San Diego WMA

Early Detection and Rapid Response (EDRR)

San Diego County, Department of Agriculture Weights & Measures (AWM)
and Nature Collective

Funded by: SANDAG Transnet Funding & CDFA

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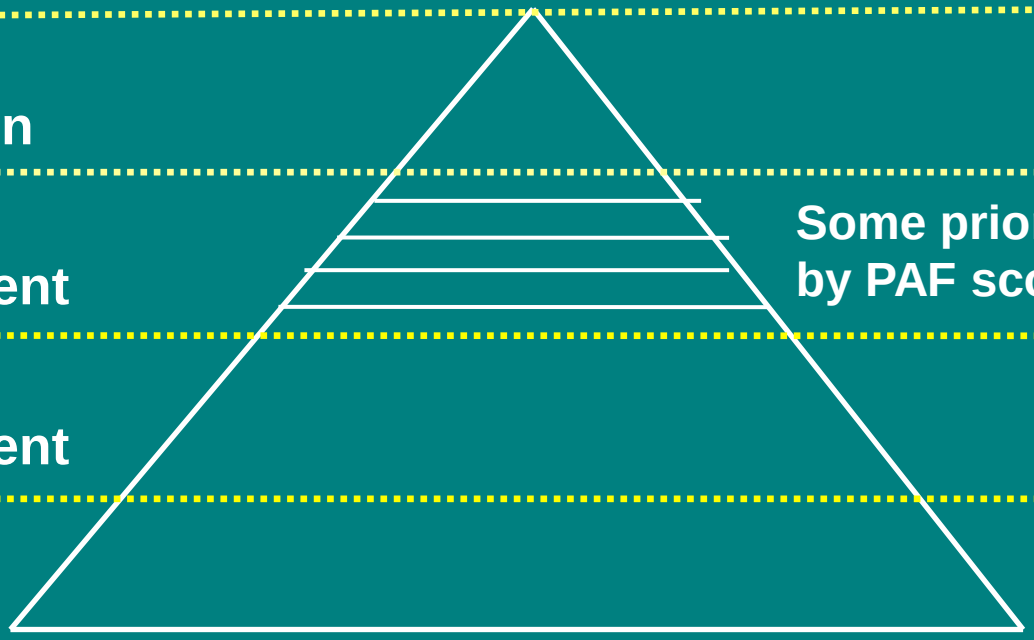
Regional Impact Assessment and Plan

Purpose: Assess severity of impacts and management feasibility of priority species at the regional level to establish management priorities

- Science-based Assessments
  - Plant Assessment Forms (PAFs)
    - Ecological impacts
    - Invasiveness
    - Distribution/abundance

