

# San Mateo Countywide Water Pollution Prevention Program

March 16, 2022

## Identifying Weeds of Concern in San Mateo County

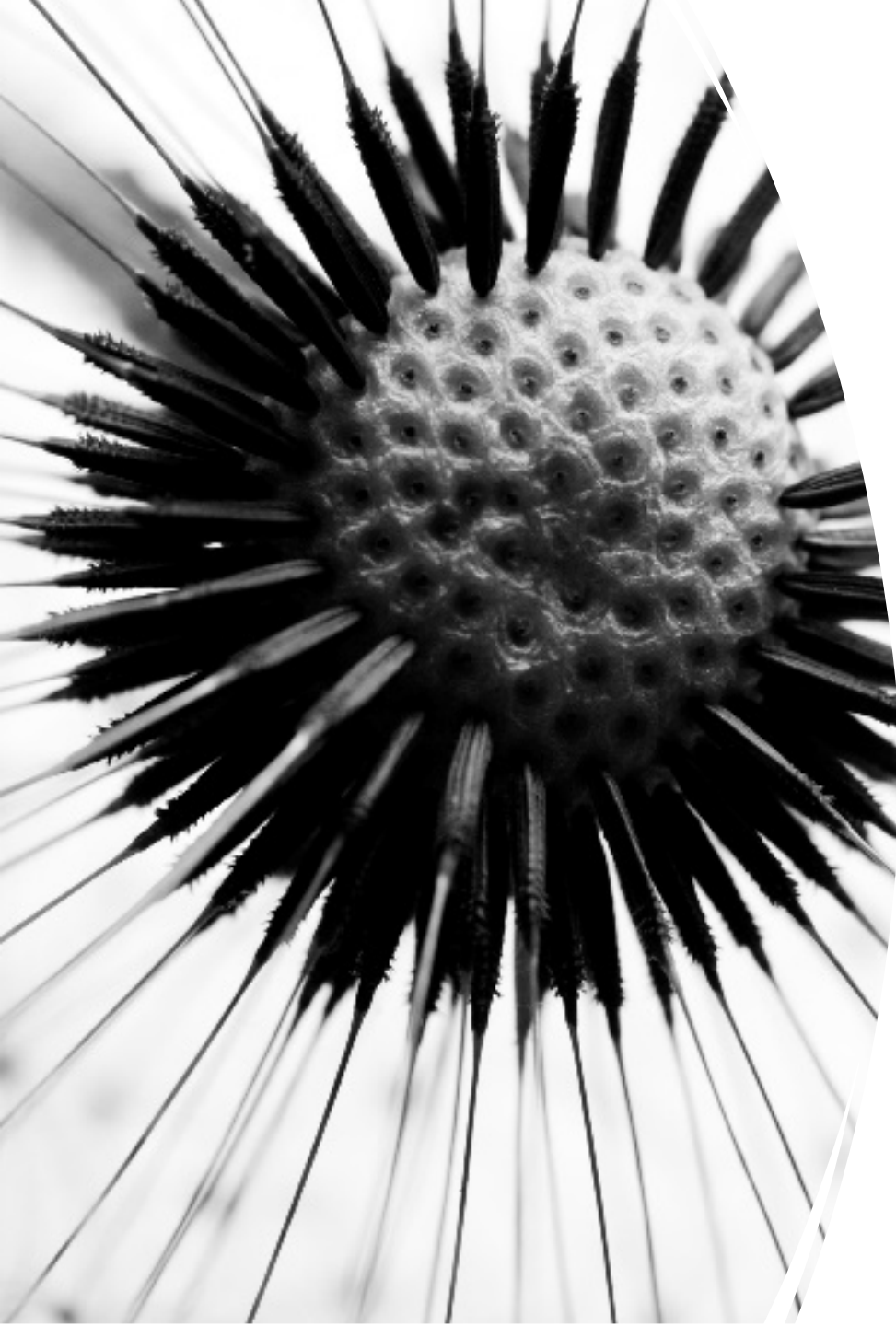
-Nancy Poss, San Mateo County Biologist/Standards Specialist





# INVASIVE WEEDS VS. WEEDS OF CONCERN

- The Agriculture Department is mandated by the California State Department of Food and Agriculture (CDFA) to control or eliminate those weeds considered particularly harmful to agriculture. In fact, as many of you know already, CDFA has a rating system which is used to define which weeds are of particular concern.
- If a plant is found to probably be “troublesome, aggressive, intrusive, detrimental or destructive to agriculture or silviculture, or to an important native species and is difficult to control or eradicate,” CDFA will designate the plant as a noxious weed and will assign the weed a rating of A, B, C, D, Q, or W.



