Inn & Spa
- Timber Cove – Sonoma Co.
Harrison Ranch
- San Francisco – San Francisco Co.
The Presidio
- ~~Oakland – Alameda Co.
Leona Canyon Park~~
- Fremont – Alameda Co.
Mission Peak Park
- Half Moon Bay – San Mateo Co.
Quarry Park
- Big Sur – Monterey Co.
Glen Deven Ranch
- San Luis Obispo – San Luis Obispo Co.
Land Conservancy of SLO
- ~~Santa Barbara – Santa Barbara Co.
Toro Canyon Park~~

Flies are developing in the field

- Field galls have been found at every release site!
- Larvae are developing inside the galls and producing new adults.
- Currently monitoring sites for signs of 2nd generation galls.



field gall



with window



with exit hole

2017 field gall production

Location	County	Release Date	Total Galls	Galls w/ windows	Galls w/ exit holes	Adults emerged
Timber Cove	Sonoma	May, 23	15	1	13	23
Leona Canyon Park	Alameda	May, 24	14	1	1	1
Mission Peak	Alameda	May, 24	37	5	32	119
Glen Deven (Valley)	Monterey	June, 2	6	1	3	?
Glen Deven (Hillside)	Monterey	June, 2	10	3	4	?
The Presidio	San Francisco	June, 12	22	6	?	?
Land Conservancy SLO	San Luis Obispo	July, 19	12	4	8	?
Toro Canyon Park	Santa Barbara	July, 20	2	0	0	0
Quarry Park	San Mateo	July, 26	10	5	?	?
Elk Cove Inn	Mendocino	August, 10	16	4	?	?
Moonstone	Humboldt	August, 11	3	0	?	?

- Total field galls = 147
- Average galls / site = 13.4

Take home messages

- Galling fly released at 10 locations along the CA coastline.
- Can reproduce and complete its life cycle in the field.
- Showing signs of initial establishment.
- No data on field reproduction of succeeding generations – yet!

Acknowledgements

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Cooperators



Elk Cove Inn

