



# Hollister Hills SVRA

(EDRR) - EARLY DETECTION  
RAPID RESPONSE



Nicolas Somilleda

Environmental Scientist

**California State Parks  
Early Detection and Rapid Response (EDRR) Handbook  
for Invasive Species Management**



Prepared by:

California State Parks  
Natural Resources Division (NRD)  
1416 Ninth Street, Room 923  
Sacramento, CA 95814



## What is EDRR?

- Early Detection Rapid Response (EDRR)
- Part of your Integrated Weed Management Program
- Approach of detecting & treating weed species early
- Coordinated & documented survey effort
- Target high profile weed species
- Prevent the establishment of unwanted weed species



# Program Goals

- Integrate prevention and early detection as fundamental components of each district's weed management program.
- Develop an EDRR program over time to fit the needs and resources of each district.
- Survey and document high priority areas each year for target EDRR species using GPS and GIS technologies.
- Treat new weed species and populations promptly.
- Document the work.



## Why It Matters

- Protects native species & native biodiversity
- Preserves native and sensitive habitats
- Helps prevent the alteration of habitat structure
- Reduces increased fire hazard
- Reduces cost & labor associated with weed management



---

*Land managers and scientists agree that catching invasive species early is the most cost-effective approach to avoiding many of the long-term economic, environmental, and societal costs associated with invasive species.*

---

---



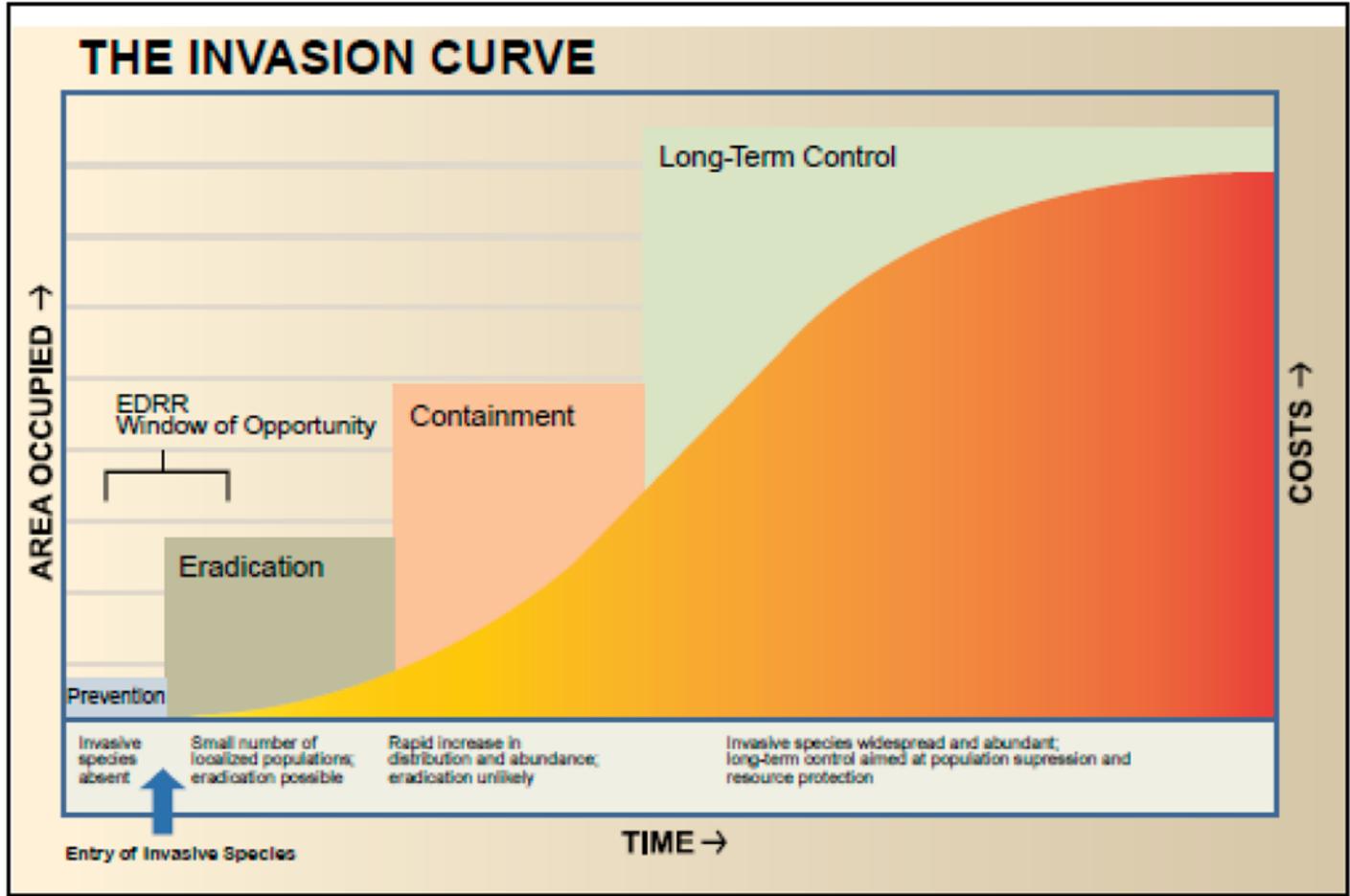


Figure 1. The stages of species invasion from Safeguarding America's Lands and Waters from Invasive Species: A National Framework for Early Detection and Rapid Response. U.S. Department of the Interior, 2016.













## How It Works

- Regular surveys at the early stages of growth
- Survey geography – establish survey routes & locations
- Generate weed species lists:
  - Cal-IPC (California Invasive Plant Council)
  - CalFlora
  - County Weed Management Areas (WMAs)
  - Locally created weed species list
- Collect data
- Generate treatment plan
- Implement treatment efforts promptly and consistently



## Components of an EDRR Program

- Survey Geography
- Surveyor Selection
- Target Species Lists
- Field Methods
- Data Collection Methods
- Data Management



# Survey Geography

- The search areas and routes for early detection surveys can be thought of as survey geography.
- In many ways, geography is the first factor in establishing an EDRR program.
- What areas are at risk of invasion?
- What areas need the highest protection?