# CDFA Rating System

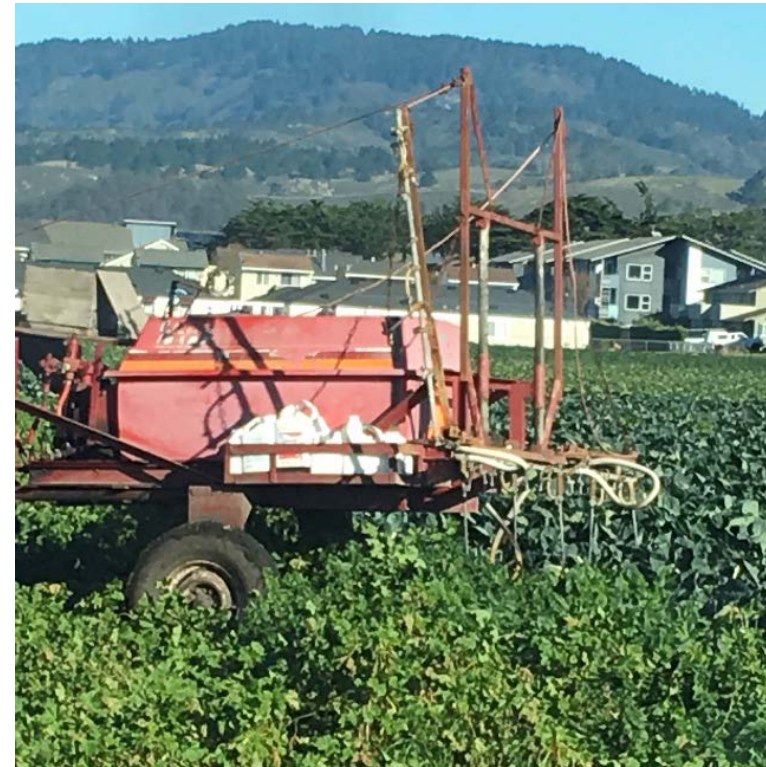
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- **“A” – A pest of known economic or environmental detriment and is either not known to be established in California, or it is present in a limited distribution that allows for the possibility of eradication or successful containment.** A rated pests are prohibited from entering the state with limited exceptions due to research purposes.
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- **“B”- A pest of known economic or environmental detriment and, if present in California, it is of limited distribution.** B-rated pests are eligible to enter the state if the receiving county agrees to accept them. At the discretion of the local CAC, they are subject to eradication, containment, suppression, control or other holding action.
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- **“C”- A pest of known economic or environmental detriment, and if present in California, it is usually widespread.** C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments. If found in the State they are subject to regulations to retard spread or suppress at the discretion of the local CAC.
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- **“D”- A pest known to be of little or no economic or environmental detriment, to have an extremely low likelihood of weediness, or is known to be a parasite or predator.**
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- **“Q”- An organism or disorder suspected to be of economic or environmental detriment, but whose status is uncertain because of incomplete identification or inadequate information.**
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- **“W”- This notation indicates that the plant is included in the CCR Section 4500 list of California State Noxious Weeds.**



## An IPM Approach to Weed Control

- Under the IPM approach, it is important to prevent those undesirable plants from occurring in the first place,
- hand-weeding or manual control next, biological control when available and chemical control only when absolutely necessary







## San Mateo County Weed Management Area Group

- The San Mateo County Weed Management Area (SMCWMA) was founded December, 2000.
- Meets bimonthly. The SMCWMA is a regional network formed by state and local agencies, private landholders, the agricultural industry and environmental organizations that have concerns about the proliferation of invasive plant species in San Mateo County.

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# Priority Weeds of Interest to the WMA

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- Atlantic Cordgrass *Spartina alterniflora*
- Barbed Goatgrass *Aegilops triuncialis*
- Canary Island Hypericum *Hypericum canariense*
- Fertile Capeweed *Arctotheca calendula*
- Purple Loosestrife *Lythrum salicaria*
- Distaff thistle *Carthamus lanatus*
- European Beach Grass *Ammophila arenaria*
- Gorse *Ulex europaea*
- Hanging sedge *Carex peduncula*
- Skeletonweed *Chondrilla juncea*
- Slender false brome *Brachypodium sylvaticum*





