Emergent Invasive Plant Program

A CNPS Chapter model for early detection and effective response to emergent invasive weeds





Many counties in California lack an effective process to identify, communicate on and coordinate the local management of emergent invasive plant species.

Recent state and local funding cuts for regional programs such as Weed Management Areas have only worsened the situation.



Advantages of Regional CNPS Leadership:

- Unencumbered by boundaries, jurisdictions or procedural constraints
- Expert knowledge of the issues and plants
- Existing organizational structure
- Existing partnerships with land managers and agencies
- Large body of members and volunteers
- Ability to act quickly



Constraints of Regional CNPS:

- Very little budget
- Volunteer driven
- Advice, but with no authority
- Challenges dealing with jurisdictions



OC CNPS' response is to focus specifically on Emergent Invasive Plants

- Newly arrived in the region or of limited distribution
- High potential for invasiveness
- High probability of significant ecological disruption



Rubus armeniacus, CalWeedMapper

Our Emergent Invasives Plant List is dynamic and kept to a manageable size

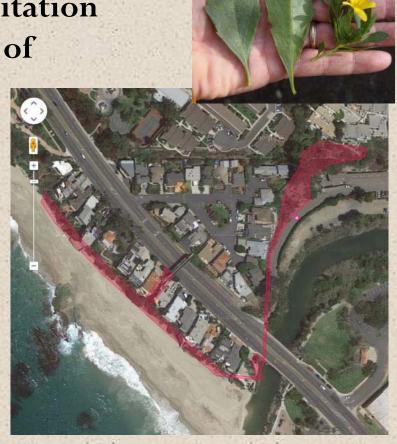


Our Goal:

The early detection and facilitation of the effective management of specific emergent invasive

weeds within our region

- Early detection
- Communication
- Management support leading to a Rapid Response
- On-going monitoring



Chrysanthemoides monilifera ssp. monilifera, Aliso Creek



Early Detection

Trained "eyes on the ground" to accurately report new populations of high priority emergent weed species



Hypericum canariense



Communication

With our network of partners; including land managers, agencies, support groups, contractors, our members and the public





























Management Support of Rapid Response

Coordination with land managers, land owners, support groups and potential labor forces

Labor where needed to remove populations that may otherwise not be managed.



Brassica tournifortii, Loma Ridge



Centaurea solstitialis, Silverado Canyon



The Plants:

- A dynamic list
- Plant candidates suggested
- Must qualify as emergent
- A data driven review process, using scoring
- Highest priority plants are "Red Alert"



Senecio linearifolius var. linearifolius



Knowledge Base for Plant Selection:

- Local knowledge
 - Land managers
 - Botanical consultants
 - Active field experts
 - Other published and unpublished data













Scoring Protocol:

- Abundance
- Distribution
- Ecological Impact
- Rate of Spread
- Variables:
 - Cal-IPC ranking/alert
 - ID difficulty