# Park Map

## State Vehicular Recreation Area

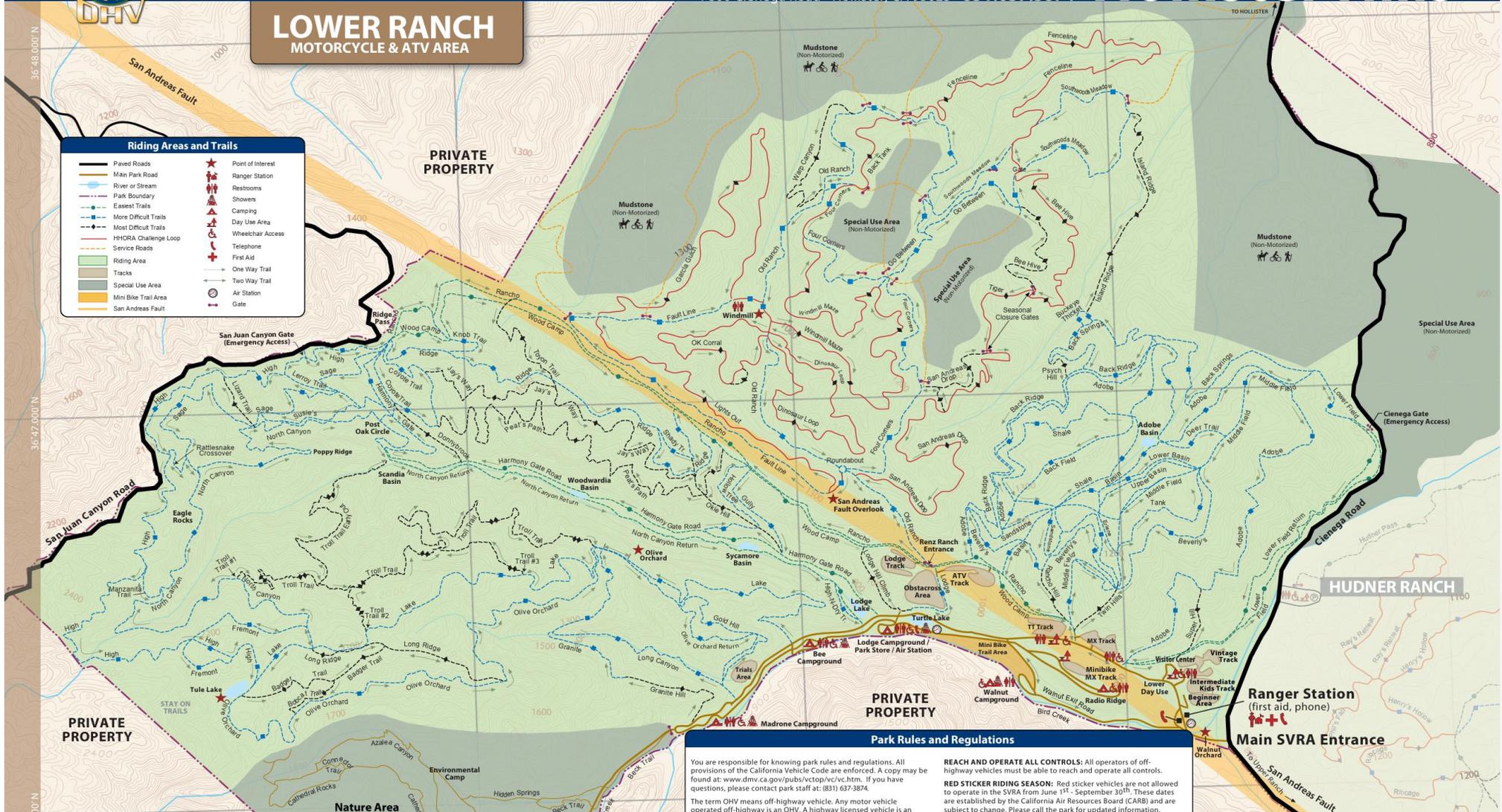
# Hollister Hills

7800 Cienega Road • Hollister, CA 95023 • 831.637.3874



### LOWER RANCH MOTORCYCLE & ATV AREA

Riding Areas and Trails	
	Paved Roads
	Main Park Road
	River or Stream
	Park Boundary
	Easiest Trails
	More Difficult Trails
	Most Difficult Trails
	HHORA Challenge Loop
	Service Roads
	Riding Area
	Tracks
	Special Use Area
	Mini Bike Trail Area
	San Andreas Fault
	Point of Interest
	Ranger Station
	Restrooms
	Showers
	Camping
	Day Use Area
	Wheelchair Access
	Telephone
	First Aid
	One Way Trail
	Two Way Trail
	Air Station
	Gate



### Park Rules and Regulations

You are responsible for knowing park rules and regulations. All provisions of the California Vehicle Code are enforced. A copy may be found at: [www.dmv.ca.gov/pubs/vctop/vcvc.htm](http://www.dmv.ca.gov/pubs/vctop/vcvc.htm). If you have questions, please contact park staff at: (831) 637-3874.

The term OHV means off-highway vehicle. Any motor vehicle operated off-highway is an OHV. A highway licensed vehicle is an

**REACH AND OPERATE ALL CONTROLS:** All operators of off-highway vehicles must be able to reach and operate all controls.

**RED STICKER RIDING SEASON:** Red sticker vehicles are not allowed to operate in the SVRA from June 1<sup>st</sup> - September 30<sup>th</sup>. These dates are established by the California Air Resources Board (CARB) and are subject to change. Please call the park for updated information.