## Atlantic Cordgrass *Spartina alterniflora*

- Perennial grass with hollow stems that grow from 2-4 ft. tall. Leaves are wide and often purplish at the base. Found along the Bay especially from Burlingame to RWC. Control efforts are currently being conducted.
- B-rated

# Barbed Goatgrass

## *Aegilops triuncialis*

- Winter annual grass. Native to the Eastern and Mediterranean Europe and Western Asia.
- Grows in rangelands, grasslands, and oak woodlands.
- Can injure livestock by lodging in their eyes or mouths.
- Mid-Pen is fighting quite a bit of this grass on their properties. Mowing at the right time is key.
- B rated





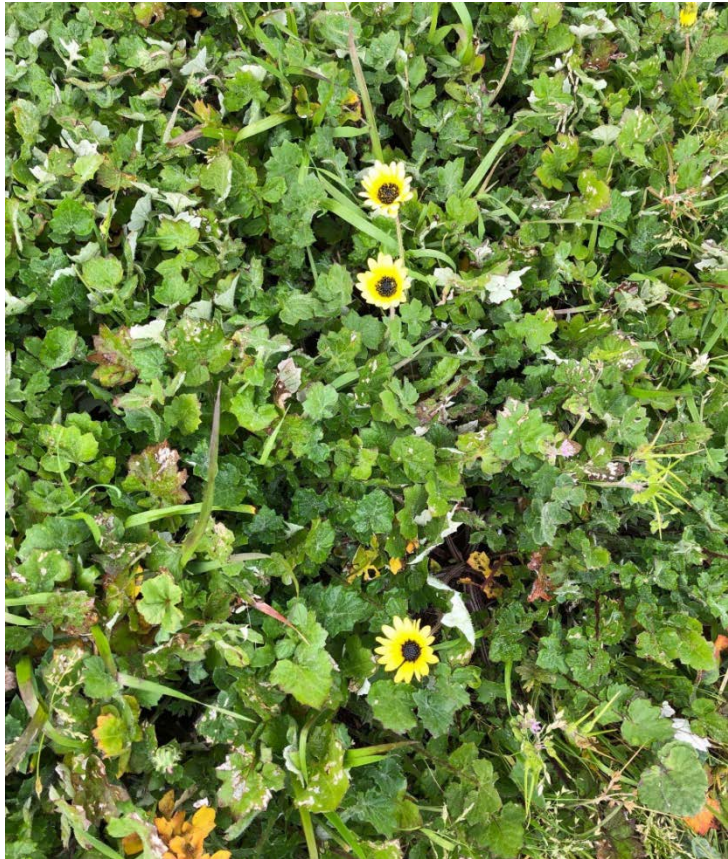


## Canary Island Hypericum *Hypericum canariense*

- A rhizomatous perennial shrub. Forms dense stands that excludes natives. Upright to 15 ft. Flowers are  $\frac{1}{2}$  inc wide with 5 yellow petals growing in large clusters. Waxy, opposite leaves with light colored bark. Largest infestation (over 200 acres) found in CA is right here in San Mateo County in the Gazos Creek Watershed. Is being actively treated by State Parks when it crosses onto their property.
- Can be confused with an ornamental variety of Hypericum. St. John's Wort. May need to send to lab to id.
- B rated.

# Fertile Capeweed

## *Arctotheca Calendula*



- Fast growing ground cover with gray-green leaves, and bright yellow flowers with a dark purplish center that looks black. Can invade disturbed areas and establish nearly pure stands. Classed by CDFA as A rated.
- So far, only known to occur in Pescadero on properties along Bean Hollow Rd. and Highway 1. Our Dept. is actively trying to eradicate it.
- An infertile variety exists that is widely planted. This variety has an all yellow flower.



# Purple Loosestrife

## *Lythrum salicaria*

- Invasive perennial spreading rapidly in wetlands across North America. Many stems grow from root crown. Spikes covered in purple flowers. Leaves usually paired, with downy smooth-edged leaves. It is a severe problem on the East Coast (bottom picture).
- Only known location in San Mateo Co. is in La Honda along Reflection pond. We have been contracting with On-Point who sub-contracts with Go Native. Only found 2 small plants last year which were hand-pulled.
- B-rated.







## Woolly Distaff thistle *Carthamus lanatus*

- Some species of distaff thistle such as Whitestem distaff thistle are A rated. This species is B rated. This is another pest of rangeland areas-in our county it is on Mid-Pen property and a couple of pasture areas in La Honda and San Gregorio. Looks like yellow star but taller and spinier.
- It is a yellow-flowered spiny winter annual native to Mediterranean and central Europe. Becoming a huge problem in Marin and Sonoma Co.