Scientific Name	Source	OC-CNPS Emergent List	Current Abundance and Distribution				Ecological Impact	Rate of spread		Modifiers		
			# OC Pops	Abund. Ranking	Known OC Quads	Distribution Ranking	Ability to Invade Native Habitat Ranking	Reproductive Rate and Dispersal Ranking	Raw Ranking	Cal-IPC Ranking/Alert	ID Difficulty	Final Score
Aegilops triuncialis	Starr Ranch	Candidate	1	1	1	1	1	1	1	1	0	1.00
Dittrichia graveolens	Local knowledge	2015	4	1	2	1	1	1	1	1	0	1.00
Ludwigia hexapetala	Local knowledge	2015	1	1	1	1	1	1	1	1	0	1.00
Volutaria vubuliflora	Local knowledge	2015	1	1	1	1	1	1	1	1	0	1.00
Hypericum canariense	Local knowledge	2015	3	1	1	1	1	2	1	1	0	1.25
Euphorbia terracina	SD Emergent	Candidate	1	1	1	1	2	2	2	1	0	1.50
Sesbania punicea	SD Emergent	Candidate	1	1	1	1	2	2	2	1	0	1.50
Centaurea solstitialis	Local knowledge	2015	11	3	10	2	1	1	2	1	0	1.75
Delairea odorata	Local knowledge	2015	14	3	9	2	1	1	2	1	0	1.75
Lepidium latifolium	Local knowledge	2015	13	3	9	2	1	1	2	1	0	1.75
Asphodelus fistulosus	Local knowledge	2015	10	2	4	1	3	2	2	1	0	2.00
Brassica tournefortii	Local knowledge	2015	15	3	16	3	1	1	2	1	0	2.00
Emex spinosa	Local knowledge	2015	8	2	6	2	2	2	2	1	0	2.00
Limonium duriusculum	Test	Candidate	4	1	3	1	1	1	1	0	0	2.00
Hedera helix	Test	Candidate	8	2	6	2	2	2	2	1	0	2.00
Rubus armeniacus	Local knowledge	2015	6	2	1	1	1	1	1	0	0	2.25
Ageratina adenophora	Test	Candidate	5	1	5	1	1	2	1	0	0	2.25
Oncosiphon piluliferum	Test	Candidate	4	1	4	1	2	1	1	0	0	2.25
Phraamites australis	Test	Candidate	2	1	1	1	1	2	1	0	0	2.25
Chrysanthemoides monilifera	Local knowledge	2015	1	1	1	1	2	2	2	0	0	2.50
Acroptilon repens	Test	Candidate	6	2	4	1	2	1	2	0	0	2.50
Dipsacus fullonum	Test	Candidate	1	1	1	1	2	2	2	0	0	2.50
Phytolacca americana	Test	Candidate	1	1	1	1	2	2	2	0	0	2.50
Salvinia molesta	Test	Candidate	2	1	2	1	2	2	2	1	1	2.50
Iris pseudacorus	SD Emergent	Candidate	1	1	1	1	2	2	2	0	0	2.50
Lepidium draba	Local knowledge	2015	7	2	5	1	2	2	2	0	0	2.75
Salpichroa origanifolia	Local knowledge	2015	6	2	4	1	2	2	2	0	0	2.75
Senecia linearifolius	Local knowledge	2015	9	2	2	1	2	2	2	0	0	2.75
Elaeagnus angustifolia	Test	Candidate	3	1	3	1	2	3	2	0	0	2.75
Araujia sericifera	Local knowledge	2015	7	2	5	1	3	2	2	0	0	3.00
Ehrharta calycina	Local knowledge	2015	4	1	2	1	1	1	1	0	1	3.00
Robinia pseudoacacia	Local knowledge	2015	6	2	9	2	2	2	2	0	0	3.00
Limonium ramosissimum	SD Emergent	Candidate	9	1	0	1	1	1	1	0	1	3.00
Kochia scoparia	Local knowledge	2015	2	1	1	1	2	2	2	0	1	3.50
Eucalyptus camaldulensis	Test	Candidate	12	3	8	2	2	3	3	0	0	3,50