Management Levels



Level 1- Surveillance

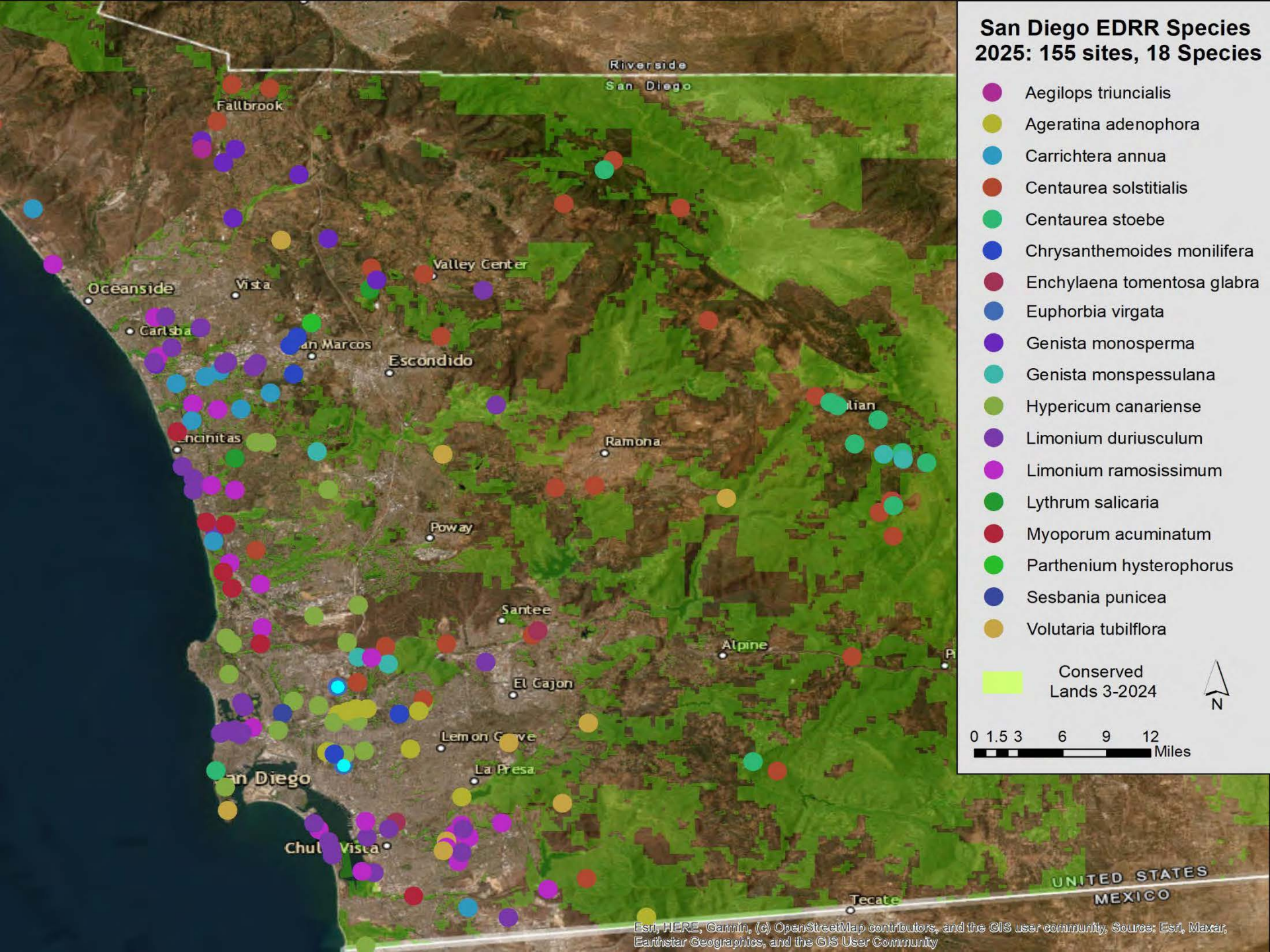
Level 2- Eradication

Level 3- Containment

Level 4- Management

Level 5- Suppression

Report new plant sightings to iNaturalist


San Diego EDRR Species
2025: 155 sites, 18 Species
Aegilops triuncialis
Ageratina adenophora
Carrichtera annua
Centaurea solstitialis
Centaurea stoebe
Chrysanthemoides monilifera
Enchylaena tomentosa glabra
Euphorbia virgata
Genista monosperma
Genista monspessulana
Hypericum canariense
Limonium duriusculum
Limonium ramosissimum
Lythrum salicaria
Myoporum acuminatum
Parthenium hysterophorus
Sesbania punicea
Volutaria tubilflora
Conserved Lands 3-2024
N
0 1.5 3 6 9 12
Miles
Riverside
San Diego
Fallbrook
Oceanside
Vista
Valley Center
Escondido
Ramona
Poway
Santee
Alpine
El Cajon
La Presa
Chula Vista
Tecate
UNITED STATES
MEXICO
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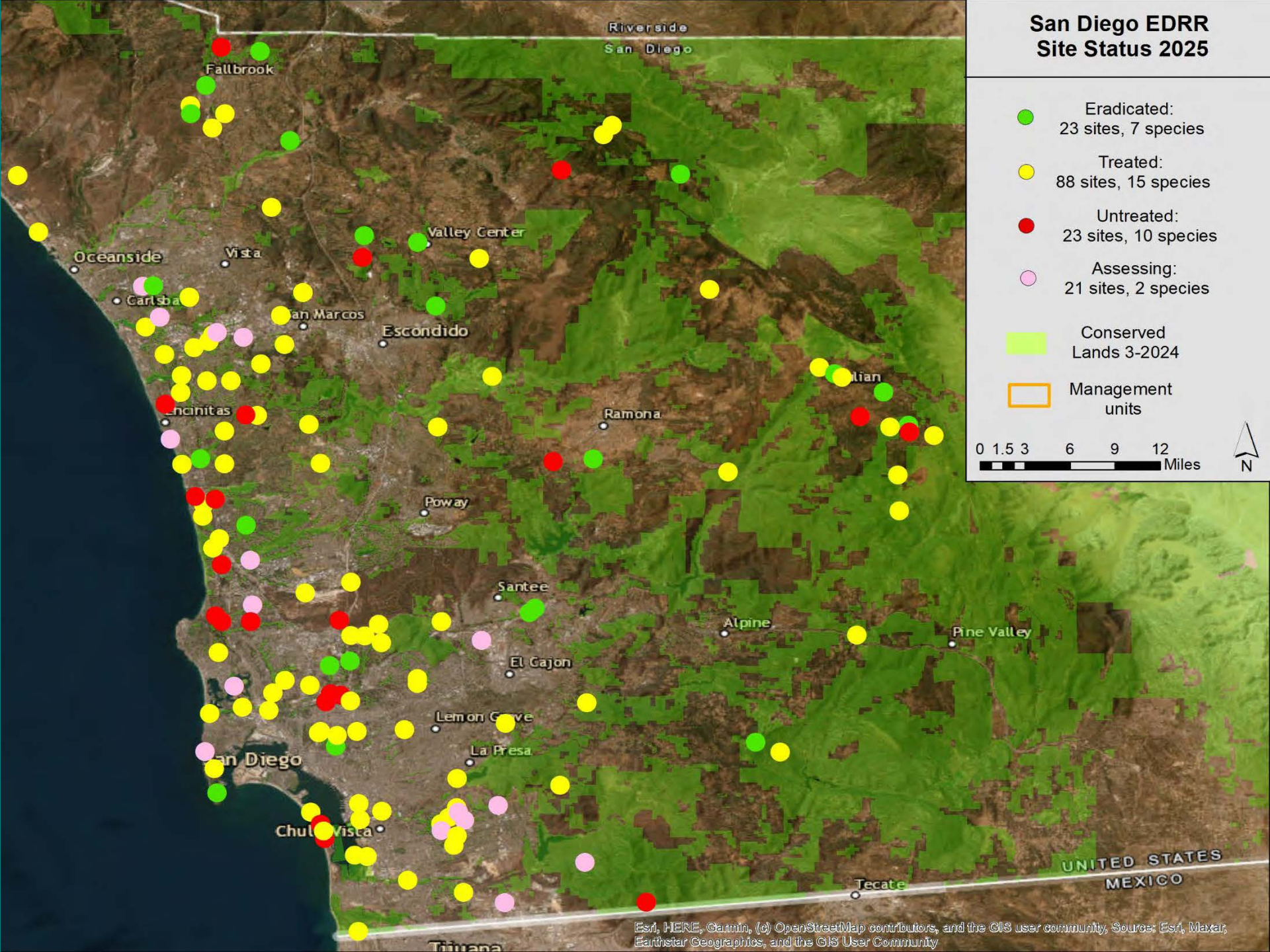
San Diego EDRR
Site Status 2025
Eradicated:
23 sites, 7 species
Treated:
88 sites, 15 species
Untreated:
23 sites, 10 species
Assessing:
21 sites, 2 species
Conserved
Lands 3-2024
Management
units
0 1.5 3 6 9 12
Miles
N
Riverside
San Diego
Fallbrook
Oceanside
Vista
Valley Center
Escondido
Ramona
Poway
Santee
Alpine
Pine Valley
El Cajon
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Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Successes:

- **Extensive work treating sites for: Santa Maria fever few, yellow star thistle, spotted knapweed, bridal broom, barbed goat grass, French broom, Canary Island St John's wort, boneseed, Algerian and European sea lavender, eupatory, rattlebox, Volutaria, and Ward's weed.**
- **Quarterly meetings and updates: lead by Chris McDonald, typically 20-30 attend**
- **Annual meeting: 100-150 attend**
- **Good network of iNaturalist reports**

Struggles:

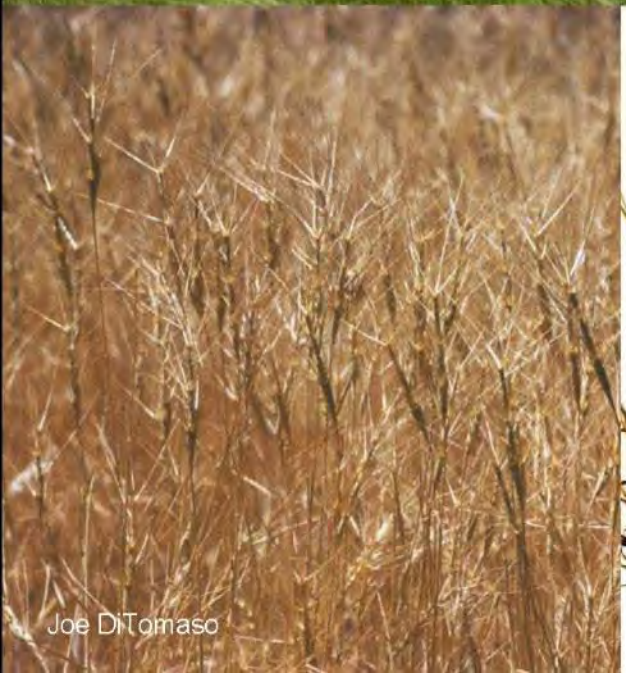
- **Seedbank is quite extensive and persistent for several species (Ward's weed, *Limonium, Hypericum*), pre-emergent can help.**
- **No pre-emergent has been found for *Euphorbia terracina (suspended work)* or barbed goatgrass (still working on).**
- **Weather variation- very late rain in 2025 (small annuals) vs very early rains and very wet year in 2024.**