# *Carthamus lanatus* - woolly distaff thistle

- Spiny yellow flowered composite
- Looks a little like yellow star thistle, but taller, spinier
- Late season annual (blooms June - Sept)
- Forms dense, impenetrable mats in open (overgrazed) areas
- Almaden Quicksilver Park

Found in San Mateo County on private & Mid-Pen property around La Honda and San Gregorio. Causes damage to mouths of cattle and horses.





# European Beach Grass *Ammophila arenaria*

- This is a clumping perennial grass found in coastal dune systems. It grows more densely than our native dune grass and can trap passing sand creating steep dunes and preventing new sand from reaching interior dunes.
- It grows up to 4 ft. tall and produces long thick rhizomes-both horizontal and vertical. Dormant rhizome fragments can survive long periods of submersion in ocean water and can be spread to new areas.



- State Parks has been battling this grass in several locations.
- It is considered highly invasive by Cal-IPC but is not yet rated by CDFA.



# Gorse

## *Ulex europaea*

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- Gorse is a spiny dense shrub with thousands of showy pea-type flowers. It can grow into a tall impenetrable thicket. It is native to Europe and was originally planted before hedging.
- Gorse has a B-rating and is found in the north part of our county around San Bruno and in Pescadero, where there is a large patch along White House Canyon Rd. Both State and County Parks have been trying to eradicate it. Efforts are now being made with a masticator which is a large machine that can be remotely controlled.





# Hanging Sedge

## *Carex pendula*

- This sedge can grow to be more than 6 ft. tall and is found in the SF Bay Area and the Sacramento Valley. It has red-brown to purple to and spreads by rhizomes and seeds.
- County Parks and RCD have been trying to control it in some of the park areas near Wunderlich and Huddart.
- Not on the Noxious weed list or listed as A or B, but definitely invasive with potential to spread.



## Skeleton Weed *Chondrilla juncea*



- A perennial forb that can grow up to 4 ft. tall. It has small yellow flowers that develop in mid-summer and bloom from July-Sept. Has coarse-looking multiple stems rising from a basal rosette of sharply lobed leaves. The lower 4-6 inches of the stem is covered with coarse brown hairs.

- It was accidentally introduced as a contaminant in hay and is invading some of the dry rangelands in the Western US.

- This is an A rated weed. In this county is found from RWC to San Mateo mostly centered around the Caltrain line. We have contracted with On-Point to treat it in Edgewood Park and along the Edgewood Rd.





## Slender False Brome *Brachypodium sylvaticum*

- A perennial bunch grass originally from Europe, Asia and North Africa, slender false brome is capable of achieving over 90 % ground cover, inhibiting the growth of tree seedlings and replacing native vegetation. It has long drooping bright green leaves.
- As an A rated weed, Midpen is managing it in Thornewood Open Space Preserve, but large stands are also being found in Woodside and along Skyline. RCD is working with homeowners to educate. Hand removal being done with contractor.





# Weeds to Manage as Appropriate for the Situation

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- Arundo (Giant reed) *Arundo donax*
- Broom, French, Scotch *Genista monspessulana*, *Cytisus scoparius*
- Broom, Spanish *Spartium junceum*
- Cape Ivy *Deaired odorata*
- Ehrharta *Ehrharta erecta*
- English ivy, Algerian ivy *Hedera helix*, *H. canariensis*
- Harding grass *Phalaris aquatica*
- Italian Thistle *Carduus pycnocephalus*
- Jubata /Pampas grass *Cortaderia jubata/selloana*
- Little Robin *Geranium purpureum*
- Medusahead *Taeniatherum caput-medusae*
- Poison Hemlock *Conium maculatum*
- Purple False Brome *Brachypodium distachyon*
- Purple Starthistle *Centaurea calcitrapa*
- Stinkwort *Dittrichia graveolens*
- Tocalote, or Malta Starthistle *Centaurea melitensis*
- Tree of Heaven, *Ailanthus altissima*
- Yellow Starthistle *Centaurea solstitialis*

# Arundo (Giant reed)

## *Arundo donax*

- This is a tall perennial cane that forms dense stands on disturbed sites, sand dunes, riparian areas and wetlands. It is a huge problem in some of our southern counties, as well as in the river valleys of Sacramento, San Joaquin, Monterey, San Luis Obispo and SF Bay Area.
- There are a few known occurrences in HMB but those clumps are not along a riparian corridor and have not spread. Other locations are near Cordilleras Creek in San Carlos and RWC. This reed is on the Noxious Weed list.