**Ranger Station**  
(first aid, phone)

**Main SVRA Entrance**

# Aerial Imagery





## PRESENCE OF INVASIVE PLANTS

IMPACTS OF INVASIVE PLANT INFESTATIONS  
CAN BE SEEN THROUGHOUT THE ENTIRE PARK



**Vector**

**Campgrounds (highly disturbed areas)**

# Weed Infestations in Campgrounds





**Weed Vector** Trails & Tracks (highly traveled – transport mechanism)

# Weed Infestations at Tracks



# Weed Infestations on Trails



# Weed Infestations on Trails



# Weed Vectors

STAGING AREAS



# Weed Vector



**QUARRY MATERIALS** (contaminated rock and aggregate gets used around park)

## Weeds Spread in Quarry Materials





Added Pressures

OFF-TRAIL RIDING

# Added Pressures



WILD BOAR

## Target Species List

- While there are hundreds of invasive plants in California, early detection focuses on high profile weed species and weeds new to a region or present only in small populations.
- The target species list will factor into timing of surveys.
- There are several ways to craft a target species list.
- Whenever possible align your list with other organizations in your region



# CAL IPC – Cal Weed Mapper

The screenshot displays the Cal Weed Mapper interface. On the left, there is a sidebar with navigation and search options. At the top left of the sidebar is the Cal-IPC logo and a 'Back to Cal-IPC' button. Below this is a 'Search by Species' section with a search box and two legend items: a black dot for 'Indicates species with suitable range map available' and an orange dot for 'Indicates species with statewide expert knowledge'. The 'Search by Region' section shows 'Counties' set to 'San Benito'. Below this is a 'San Benito County' section with a 'Get report for region:' button and options for PDF and XLS downloads. It lists 'Management Opportunities' with counts: Surveillance (102 species), Eradication (14 species), and Containment (125 species). A 'Sort by Cal-IPC Rating' dropdown is set to 'High'. A list of species follows, each with a PDF download icon. The species listed are: *Arundo donax* (giant reed), *Brassica tournefortii* (Saharan mustard, African mustard), *Bromus rubens* (red brome), *Bromus tectorum* (downy brome, cheatgrass), *Carpobrotus edulis* (Hottentot-fig, iceplant), *Centaurea solstitialis* (yellow starthistle), *Cortaderia jubata* (jubatagrass), *Cortaderia selloana* (pampasgrass), *Cytisus scoparius* (Scotch broom), *Delawarea odorata* (Cape-ivy), *Ehrharta calycina* (purple veldtgrass), *Elymus caput-medusae* (= *Taeniatherum caput-medusae*) (medusahead), *Genista monspessulana* (French broom), *Hedera helix* and *H. canariensis* (English ivy, Algerian ivy), *Lepidium latifolium* (perennial pepperweed), *Onopordum acanthium* (Scotch thistle), *Rubus discolor* (Himalayan blackberry), and *Tamarix parviflora* (smallflower tamarisk).

The main map area shows a topographic map of San Benito County, California, outlined in black. The map includes labels for various cities and towns such as San Mateo, Los Gatos, Morgan Hill, Gilroy, Hollister, Castroville, Marina, Salinas, Monterey, Seaside, Gonzales, Soledad, Greenfield, and King City. It also shows geographical features like the San Luis Reservoir, San Joaquin River, and various mountain ranges and valleys.

# Calflora Regional Weed Species List

## Cal-IPC Regional Priorities for Invasive Plant Management

*Concerned with weeds.*

### WEB PAGE

Join this group [▶ 727 members](#)

County WMA partners across California work with Cal-IPC to set early detection and management priorities for their regions, using CalWeedMapper (<http://calweedmapper.cal-ipc.org>). Access regional target lists through this group. (Note: this group was formerly called Invasive Plant Mapping, and accepted data for weed observations. The group no longer accepts data submissions.)

California Invasive  
Plant Council



## SAVED SEARCHES

### OBSERVATION SEARCH:

- [Bay Area region - Eradication and Surveillance targets](#)
- [Central Coast region - Eradication and Surveillance targets](#)
- [Central Sierra region - Eradication and Surveillance targets](#)
- [North Central region - Eradication and Surveillance targets](#)
- [North Sierra region - Eradication and Surveillance targets](#)
- [Northwest region - Eradication and Surveillance targets](#)
- [South Central Coast region - Eradication and Surveillance targets](#)
- [South Central Coast WCB](#)
- [South Coast region - Eradication and Surveillance targets](#)

## PLANT LISTS

[Bay Area region priority species](#)

[Central Coast region priority species](#)

A combination of eradication & surveillance target species lists for the Central Coast region (Monterey, Santa Cruz, and San Benito counties).

## County Weed Species List

*Selected Invasive Weeds  
Of  
San Benito County*

A Field Identification Guide

**Common Name: Poison Hemlock**  
**Botanical Name: *Conium maculatum***  
**Family: Apiaceae**



Poison Hemlock



Flower



Plant Stem

Poison hemlock is a dicot and is a perennial herb that is NOT native to California; it was introduced elsewhere and naturalized in the wild. Poison hemlock is a weed that inhabits disturbed places and wetland-riparian communities. Occurs anywhere between 0 to 5000 feet in elevation. Cal-IPC classifies the statewide impact of poison hemlock as moderate.

This plant is **TOXIC!** Do **NOT** ingest!

**Blooms:** April through July

**Description:** Erect biennial to 3 m tall, with large triangular, dissected compound leaves and usually with purple-spotted or purple-streaked stems. Crushed foliage has a musty odor that often described as similar to mouse excrement. Poison hemlock contains piperidine alkaloids, and all plant parts are highly toxic to humans and animals when ingested. Symptoms of poisoning appear soon after ingestion and include nervousness, trembling, knuckling at the fetlock joints, uncoordinated gait, dilated pupil coldness of the limbs or body, weak and slow heartbeat, coma and death from respiratory paralysis.

**Location within Hollister Hills:** Common along roadsides, pastures, fields, ditches, riparian areas, cultivated fields, waste places, and other disturbed, other moist sites. Found all throughout Hollister Hills.