A data driven score - using objective measurements













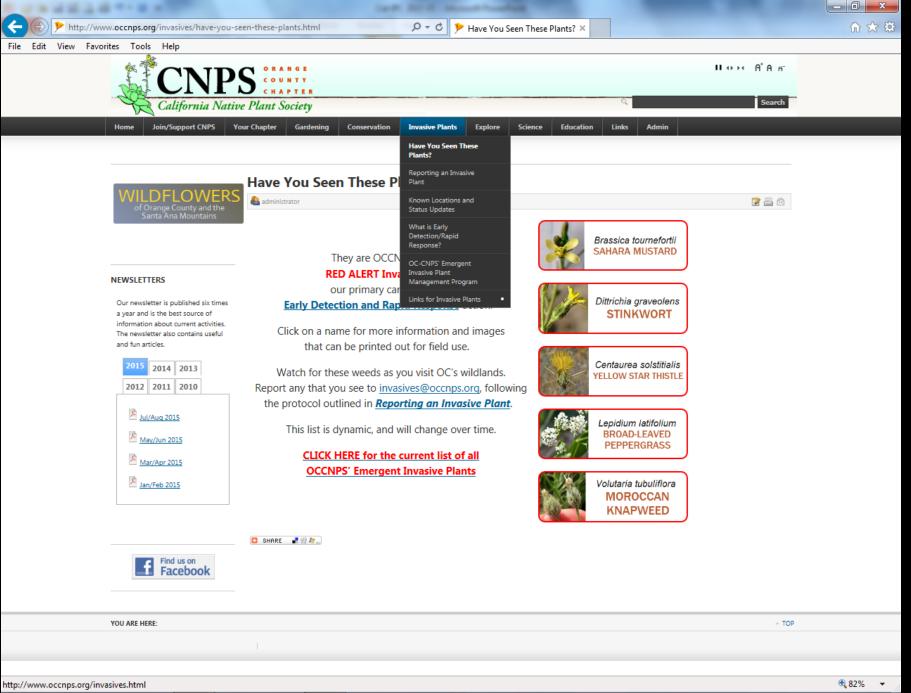






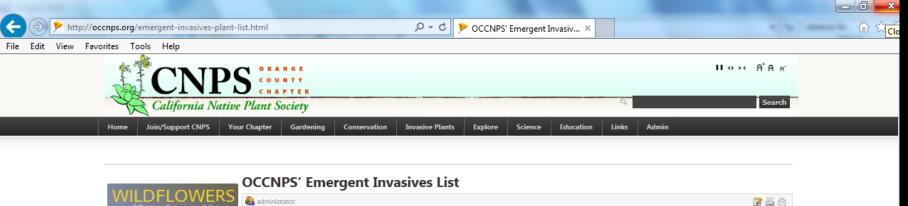














船 administrator

The species outlined in red are currently OCCNPS' RED ALERT Emergent Invasives. All on this list are prime candidates for Early Detection and Rapid Response action. Click on a name for more information and images that can be printed out for field use. Watch for these weeds as you visit OC's wildlands, and report any that you see to invasives@occnps.org, following the instructions in Reporting an Invasive Plant.

NEWSLETTERS

Our newsletter is published six times a year and is the best source of information about current activities. The newsletter also contains useful and fun articles.













Araujia sericifera BLADDERFLOWER



Asphodelus fistulosus ONIONWEED



Brassica tournefortii SAHARA MUSTARD



Centaurea solstitialis YELLOW STAR THISTLE



Chrysanthemoides monilifera ssp. monilitera BITOU BUSH





Dittrichia graveolens STINKWORT



Emex spinosus SPINY EMEX



Hypericum canariense CANARY ISLAND ST. JOHN'S WORT



Kochia scoparia SUMMER CYPRESS



Lepidium draba WHITETOP



Lepidium latifolium **BROAD-LEAVED PEPPERGRASS**



Ludwigia hexapetala CREEPING WATER PRIMROSE



Robinia pseudoacacia BLACK LOCUST



Rubus armeniacus HIMALAYAN BLACKBERRY



Salpichroa origanifolia LILY-OF-THE-VALLEY VINE



Senecio linearifolius v. linearifolius LINEAR-LEAVED AUSTRALIAN FIREWEED



Volutaria tubuliflora MOROCCAN **KNAPWEED**





















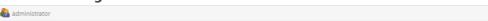








OCCNPS' Emergent Invasives List



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Dittrichia graveolens STINKWORT











Lepidium draba WHITETOP



Lepidium latifolium **BROAD-LEAVED PEPPERGRASS**







































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In bloom March-May, White florets, about 15 in a head, generally barely peek out of the involucre; some may be elongated. Phyllaries are finely fuzzy & have dry, stiff, sharp tips; one or two phyllaries may be elongated.



MOROCCAN KNAPWEED

aka Egyptian or Mediterranean Desert Knapweed

Volutaria tubuliflora

Known OC Sites & Status Updates

Distribution map & info:

- · calflora.org/cgi-bin/species_query.cgi? where-calrecnum=13055
- · cal-ipc.org/symposia/archive/pdf/ 2011/2Kelch.pdf

Can be confused with Volutaria canariensis, Canary Island Knapweed

Moroccan knapweed is an erect, openly branched, robust annual that grows from a soon-deciduous basal rosette. It grows best in disturbed ground & seasonally flooded sites, where it can grow to 3+ ft. high & wide. It forms a stout deep taproot & many fine, waterabsorbing, surface roots.