French, Scotch and Portuguese  
and Spanish Broom

*Genissta monspessulana*,  
*Cytisus scoparius*, *Cytisus*  
*striatus*, *Spartium junceum*

- Although widely found throughout California, these weeds are considered Noxious Weeds and are listed under CCR 4500. Most of the brooms look similar with all of them being bushy drought-deciduous shrubs that can grow up to 6 ft.

- French broom has pods with hairs all over and stems that are not ridged or green. Portuguese broom has paler yellow blossoms and silver seedpods densely covered in white hairs. Spanish broom has a finely ribbed stem which makes it nearly round.

- Refer to UCIPM for distinguishing characteristics.





## Cape Ivy *Delairea odorata*

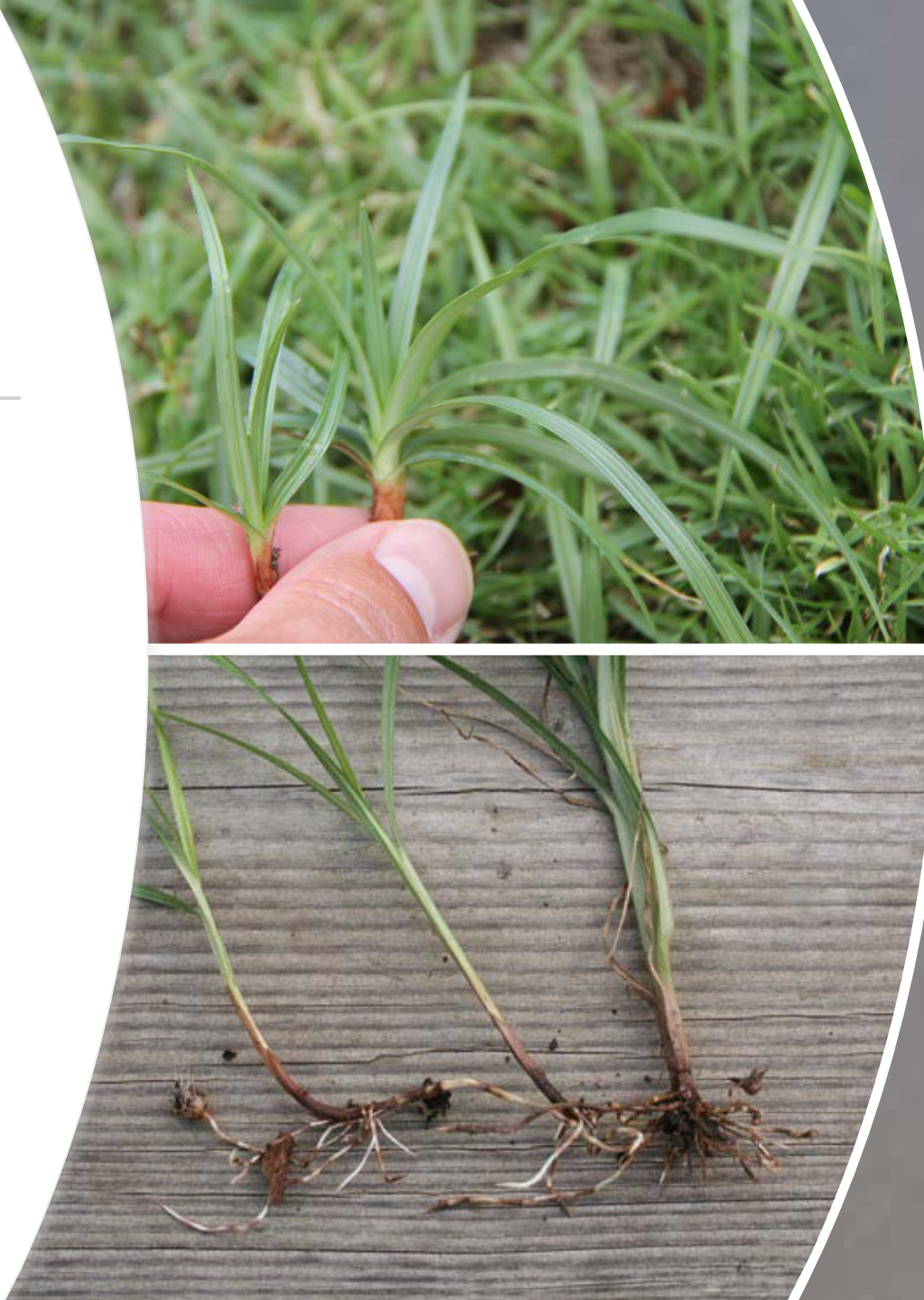
- Cape ivy is a perennial hairless vine that can grow as long as 30 ft. It has winter-blooming yellow flowers and 5-9 lobed, glossy light green leaves.
- Native to South Africa and considered "naturalized" in CA. Not rated anymore but considered extremely invasive.
- Reproduces mainly from rhizomes, stems, and plant fragments and occasionally by seed.