Invasive Non-Native:
Barbed goat grass
(*Aegilops triuncialis*)

Description: annual grass, 17-45cm ht, leaf blade 1.5-7cm, 2-3mm wide; infloresence 2-5.5c, spike like; fertile spikelet 2-3 awned, dital spikelet 3-awned or 1-awned with 2 lateral teeth.

Ecology: rangelands, grasslands, and oak woodlands. Cattle/rangelands are areas of greatest risk for introduction/invasion.

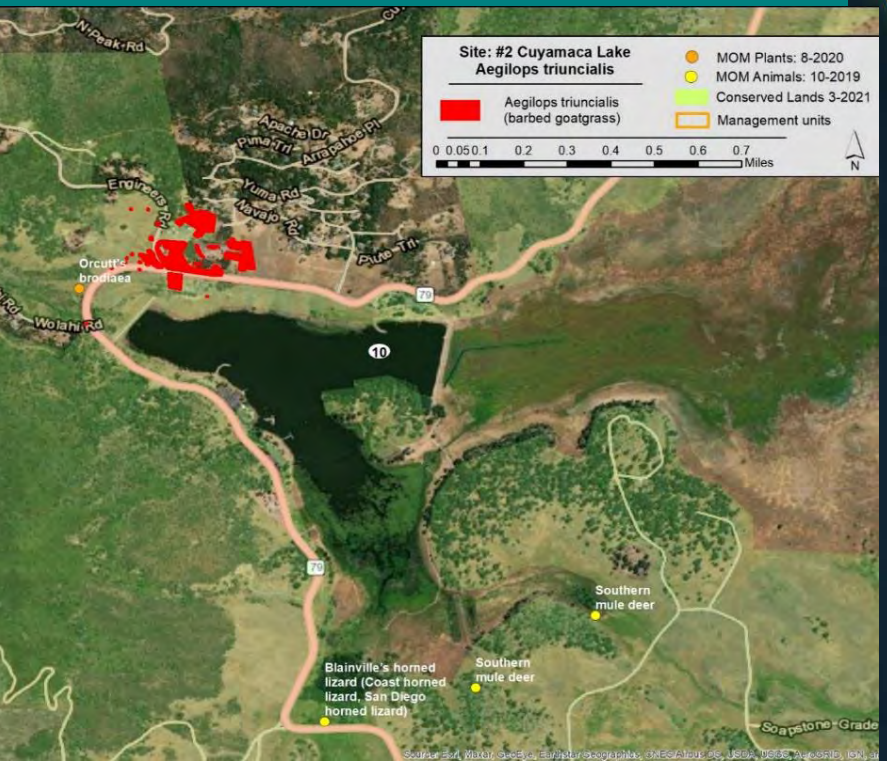
Similar to (see back): Three-awned goat grass *Aegilops neglecta* (non-native)



Barbed Goatgrass:

1 active site,
1 eradicated site

- **No new reports**



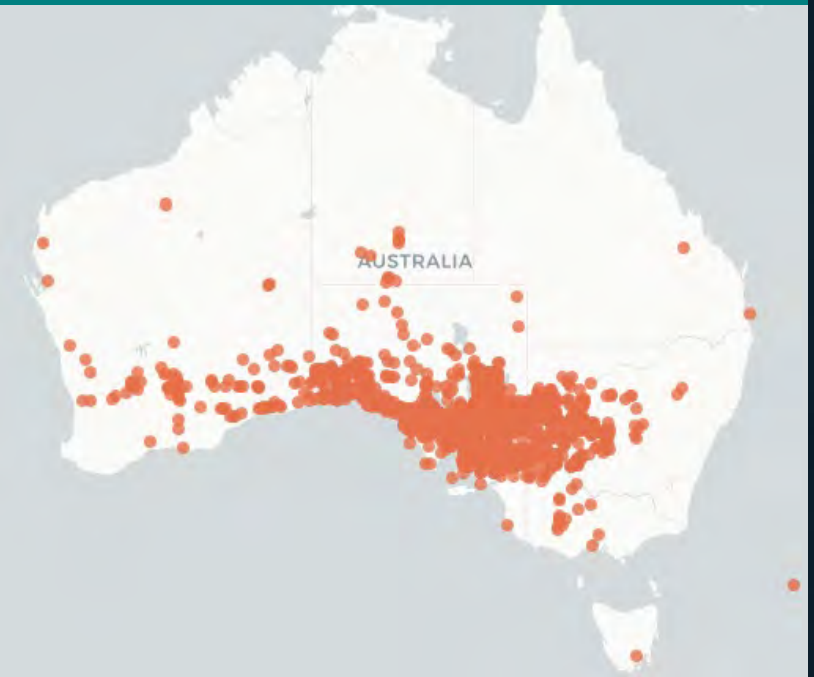
Invasive Non-Native:
Ward's weed
(*Carrichtera annua*)

Description: Plant size varies from small to multi-branched 0.5m ht; Stems branched basally and distally; form similar to a small tumbleweed; Basal leaves: petiole 1–4.5 cm; blade 3-6 lobes each side, 1.5-4 cm, terminal lobe linear to oblong, margins entire. Flowers white or creamy yellow petals 6.5-8 x 1-2 mm ; Fruits short reflexed pods.