It has become widespread in the Anza-Borrego area, & has recently been added to California's Noxious Weed List.





Printable profiles for each Emergent Species



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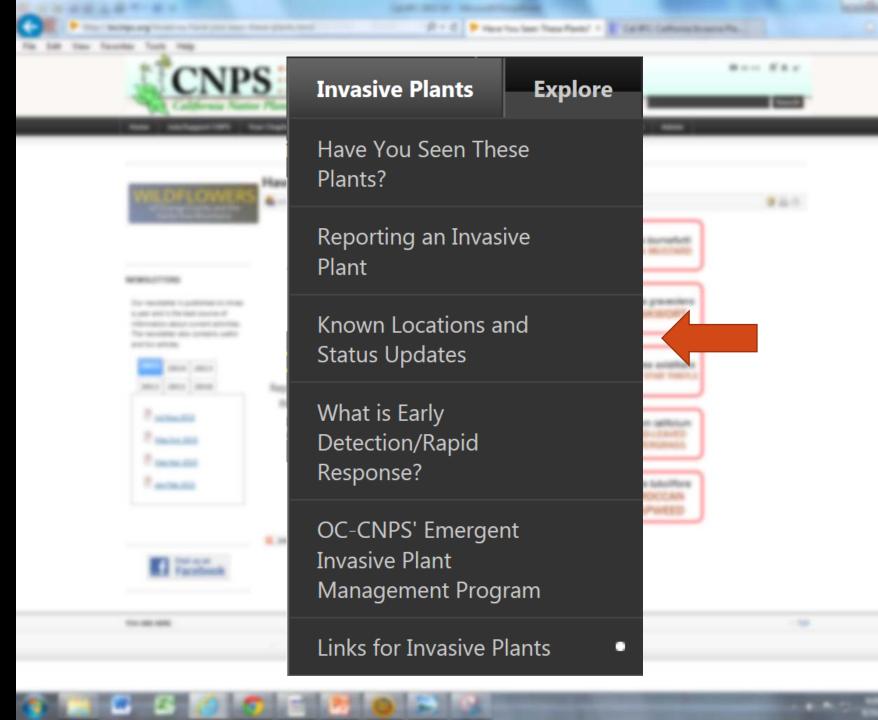