## Yellow and Purple Nutsedge *Cyperus esculentus*, *Cyperus rotundus*

- Purple nutsedge produces tubers in chains connected by rhizomes, whereas yellow nutsedge only produces tubers at the tips of rhizomes.
- One yellow nutsedge plant can produce hundreds to thousands of tubers in one season. B-rated weeds, considered very invasive and difficult to control because of these tubers. Currently found in Miramar in a grower's fields.



## Purple Starthistle and Iberian Starthistle *Centaurea calcitrapa*, *Centaurea iberica*

- B-rated weed commonly found in San Mateo County. Rogue out and map it if found. Annuals and sometimes perennial, existing as basal rosettes until bolting in late Spring and into summer.
- They prefer fertile alluvial soil and can form dense stands in pasture or open rangelands, outcompeting for water with a long taproot.
- Both species have spiny heads with purple flowers. The pappus on Iberian has white bristles, while purple starthistle usually lacks a pappus. Buried seeds can remain dormant and viable for 3 years in the soil.





# The Dirty Dozen\*



1. *Aegilops triuncialis* - Goatgrass
2. *Asparagus asparagoides* - Bridal creeper
3. *Brachypodium sylvaticum* - Slender false brome
4. *Carthamus lanatus* - Woolly distaff thistle
5. *Centaurea calcitrapa* - Purple starthistle
6. *Clematis vitalba* - Old man's beard
7. *Euphorbia helioscopia* - Sunwort
8. *Ludwigia hexapetala* - 6-petal water primrose
9. *Oncosiphon piluliferum* - Stinknet (globe chamomile)
10. *Paspalum urvillei* - Vasey's grass
11. *Rhaponticum repens* - Russian knapweed
12. *Taeniatherum caput-medusae* - Medusahead

\*Bonus:

*Fallopia japonica* - Japanese knotweed



# *Asparagus asparagoides* - bridal creeper

- Deciduous vine
- Large storage tubers
- Swamps shrubs and trees
- Leaves are curly and shiny with parallel veins
- Leaflets out in late fall, blooms as early as February, fruits by early spring
- Shady riparian areas
- Handpulling is not effective due to tubers



Sheldon Navie



# *Clematis vitalba* - Old man's beard

- Aggressive woody vine
- Looks VERY similar to native *Clematis* sp. (*C. ligusticifolia* - creek clematis and *C. lasiantha* - pipestem clematis)
- But! Flowers are bisexual, leaflets somewhat heart-shaped, wrist-thick woody stems, overall habit is more vigorous
- One known location in SCC at Rancho San Antonio





# *Euphorbia helioscopia* - sunwort

- One of several weedy Euphorbia species in the area
- Annual herb with milky juice, weird flowers
- At Lake Cunningham and in the Bay Lands
- Reported by CNPS member working in the Native Plant Garden

E. characias, another Euphorbia is growing along Hwy 92 near Skylawn Cemetery. The Q rating of these plants means they are still under review.





# *Ludwigia hexapetala* - 6-petal water primrose

- Aquatic herb
- Usually has 5 petals
- Hairy reddish stems
- Much taller and more aggressive than common water primrose (*L. peploides*)
- Forms dense mats
- Turns open water into stagnant pools





# Stinknet

## *Oncosiphon piluliferum*

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- Invasive chamomile native to South Africa
- Yellow globe flowers in March-July
- Has a strong smell: has been described as a mix of turpentine, cheese, leather and bleach.
- One plant found in Santa Clara County. There has been a localized outbreak in SoCal, where it invades open, disturbed areas including dunes, scrub, and chaparral.





# Stinknet



Stinknet. Globe shaped flower heads ( $\frac{1}{4}$  -  $\frac{1}{3}$ " diameter), plant 1-3' tall.

Brass buttons  
(kinda invasive).  
Flatter flower  
profile. Smells like  
cedar chips.  
Plant < 1' tall.