Ecology: Plant size varies greatly depending on environmental conditions; prefers disturbed areas, but readily invades between and under shrubs; coastal sage, maritime chaparral, grasslands

Ward’s Weed: 9 sites

- All being worked on
- One new site
- Two close to eradication



Poinsettia Lane:

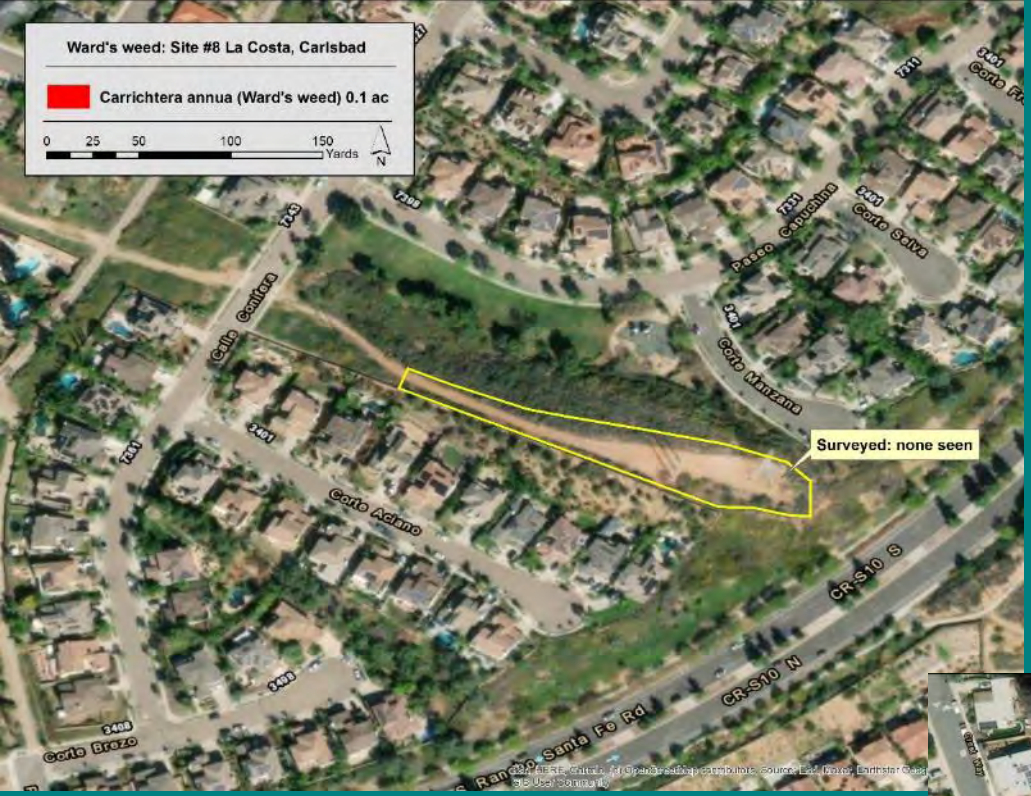
Newly discovered site 2024 1.0 ac

Poinsettia Lane:

Treated with pre-emergent 1-2025

Almost no plants in spring 2025

Small missed area, 1,000’s of seedlings



La Costa:

Eradicated? Nope ☹

- No plants 2023 or 2024
- 50 plants 2025

Crest Canyon, Del Mar:

Nearly eradicated:

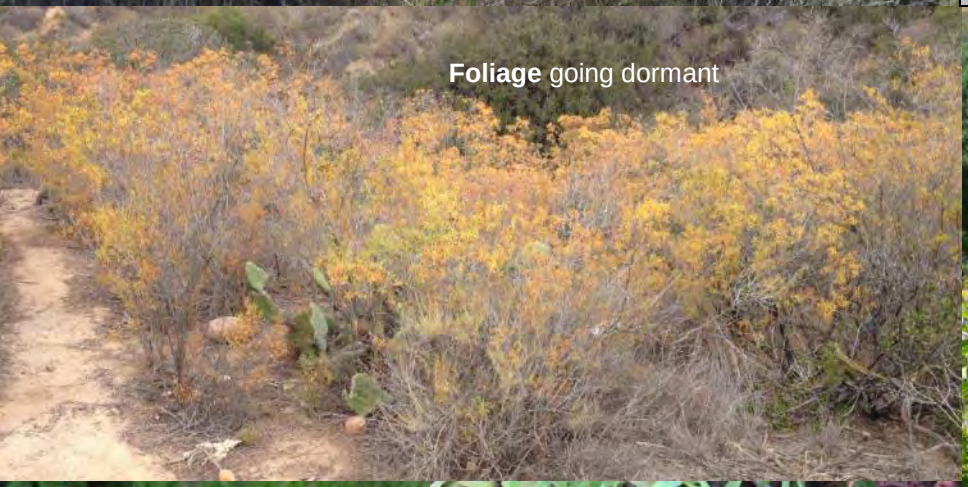
- 9 plants 2024
- 15 plants 2025


Ward's weed: Treatment Teams
Treat area: Ward's weed 1-50% cover
N
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles
ACS Work Area
County Work Area
Lionshead Ave
Palomar Airport Rd
Melrose Dr
Poinsettia Ln
Tiger Run Ct
Rancho Acampo
Rancho del Canon
Via Conquistador
Gateway Rd
Leighton Cir
Town Garden Rd
Rancho Compañero
Rancho Milagro
Rancho Rio Chico
Ascot Ave
Greenhaven Dr
Huntington Dr
Paseo Colina
Breakfast Way
Peppertree Way

Invasive Non-Native:
Canary Island St. John's Wort
(*Hypericum canariense*)

Description: multi-stemmed perennial rhizomatous shrub up to 3m ht; leaves opposite, waxy, lanceolate and bright green; terminal clusters of yellow flowers; leaves yellow early in season and generally drop in summer; capsule fruits dry and dehisce tiny seeds.

Ecology: disturbed areas, coastal sage scrub and grassland habitats. Can form dense stands that exclude native species.



Hypericum canariense: Canary Island St John's Wort

19 sites:
13 under treatment,
6 sites untreated

- control at sites appears good, but many seedlings, need better seedbank control

Suppression feasible, but some sites are very steep.

Recently reported site:

Kate Sessions City SD Park

New work site:

Escondido Creek

Invasive Non-Native:
European Sea Lavender
(*Limonium duriusculum*)

Description: perennial herb 6-12” (20-30 cm) tall in flower, lower leaves in dense rosettes ½ - 1 ½” (1-4 cm) long, 1/8 - ¼” (5-9 mm) wide, rounded. Flower: evenly distributed at branch tip, small < ¼” (7mm), pale pink .

Ecology: salt tolerant, coastal salt marsh as well as riparian habitat (even grassland & disturbed areas).

Similar to (see back): Algerian sea lavender (non-native) has narrower leaves and flowers are closer together. Perez’s sea lavender (common non-native used in landscaping) is a larger species with wider, longer, bright green leaves. California sea lavender (native) has longer leaves and stouter taproot.