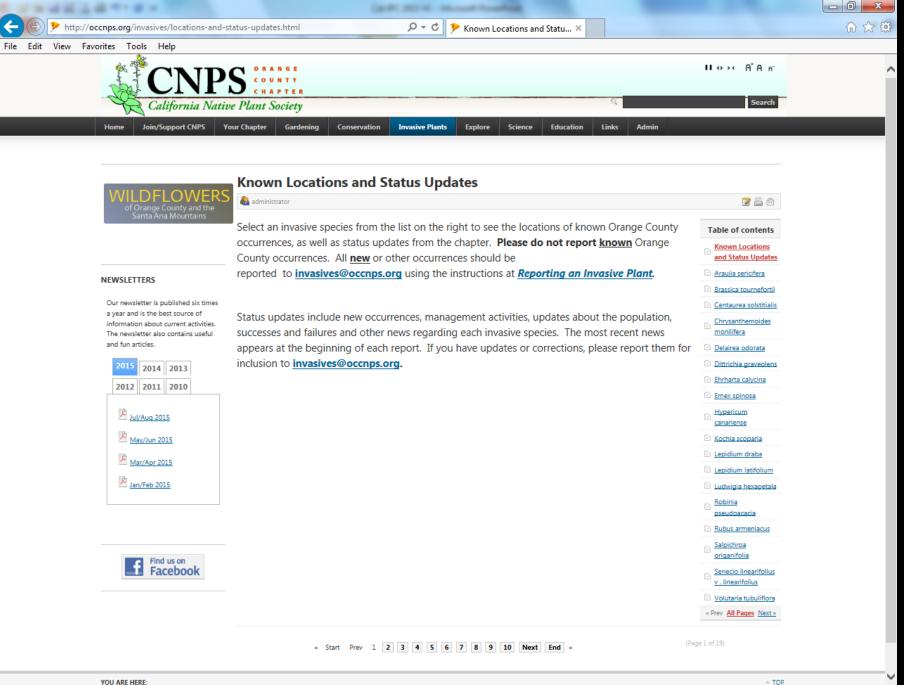
MOROCCAN KNAPWEED, P. 2

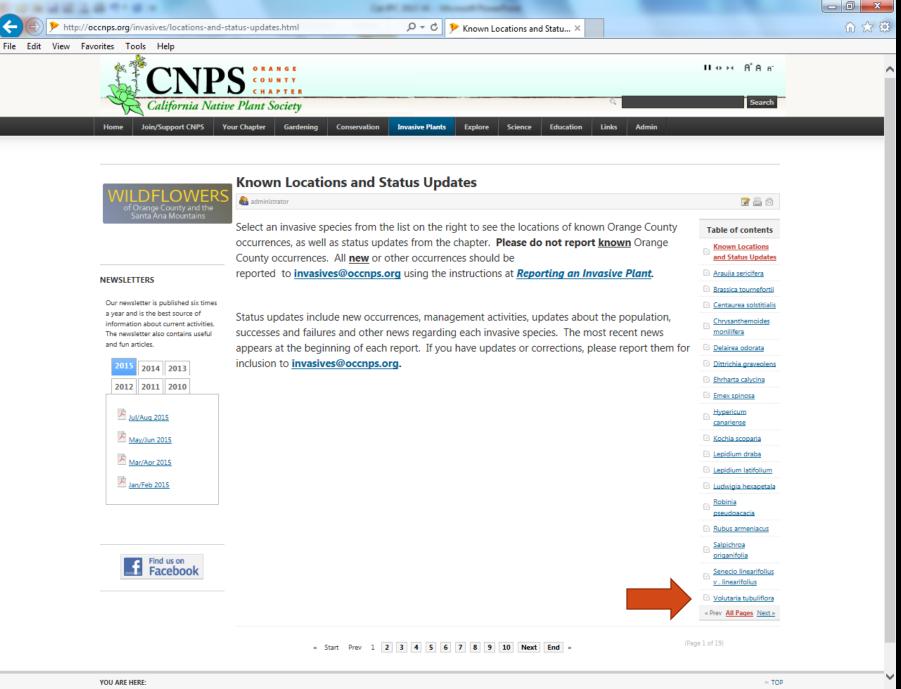
IF YOU SEE THIS PLANT AT A SITE THAT'S NOT ON THE

- · Record the plant's location as exactly as you can (GPS coordinates if possible), the date you saw it, and an estimate of how many there were. Include the site's landowner or manager, if known.
- · Take identifying photos: the whole plant & its surroundings, closeups of leaves, flowers & fruits/pods.
- · If you take a sample, place it immediately into a sealed
- · To avoid spreading the plant, check your clothing and shoes thoroughly before leaving the area, and remove and bag all traces of seeds.
- · Report the find immediately to invasives@occnps.org.

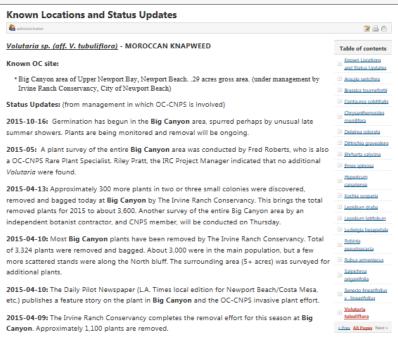
Each plant produces roughly 2500 seeds. Seed are minute, barrel-shaped, with a crown of fine hairs that acts as a parachute for wind dispersal--allowing the plants to spread at a very high rate.











2015-04-08: The Irvine Ranch Conservancy begins removal of plants from the Big Canyon site. Approximately 600 plants are removed today, with the balance, estimated at another 500 plants slated for removal tomorrow.

2015-04-08: OC-CNPS distributes a Media Release to several dozen media outlets, agencies, environmental organizations and other interested parties regarding the infestation.

2015-04-08: Fresh voucher samples from the Big Canyon infestation are taken by an Emergent Invasive Committee member and mailed to the CDFA state botanist in Sacramento

2015-04-06: Prompted by this discovery and the work of OC-CNPS, the CA Dept. of Food and Agriculture lists the species as a state Noxious Weed List 4500 and given an A rating. A-rated pests are subject to state or county enforced action involving eradication, quarantine, containment, ejection or other actions.