## Lookalikes



Pineapple weed  
(native). Yellowish  
green, egg-shaped  
heads. Smells like  
pineapple, blooms  
early spring.  
Plant < 1' tall.



Sneezeweed  
(native). Look for  
tutu below head.  
Heads  $\frac{1}{2}$ - $\frac{3}{4}$ "  
diameter, winged  
stems, plant 2-4'  
tall.





# *Paspalum urvillei* - Vasey's grass

- Tall, coarse, perennial bunch grass
- Leaves up to 1" wide
- Can invade grassland, wetland, and shrubland. Salt tolerant!
- Two known locations in SCC:  
Rancho San Antonio and Stevens Creek near 101.



Sheldon Navie



Tom Cochrane



# ID tips for Vasey's grass

- Look for a tall bunchgrass with coarse, wide leaves (have seen up to .75" wide), often with a rippled edge
- Long, jagged ligule
- Count inflorescence branches to distinguish from the much more common *P. dilatatum* (has 2-7 branches)





# *Rhaponticum repens* - Russian Knapweed

- Upright composite with lavender flowers, dark roots
- Spreads by underground stems (rhizomes)
- Allelopathic!
- Rarely reproduces by seed
- Handpulling is ineffective
- Two known locations in east San Jose: Lake Cunningham and Hellyer Park





# *Taeniatherum caput-medusae* - Medusahead

- Annual grass
- High silica content; wiry texture; forms thatch when dead
- Really long awns
- Grows in serpentine, disturbed areas, meadows
- Problematic for similar reasons as *Aegilops*: silica thatch, nothing eats it, invades endemic habitat.

Also found here in San Mateo County in several rangeland locations. This noxious weed is under treatment on Mid-Pen lands and Parks.



# Up and Coming Weeds

- Japanese Dodder (*Reynoutria japonica*)
- False Yellow head(*Dittrichia viscosa*)
- Diffuse Knapweed (*Centaurea diffusa*)
- Spotted Knapweed (*Centaurea stoebe*)
- Illyrian thistle (*Onopordum illyricum*)



# Japanese Knotweed

## *Reynoutria japonica*

- An A-rated invasive plant which poses severe risks to the environment and property. It is an herbaceous rhizomatous perennial that grows up to 12 ft. tall. It can grow up through street pavement, concrete and other hardscapes.
- Found in Marin Co. in the San Geronimo Valley and Lagunitas Creek Watersheds.
- Typically found in wetter areas such as riparian areas, and septic leach areas, knotweed has thick leathery leaves about 4-5 inch long bearing few hairs





# ID tips for Japanese knotweed

- Deciduous perennial that dies back in winter, regrows from shoots late spring
- Hollow shoots and stems with red splotches and obvious nodes and flaps of tissue
- Large leaves can be palm-sized
- Flowers Aug-Oct





# False Yellowhead (*Dittrichia viscosa*)

- Newly reported in SF. Hunter's Pt. Naval Shipyard
- Cal-IPC rating: WATCH
- Related to stinkwort, *D. graveolens*
- Highly invasive in Australia
- Perennial herb (sub shrub) with yellow flowers
- Glandular hairs (sticky) and malodorous





# Tips for identifying *Dittrichia viscosa* or Yellowhead

- Ray flowers (petal-like) 8-12mm, much larger than *D. graveolens*
- Flowers in almost a spike
- Unpleasant scent (essential oil available for purchase...)





# Diffuse Knapweed (*Centaurea diffusa*)

- Cal-IPC rating: MODERATE
- Highly branched white to lavender-flowered perennial herb
- Problematic in N & NE California, but some populations recorded in the Bay Area
- Very invasive in most of the western US
- Forms dense infestations



# ID tips for diffuse knapweed

- Fringed phyllaries
- Flowers are usually white but sometimes lavender
- Blooms June through Sept
- Tumbleweed shape
- Deeply divided gray-green leaves
- Can hybridize with *C. stoebe*





# Spotted Knapweed (*Centaurea stoebe*)

- Cal-IPC rating: HIGH
- Biennial or short-lived perennial herb with pink or purple flowers
- Blooms June-Oct
- Unlike many *Centaureas*, leaves and stems are green without much hair
- Massive seeder – up to 40,000 seeds per plant
- Invades open areas, roadsides, rangeland



# ID Tips for Spotted Knapweed

- Purple-brown phyllary edges with fringe (dark or straw-colored)
- Basal rosette leaves are green, mix of entire or deeply lobed