Immature Plant



Seed Pod

**Common Name: Black Mustard**  
**Botanical Name: *Brassica nigra***  
**Family: Brassicaceae**



Black Mustard



Flower



Plant

Black mustard is a dicot and is an annual herb that is NOT native to California; it was introduced elsewhere and naturalized in the wild. Occurs anywhere between 0 to 4921 feet in elevation. Cal-IPC classifies the statewide impact of this plant as moderate.

**Blooms:** April through August

**Description:** Erect winter annuals, with bright yellow 4-petaled flowers and linear seedpods (3/4 in) that are erect or spreading. Stems coarse-haired. Can grow up to 2-8 feet tall with basal leaves mostly have 1-2 pairs of distinct lateral lobes at the base, terminal lobe much larger than the lateral lobes. Upper stem leaves oblong linear, base tapered, margins entire to toothed or weakly lobed. Black mustard has adapted to periodic fire.

**Location within Hollister Hills:** Common along roadsides, pastures, fields, ditches, riparian areas, cultivated fields, waste places, and other disturbed sites. Found all throughout Hollister Hills.



Immature Plant



Seed Pod

# Winter Weeds

**Common Name: Milk Thistle**  
**Botanical Name: *Silybum marianum***  
**Family: Asteraceae**



Milk Thistle



Thicket



Flower



Seedling



Leaf



Seeds

Milk thistle is a dicot and an annual or perennial herb that is NOT native to California; it was introduced elsewhere and naturalized in the wild. Occurs anywhere between 0 to 1640 feet in elevation. Cal-IPC classifies the statewide impact of this plant as limited.

**Blooms:** April-July

**Description:** Erect winter/summer annual or biennial generally to 2 m tall, with white-variegated prickly leaves. Often occurs in dense, competitive stands. Seedlings are cotyledons broadly obovate, about 1-1.5 cm long, thick, glabrous. First leaf pair alternate, elliptic-obovate, mostly 1-2 cm long, margin prickly-toothed, nearly glabrous. The mature plants have stems that are branched, thick, hollow, ribbed with large wings or spines, and are sparsely hairy. Leaves coarsely pinnately lobed, prickly-toothed, ruffled, nearly glabrous. Upper surfaces shiny green and conspicuously variegated with white. Basal leaves 15-7 cm long. Stem leaves reduced, sessile, and clasping the stem at the base, often curved downward. Flower heads consist of numerous pink to purple disk flowers, base 2-6 cm in diameter, on long stalks. Seeds are mostly lanceolate, 6-8 mm long, slightly flattened, mottled black and brown, with a yellowish ring at the apex. Pappus bristles numerous, minutely barbed, flat, mostly 15-20 mm long, fused at the base to form a ring, detach as a unit.

**Location within Hollister Hills:** Disturbed sites, roadsides, pastures, fields, agronomic crops, waste places, orchards, and trail margins in chaparral and woodlands. Grows best in fertile soils. Found all throughout Hollister Hills SVRA.

**Common Name: Yellow Star Thistle**  
**Botanical Name: *Centaurea solstitialis***  
**Family: Asteraceae**



Yellow star thistle



Thicket



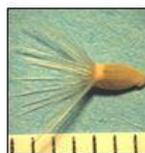
Flowers



Immature Plant



Stem



Seed

Yellow star thistle is a dicot and an annual herb that is NOT native to California; it was introduced elsewhere and naturalized in the wild. Occur anywhere between 0 to 4265 feet in elevation. Cal-IPC classifies the statewide impact of this plant as high. The California Department of Food and Agriculture classifies Italian thistle as a Noxious Weed List C: Control required in nurseries, not required elsewhere.

**Blooms:** June through December

**Description:** Simple to bushy winter annuals with spiny yellow-flowered heads and wiry stems that can grow to 2 m tall. Plants are highly competitive and typically develop dense, impenetrable stands that displace desirable vegetation. Foliage grayish to bluish green, densely covered with fine white cottony hairs that hide most of the stiff thick hairs and minute glandular dots. Seedlings are cotyledons 6-9 mm long, 3-5 mm wide. Later, rosette leaves typically deeply lobed near to the mid-vein, often appear ruffled, lobes most acute, with toothed to wavy margins. Terminal lobe nearly triangular to lanceolate. Both upper and lower surfaces usually densely covered with fine cottony hairs and stiff thick hairs. Flower heads are round to ovoid, spiny, solitary to stem tips, consist of numerous yellow disk flowers. Central spine of main phyllaries 10-25 mm long, stout, yellowish to straw-colored throughout. Lateral spines typically in 2-3 pairs at the base of the central spine. Mature plants can produce nearly 75,000 seeds. Produces 2 types of seeds, both glabrous, mostly 2-3 mm long, base broad. Outer ring of seed dull dark brown, often speckled with tan, lack pappus bristles, often remain heads. Inner seeds glossy, gray to tan to mottled cream-colored and tan, with slender white pappus bristles 2-5 mm long.

**Location within Hollister Hills:** Common along open disturbed sites open hillsides, grassland, rangeland, open woodlands, fields, pastures, roadsides, and waste places. Found all throughout Hollister Hills SVRA.