Cal-IPC

SCWRP

Report sightings to: iNaturalist or Calflora

Limonium duriusculum: European sea lavender

21 sites:
8 under AWM treatment,
6 treated by others,
1 eradicated,
6 untreated (some new)

Control feasible, but upland sources likely

Eradication may not be realistic on all watersheds


Limonium duriusculum:
Site #4, Chula Vista Nature Reserve/ Port SD
Limonium duriusculm
(European sea lavender)
Survey lines
N
0 25 50 100 150 200 250 300 350 400
Yards
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community


Limonium duriusculum:
Site #10 Paseo Ranchero, Chula Vista
Limonium duriusculm
(European sea lavander)
Survey lines
0 25 50 100 150 200
Yards
N

Invasive Non-Native:
Algerian Sea Lavender
(*Limonium ramosissimum*)

Description: perennial herb 6-12” (20-50 cm) tall in flower, lower leaves in dense rosettes 1-4” (3-10 cm) long, ¼–¾” (7-20 mm) wide, spoon shaped, tip acute to rounded. Flower: delicate multi-branched, tight clusters. Flower: calyx (outer flower part) white < ¼” (4-6mm), corolla (inner flower part) pale pink to purple < ¼” (5-7 mm).

Ecology: salt-tolerant, coastal salt marsh as well as riparian habitat (even grassland & disturbed areas).

Similar to (see back): European sea lavender (non-native) has rounded leaves and flowers are evenly spaced. Perez’s sea lavender (common non-native used in landscaping) is a larger species with wider, longer, bright green leaves. California sea lavender (native) has longer leaves and stouter taproot.

SCWRP

Report sightings to: iNaturalist or Calflora

Cal-IPC

Limonium ramosissimum: Algerian sea lavender

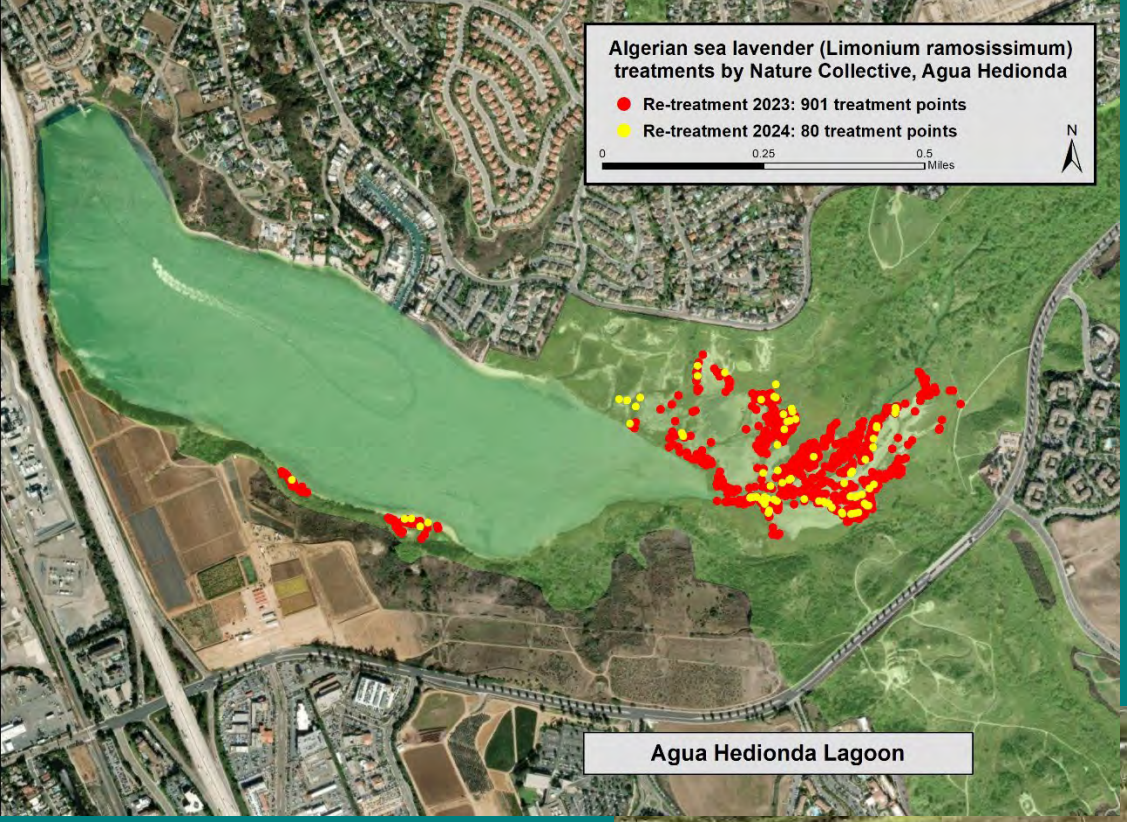
21 sites:
7 under AWM treatment,
7 treated by others,
1 eradicated,
6 untreated (some new)

Control feasible, but upland sources likely

Eradication may not be realistic on all watersheds

Algerian sea lavender:

Agua Hedionda



Invasive Non-Native:
Volutaria knapweed
(*Volutaria tubuliflora*)


Photo by Ron Vanderhoff


Photos by Tom Chester

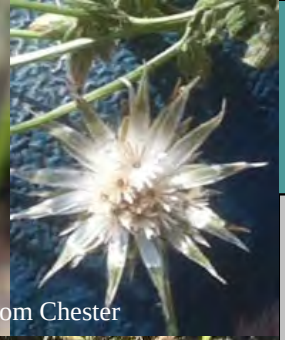



Photo by Jason Giessow

Description: Stem: < 15 dm. **Leaf:**1-2 pinnately lobed or divided, lobes +/- dentate, lobes angled forward. I**nflorescence:** heads solitary or in small clusters; phyllaries with wide flat flexible spine tips 1.5--2 mm, inner with membranous, spineless tips. **Flower:** corolla of sterile flower +/- 10 mm; corolla of fertile flower 5.5--6 mm, +/- white. **Fruit:** 3--3.5 mm, pale gray-brown, ascending-hairy, faces not pitted.