2015-04-03: From the mapping, the colony at Big Canyon is determined to be within City of Newport Beach property and managed by The Irvine Ranch Conservancy, who agrees to take the lead on management activities.

2015-04-02: The Big Canyon area is surveyed more thoroughly by a committee member and the colony is plotted as a polygon on Calflora. A much larger infestation is found, over an area of about 0.5 acre and comprising an estimated 500-1,000 plants. Notification is sent by the committee to assorted stakeholders and interested parties, including US Fish & Wildlife, CA Dept. Of Fish and Wildlife, OC Parks, The Irvine Ranch Conservancy, The City of Newport Beach and The Newport Bay Conservancy. Details are also communicated to The California Native Plant Council, CDFA and other SoCal botanists

2015-04-01: Images from the Big Canyon infestation are forwarded to the OC-CNPS Emergent Invasive Plant Committee. From the images, the plant is identified by the OC-CNPS committee as Volutaria tubuliflora. The site is visited in the early evening by a committee member and the identification is confirmed. 23 plants are located in a small colony of only 5-6 square meters. A voucher sample is taken.

2015-03-31: OC-CNPS member Barbara Boethling discovers a few plants of an unknown Centaurea-like plant at Big Canyon, in Upper Newport Bay. She shows images to fellow member Diane Etchison.