**Weed Alert!**  
**Stinkwort**



**Stinkwort**  
*(Dittrichia graveolens)*



**Mature Size** Waist



**Description**

- Annual plant to 3 ft. tall
- Branched from base of plant with a "Christmas tree" growth form when young
- Small, 1/3-2/3 in. wide, daisy-like flowers with yellow outer petals and yellow to reddish interiors
- Narrow grey-green leaves are 1-4 in long with serrated edges
- Leaves partially clasp the stalk
- Sticky with a strong camphor aroma plant can cause skin irritation
- Reproduces by seed
- Spread by roads and construction materials
- Native to western Europe, the Mediterranean region, and southwest Asia



**Bloom Period** Sep - Dec

**Habitat** Roadsides, pastures, riparian



**2-Minute Removal** Pull

Image credits: Front top: ©2006 Tom Cochran, Front bottom Regents of the University of California, Back top: ©2006 Tom Hyland by Tim Hyland  
 These cards were adapted from a design by National Park Service

# Summer Weeds

# Survey and Collect Data

1. Location Data
2. Photo
3. Species
4. Weed Infestation Shape
5. Plot Radius
6. Percent Cover
7. Plant Count





# ArcGIS Survey123

## DRD Weed Survey



### Survey 123 Weed Survey

Owner: Nicolas.Somilleda  
Created: 6/23/24 11:26 AM  
Modified: 3/13/25 11:28 AM

Survey to collect spatial and attribute data on weed management locations. This surveys feeds a hosted feature layer that can be used in web maps.

- Collect >
- Inbox >
- Outbox 6 >
- Sent 307 >
- Overview 313 >

## DRD Weed Survey Form

### Photo Point \*

Take photo at eye level, and with the horizon in it.



### Park Unit \*

Hollister Hills SVRA

### Location \*

Name of location where Weed Management Area is located (i.e. trail name, facility name, campground, etc.)

### Weed Species

### Plot Shape

- circular
- rectangular

### Plot Radius

Meters. (measure the radius from the center point of the infestation)

0

## DRD Weed Survey Form

### Plot Length

Meters. (measure the width of the infestation in meters)

0

### Plot Width

Meters. (measure the length of the infestation in meters)

0

### Plot Area

Square Meters. (area calculation in square meters)

0

### Percent Cover

CNPS Percent Cover Chart:(1%, 2%, 3, 5%, 7%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, 50%, 75%, 100%)

### Plant Count

Take a sample and extrapolate out.

### Notes

Any additional notes about the photo location.

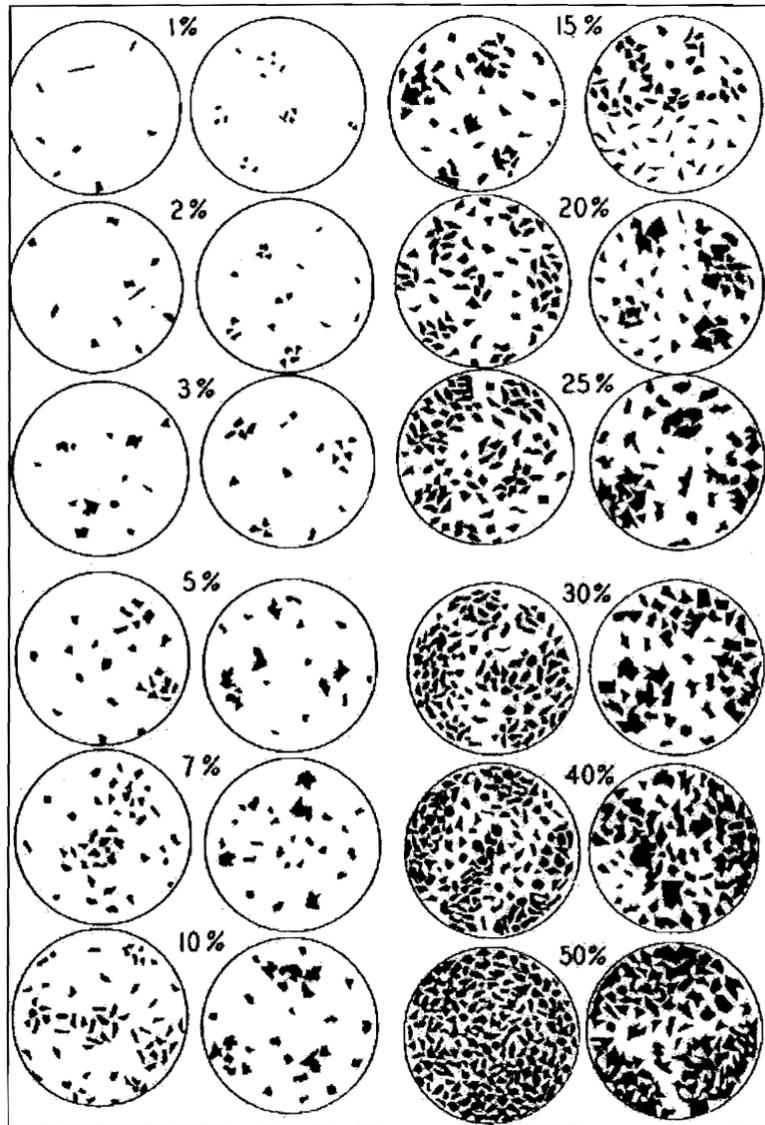
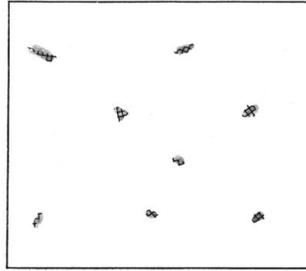


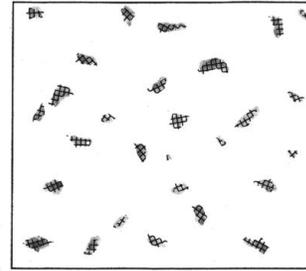
Figure 13-4. Reference plots for cover estimation.