Ecology: Disturbed areas, non-native grassland, into coastal sage scrub

Similar to (see back): *Centaurea mellitensis* (tocalote), *Centaurea maculosa* (spotted knapweed)

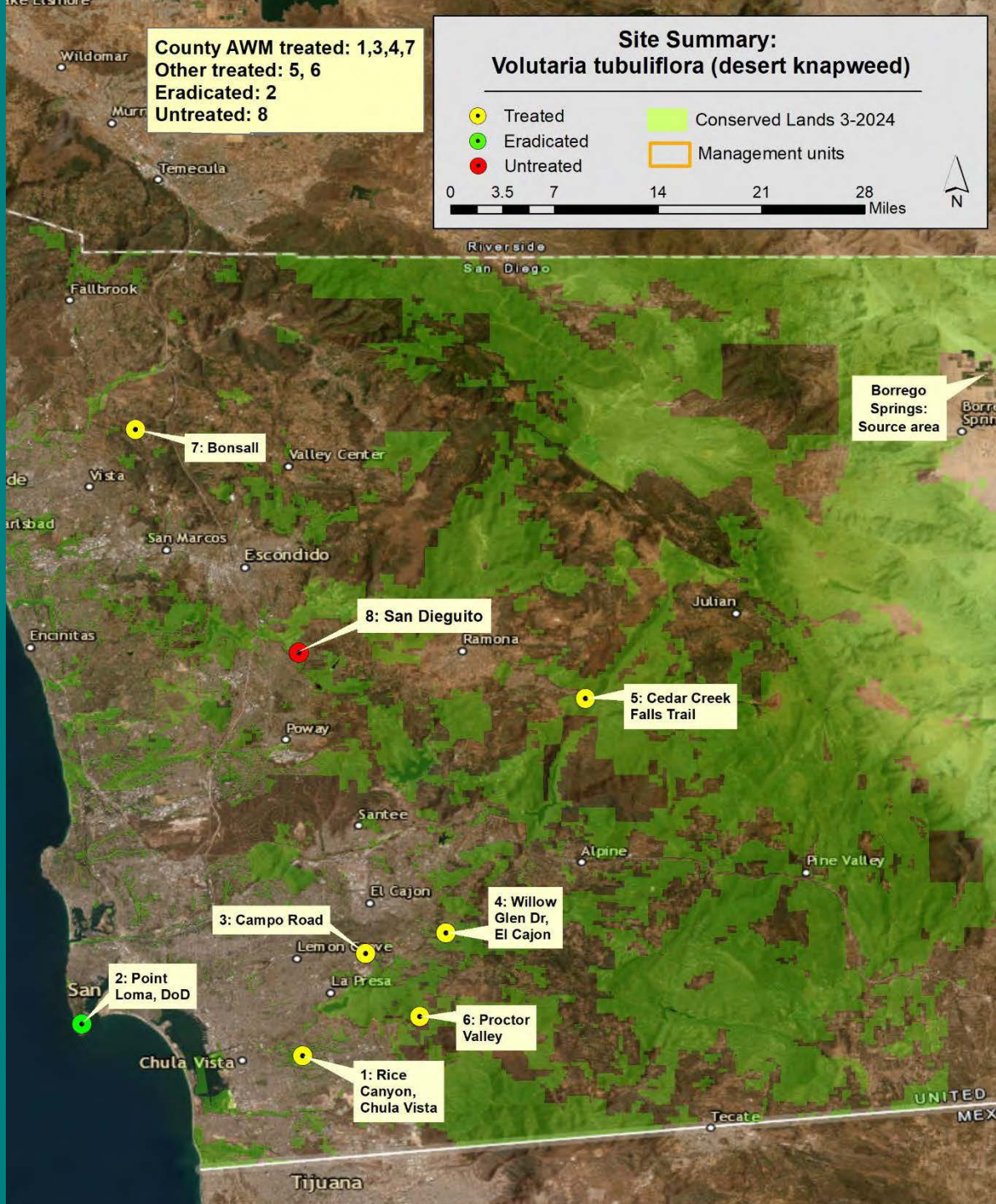

Photo by Jason Giessow


Photos by Ron Vanderhoff

Desert Knapweed: 8 sites

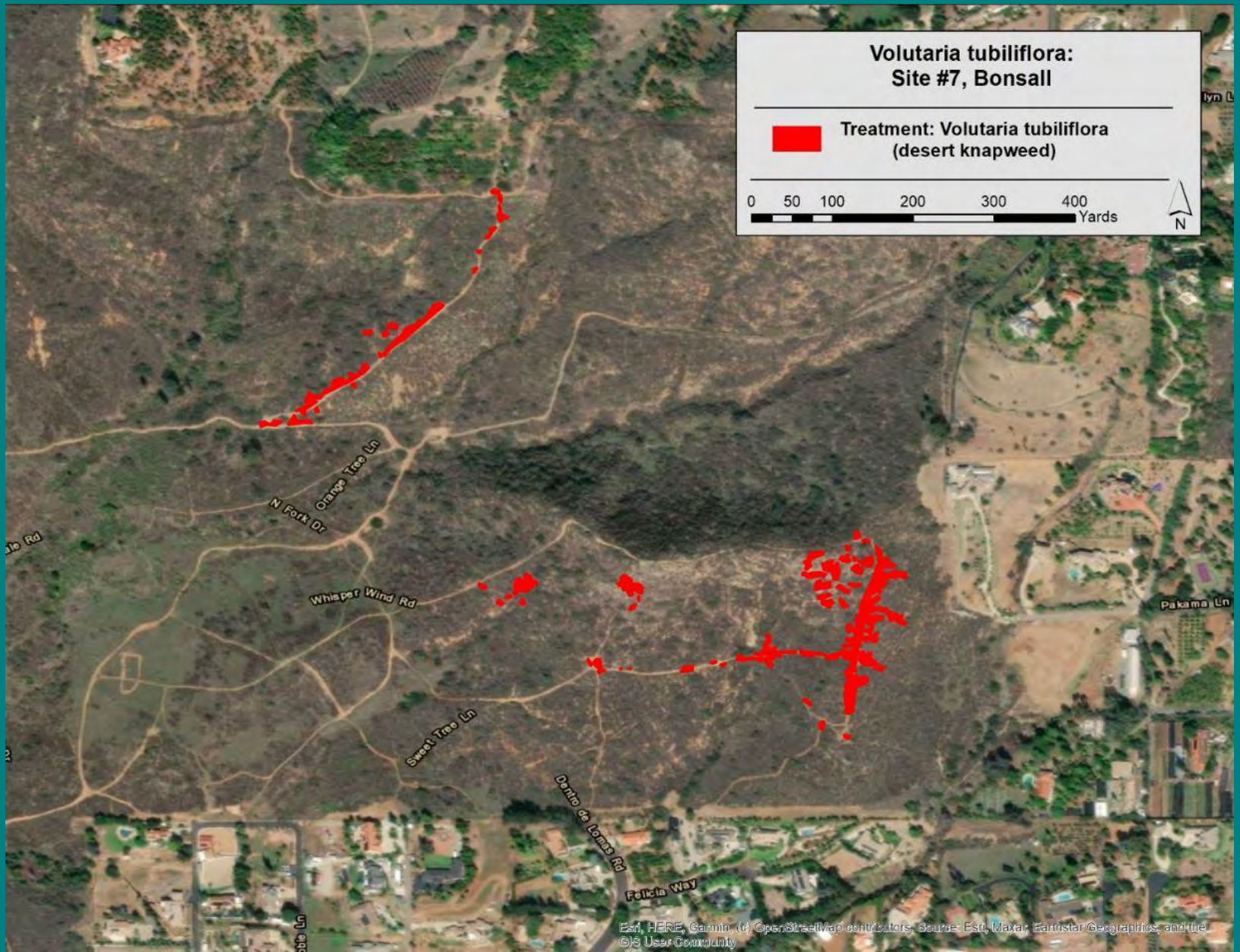
- 1 new site in 2025
(1 in 2024, 3 in 2023)