Edit View Favorites

Tools

Help







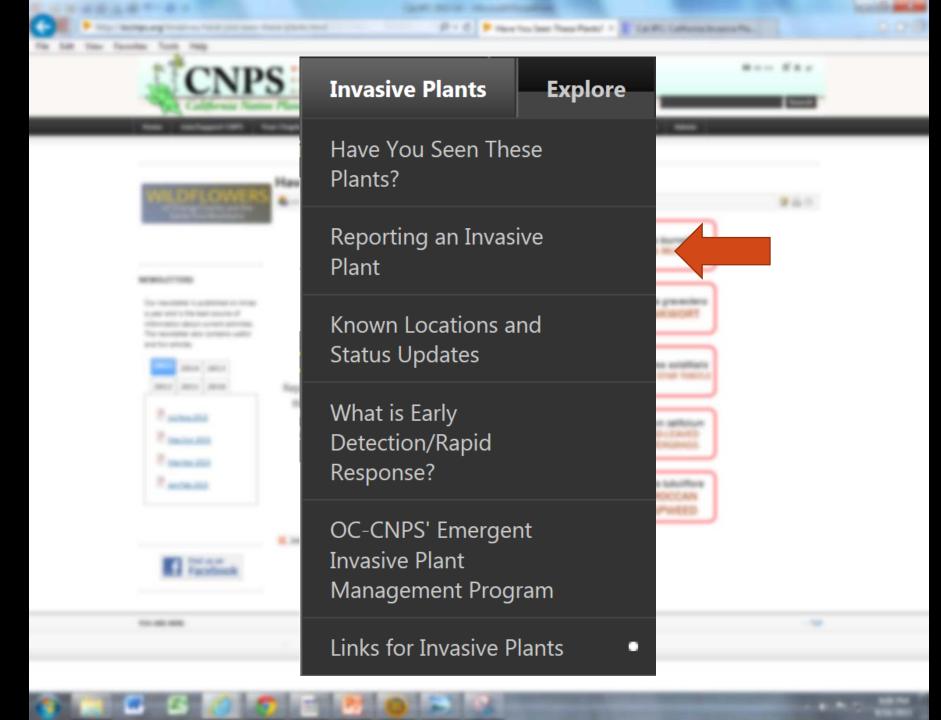


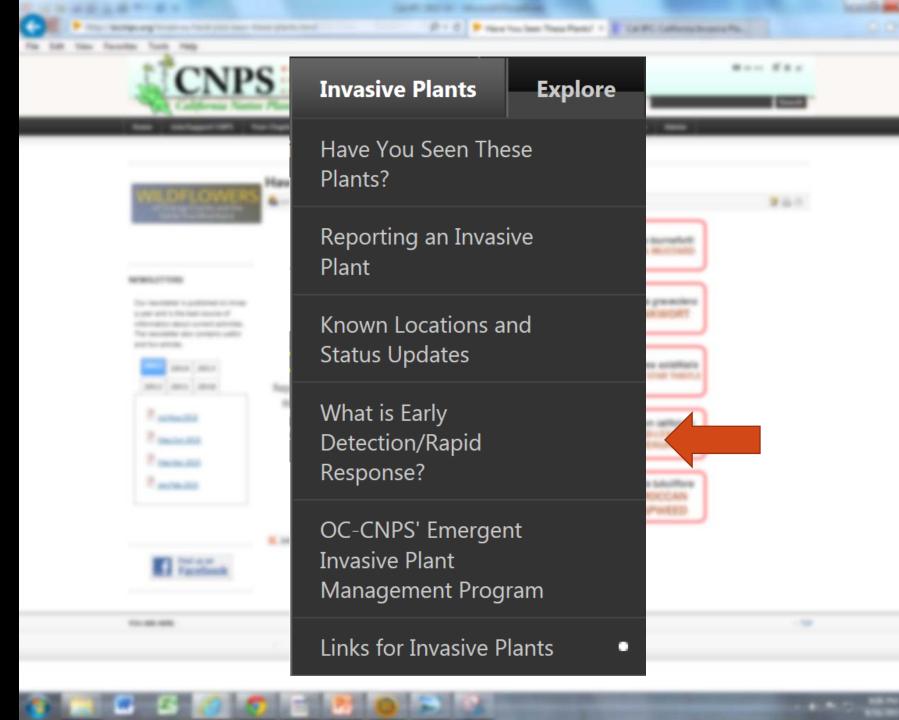


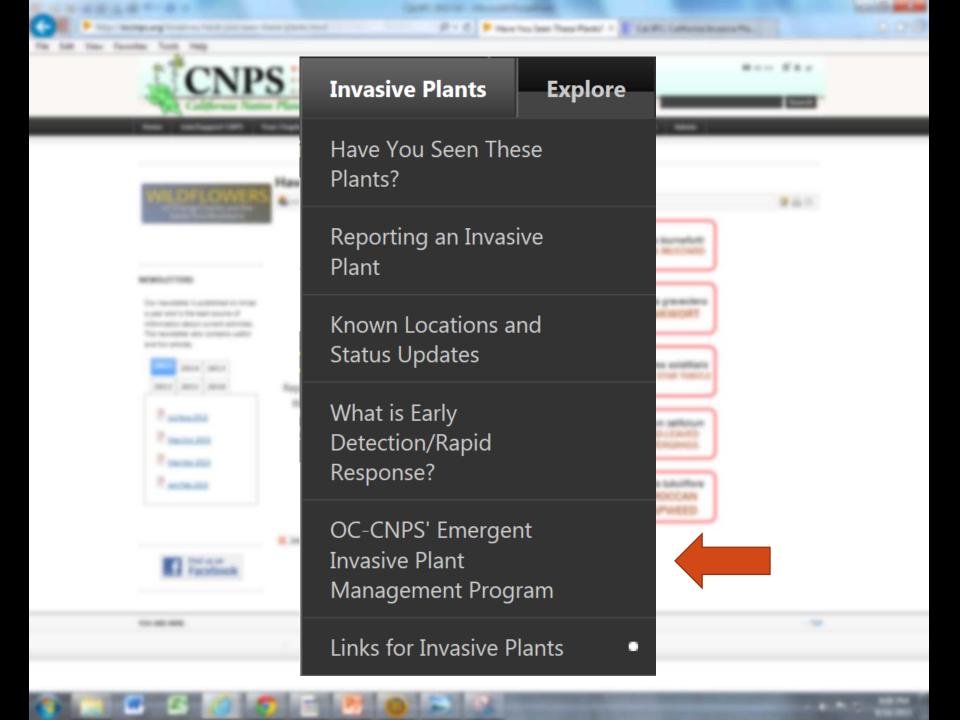


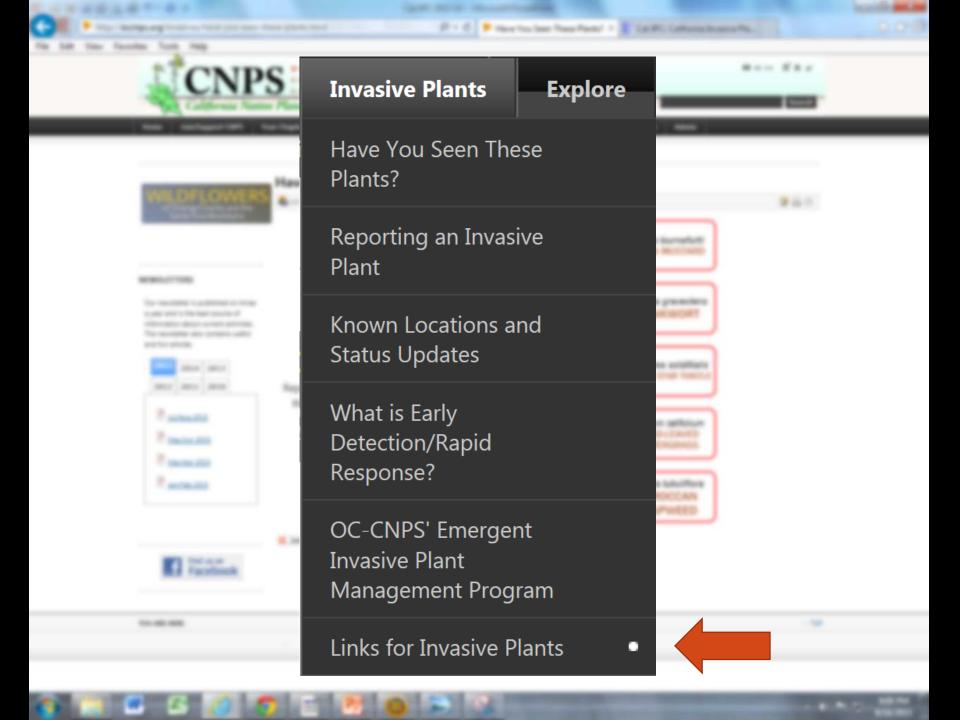














Early Success: Moroccan Knapweed (Volutaria tubuliflora)

- Second record for U.S.
- Site visited by OC CNPS and confirmed within 24 hours, mapped within 48 hours
- Aggressively and immediately managed within 10 days:
 - By Irvine Ranch Conservancy, under contract with City of Newport Beach
 - 3,624 plants removed
- CDFA adds to Noxious Weed List—A rating
- Media coverage and community awareness





Early Success: Sahara Mustard (Brassica tournefortii)

- 6 new emergent infestations were reported to OC CNPS
- 5 of these were aggressively and immediately managed:
 - 3 by OC CNPS volunteers
 - 1 by a cooperating land manager
 - 1 by support group volunteers





Early Success: Yellow Star Thistle (Centaurea solstitialis)

- Three colonies in the county were mapped and plotted:
 - Additional sub-colonies found and reported by OC CNPS
- Colonies now under management:
 - By Irvine Ranch Conservancy, in cooperation with OC Parks
 - By CA State Parks in cooperation with OC CNPS
 - By OC CNPS volunteers
 - By OC CNPS in cooperation with USFS
- 4,527 plants, plus 10 bags, removed





Early Success: Stinkwort (Dittrichia graveolens)

- First occurrence in Orange County reported by OC CNPS member.
- Mapped and plotted by OC CNPS within 10 days
- Reported to OC Parks by OC CNPS
- All plants removed within 60 days
 - Cooperative effort with OC CNPS and OC Parks
- On-going management coordinated:
 - Treated, under the cooperative effort of OC CNPS and OC Parks
 - Hand pulls, under the cooperative effort of OC CNPS and OC Parks





- Relatively quick setup time
- Very low cost
- No boundaries
- Immediate results
- Engages the public

Immediate Successes !!!





What's Next?

- Build partnerships
- Train for Early Detection
- Add to the Cal-IPC knowledge base
- Encourage other chapters and regional organizations



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