CNPS COVER DIAGRAMS

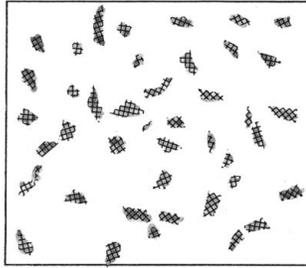
1%



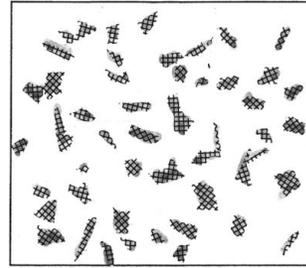
5%



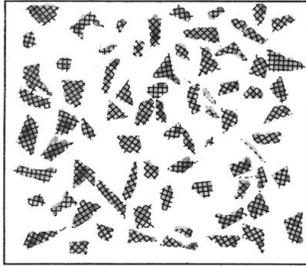
10%



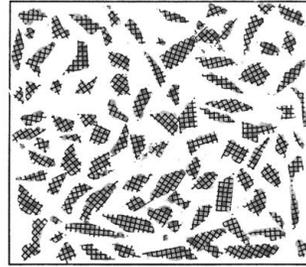
15%



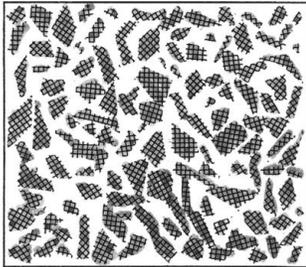
25%



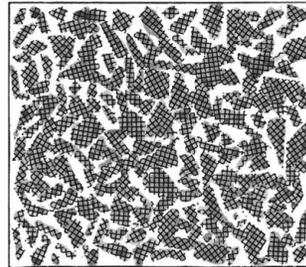
35%



50%



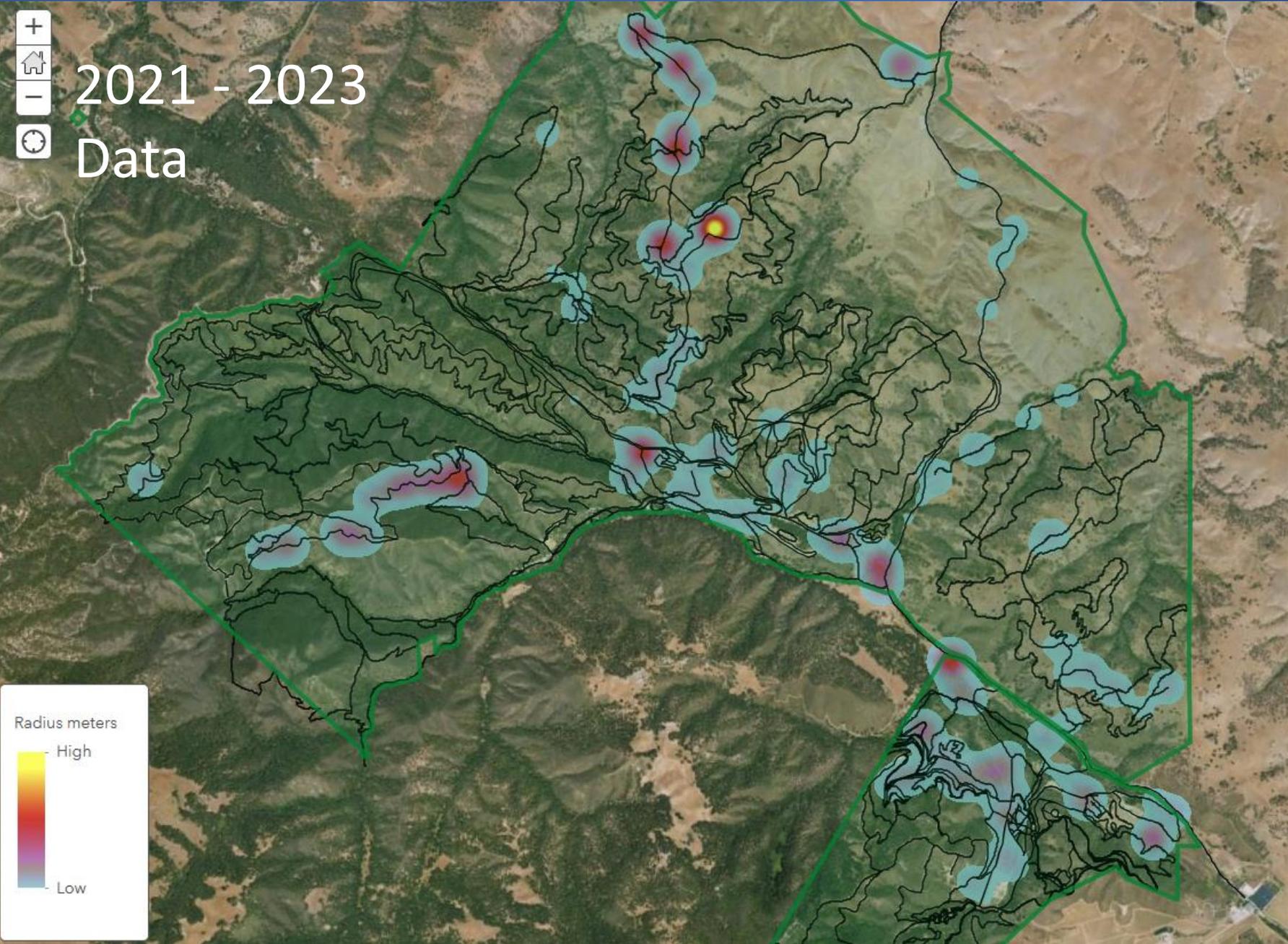
75%



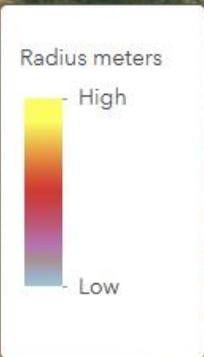


## Welcome!

Welcome to California State Park's ArcGIS Online platform, an account is not required to view many of the great resources built by staff. Use the gallery below and the "View Gallery" button to explore. If you have any questions about this platform or are interested in how you can utilize it please reach out to the Enterprise GIS Team at: [geodata@parks.ca.gov](mailto:geodata@parks.ca.gov)