6 Treated, 1 eradicated,
1 untreated



2024 photos

Newer site: Bonsall, treated by County AWM:
2023: >7,000 plants 2025: 900 plants



Invasive Non-Native:
Stinknet
(*Oncosiphon piluliferum*)


Photo by Anna Bennett


Photos by Ron Vanderhoff

Description: Pungently scented. Pls 15-45(70) cm. Leaves 1-4+cm, alternate, petioled or sessile; 2-3 pinnately dissected; segments linear, with resin glands. Inflorescence: 1–4 yellow discoid heads in cyme like clusters.

Ecology: Disturbed areas, uplands (grass/scrub), riparian.

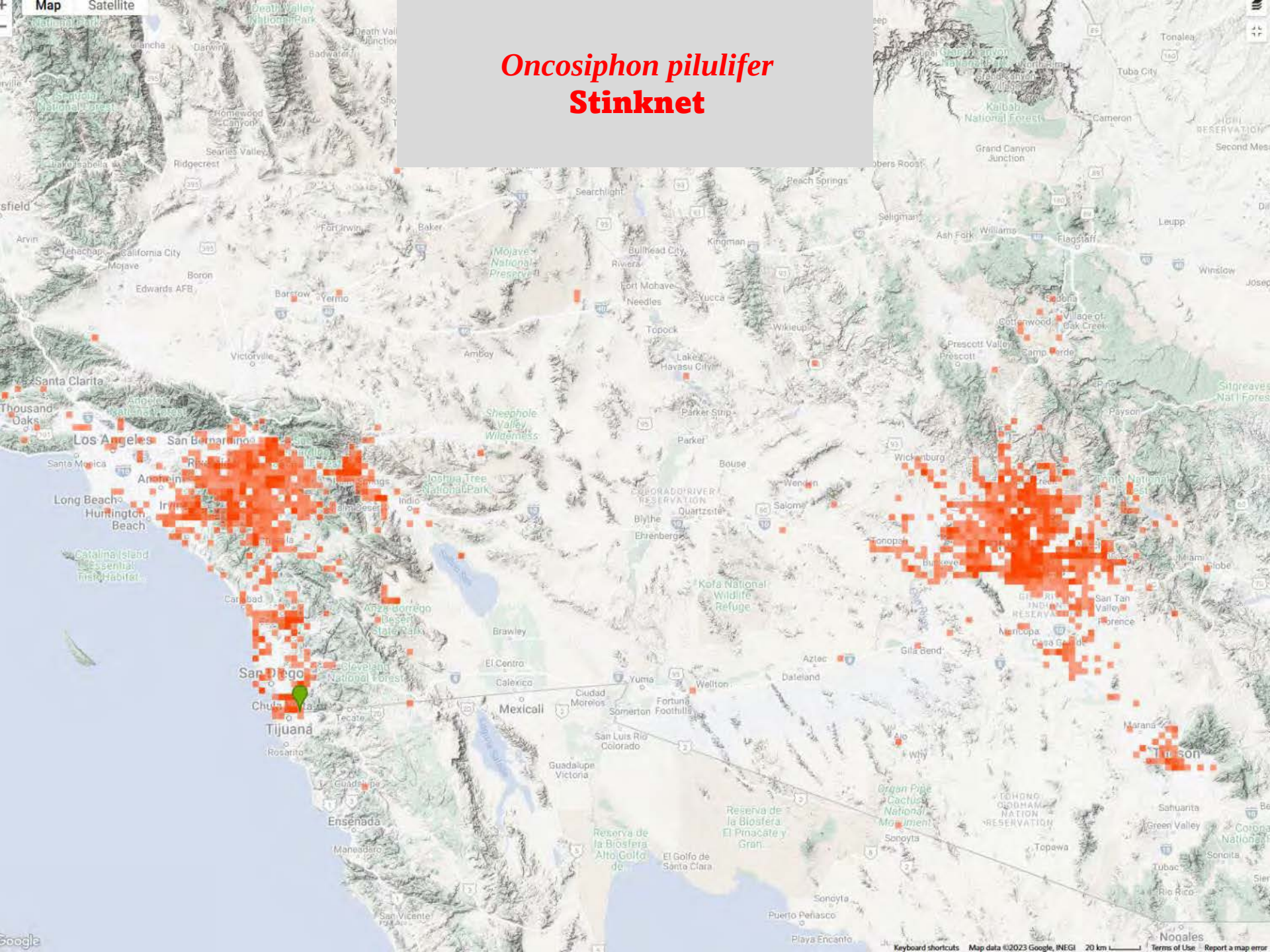
Similar to (see back): *Hemizona fasciculatum* (tarweed), *Cotula spp.* (brass buttons), *Erodium* spp. when plants are young (stork's bill).