# ID tips for Illyrian thistle

- Winged, spiny stems & pedicels
- White-hairy leaves & stems
- Lobed but not dissected leaves (compare to artichoke)
- Large, showy thistle



Artichoke leaf  
- dissected,  
almost  
compound



# Illyrian thistle (*Onopordum illyricum*)

- Cal-IPC rating: WATCH
- Large biennial thistle (6' tall) with pink to purple flowers
- Blooms June-July
- Aggressively spiny, even rosettes
- Artichoke-like bracts





# Resources for IPM Mgmt.

- California Invasive Plant Council (Cal-IPC )- BMP's for non-chemical weed control
- Cal-IPC's Dispatch Newsletter
- UC Davis Weed Research & Information Center (WRIC)
- SF Department of the Environment – Website, including SF Reduced –Risk Pesticide List which is reviewed annually.
- Pest Prevention by Design-Landscapes- Can be downloaded as a manual or used as an online tool.
- Weed Management Handbook (Idaho, Oregon, Washington)
- Appendix G- Herbicides, Trade Names, and Target Species-USDA Forest Service (older, 2006 publication, but useful)
- California Weed Science Society (CWSS) –"Principles of Weed Control, 4<sup>th</sup> Edition"



# WeedCUT

The WeedCUT decision support tool provides land managers with guidance on a range of methods for managing invasive plants in wildlands using non-chemical approaches exclusively, for situations when use of herbicides is restricted or not desired. The tool allows users to enter the characteristics of a target weed and the site to filter for the most effective practices.

[Go to the WeedCUT application](#)

This tool was created through a partnership with the University of California IPM Program, and is based on the [Best Management Practices for Non-Chemical Weed Control](#) manual, available for free download.



*Cutting yellow starthistle before seed set with brush cutter and PPE. Credit: Dawn Cunningham.*

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# BMPs for Non-Chemical Weed Control

This manual provides comprehensive descriptions of 21 commonly used non-chemical weed control techniques and of biological control agents for 18 weed species/species groups that will help you as a practitioner treat weeds more effectively.

Authors of each chapter have compiled research and on-the-ground knowledge of subject experts on tools and methods of application, as well as on efficacy of techniques under various environmental conditions and across different classes of invasive plants. Environmental, cultural, and human safety risks are also highlighted to help support safe and effective use of techniques. This manual is designed to be a go-to resource for practitioners that are either complementing their weed control work with non-chemical techniques or are exclusively restricted to not using herbicides. Individual BMPs will be incorporated into an online decision support tool still in development.



## Best Management Practices for Non-Chemical Weed Control

**This manual is available as a free download.** [Click here for a PDF of BMP for Non-Chemical Weed Control.](#) (291 pp., 21.5 MB)

### Contents:

- Removing Whole Plants (5 techniques)
- Controlling Plants by Cutting (6 techniques)

### MORE PAGES IN "PUBLICATIONS"

- [Prevention BMPs for Land Managers](#)
- [Prevention BMPs for Transportation and Utility Corridors](#)
- [BMPs for Protecting Wildlife When Using Herbicides](#)
- [Land Manager's Guide to Developing an Invasive Plant Management Plan](#)
- [Prevention BMPs for Central Sierra Tree Mortality Zones](#)
- [Use of Fire as a Tool for Controlling Invasive Plants](#)
- ["Weeds of the West" ID USB drive](#)
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- [Weed Workers Handbook](#)
- [Invasive Plants of California's Wildlands](#)
- [Prevention BMPs for Sierra Nevada Meadow Restoration](#)
- [Blueprint for Coordinated Landscape-Scale Management of Invasive Plants in California](#)
- [Stewarding California's Biodiversity: Early](#)



# Pest Management for City Departments

Resources on this page for pest management at San Francisco city departments.

[IPM Compliance Checklist](#)

[Reduced Risk Pesticide List](#)

[Lease and contract language](#)

[Safe disposal](#)

[Pesticide use trends](#) (and interactive data visualization)

[Resources](#)

[Meetings, exemptions granted, and other public information](#)



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## IPM Compliance Checklist

San Francisco city staff have been national leaders in integrated pest management (IPM) since the City passed its [Integrated Pest Management Ordinance](#) in 1996. The Ordinance governs the way pests are managed on all City properties, but does not apply to private property. Specifically, the law applies to any City staff or contractors managing unwanted insects, rodents, birds, weeds, or other organisms for buildings & landscapes that are:





# Questions and Comments?

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Special thanks to Jennifer Mo, Santa Clara  
Water who helped with pictures and Id.