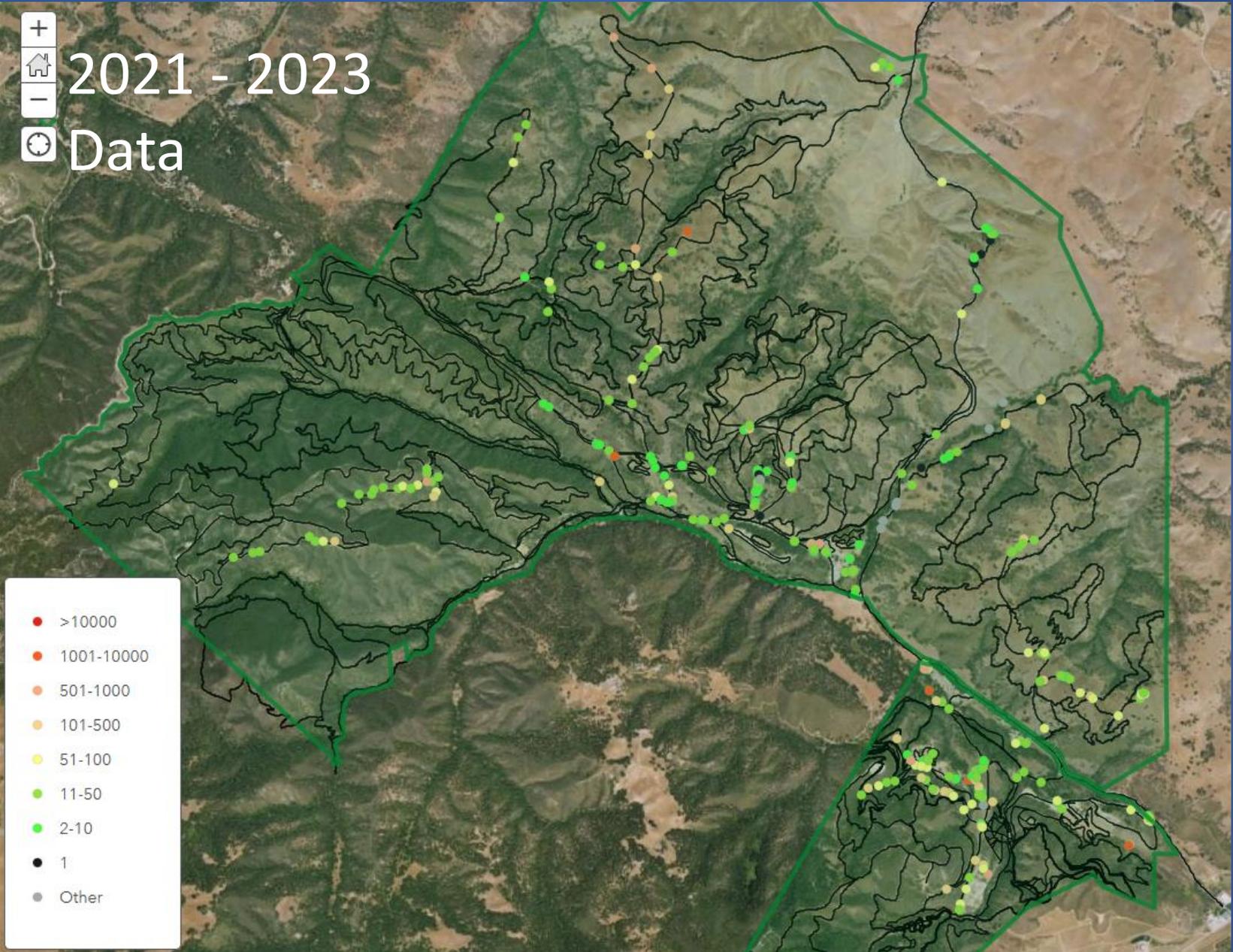
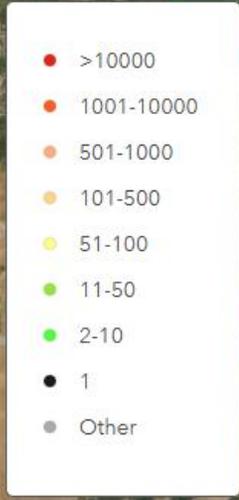
2021 - 2023  
Data