Photo by Ron Vanderhoff


Photo by Keir Morse


Photo by Ron Vanderhoff

Report sightings to: iNaturalist or Calflora



Oncosiphon pilulifer

Stinknet

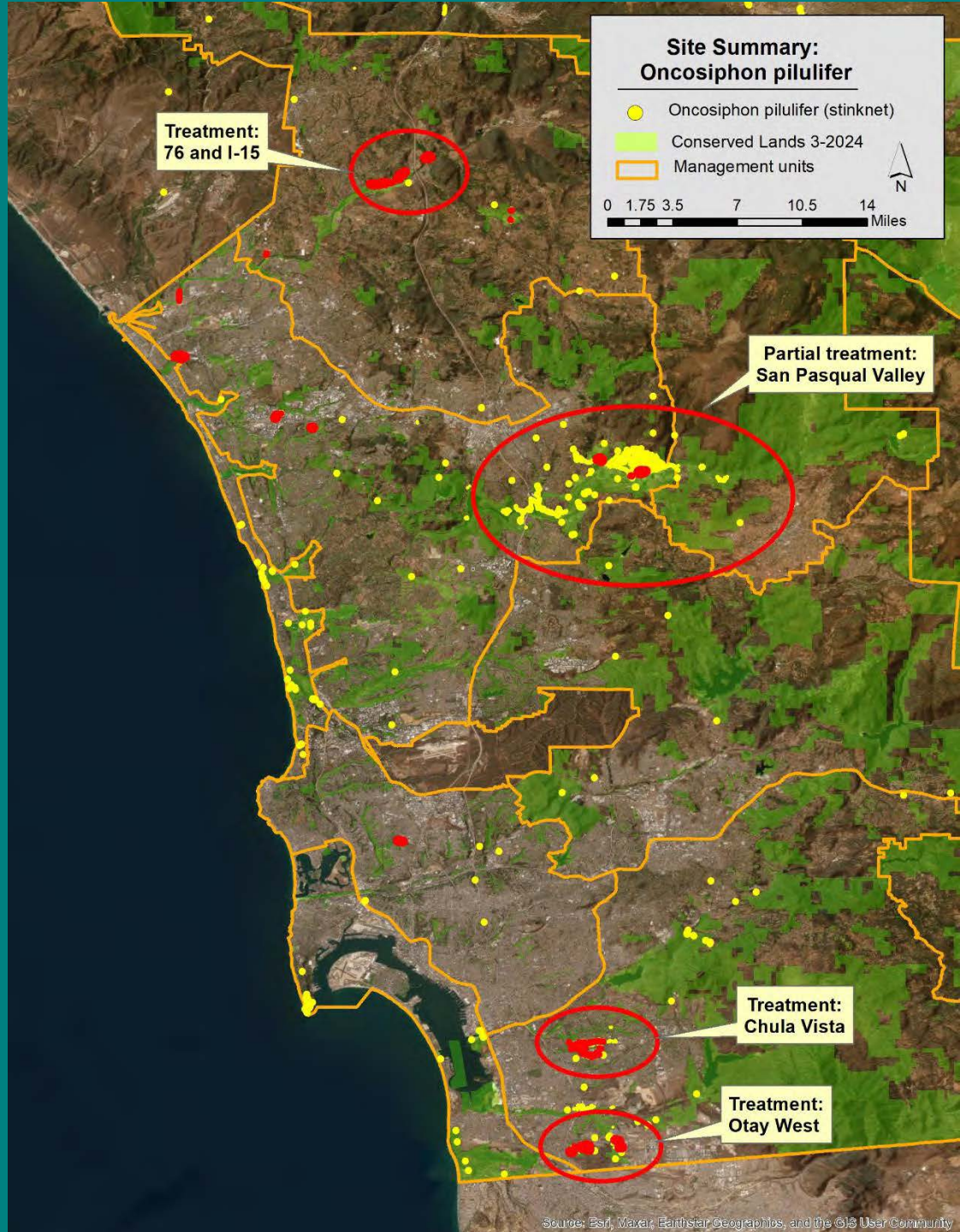
Containment

Stinknet
Oncosiphon pilulifer

Continued control/containment at many sites

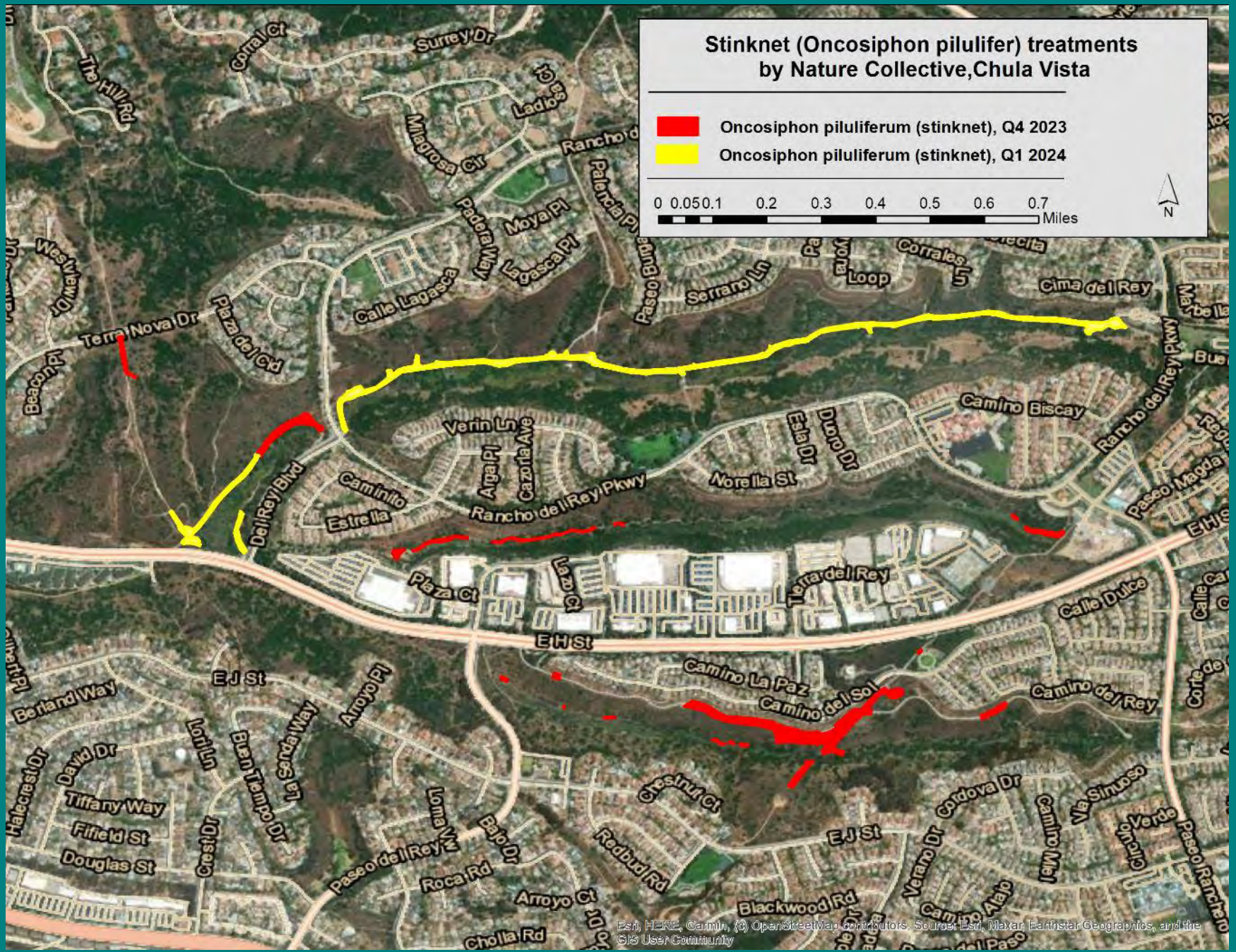
Hand pulled and used pre + post

Lead:
Nature Collective + AWM



Dead plants still standing in March 2025, seedlings very small

Re-treated all areas in 2025, City of Chula Vista



Pre-emergent was very effective for 1 year,
good suppression for 2 years