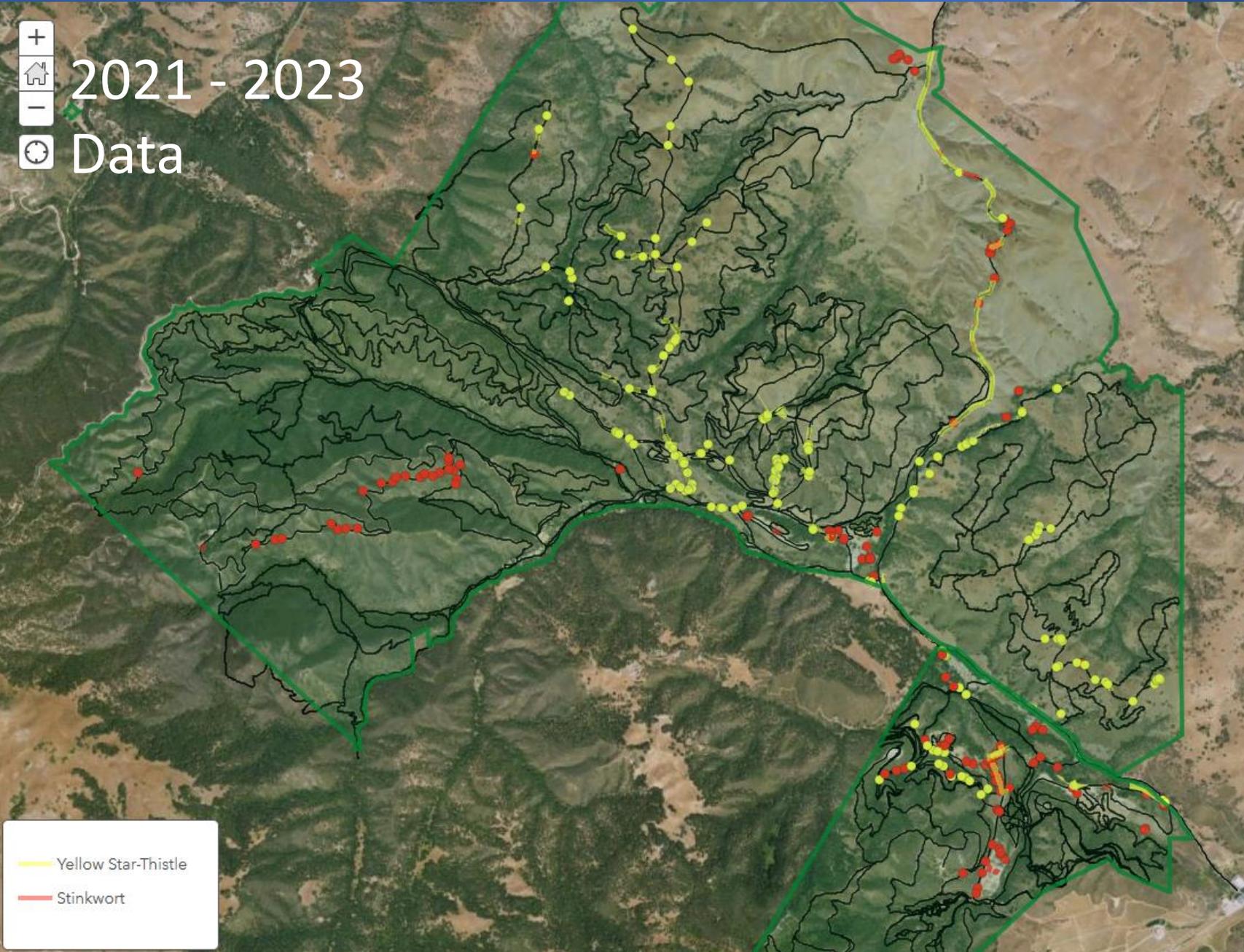




2021 - 2023

Data



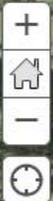


2021 - 2023

Data

- Yellow Star-Thistle
- Stinkwort

2024 Data

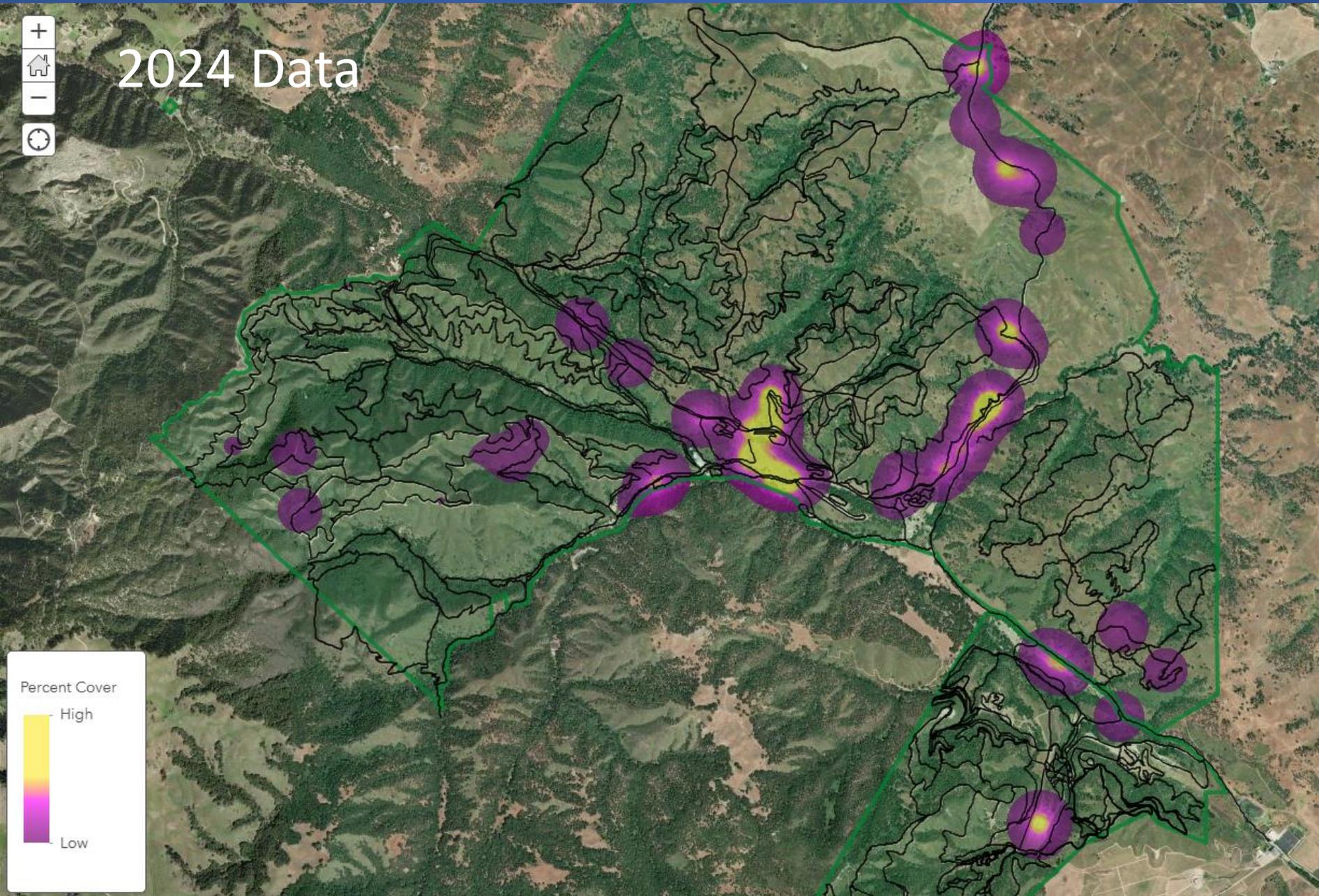


Percent Cover

High



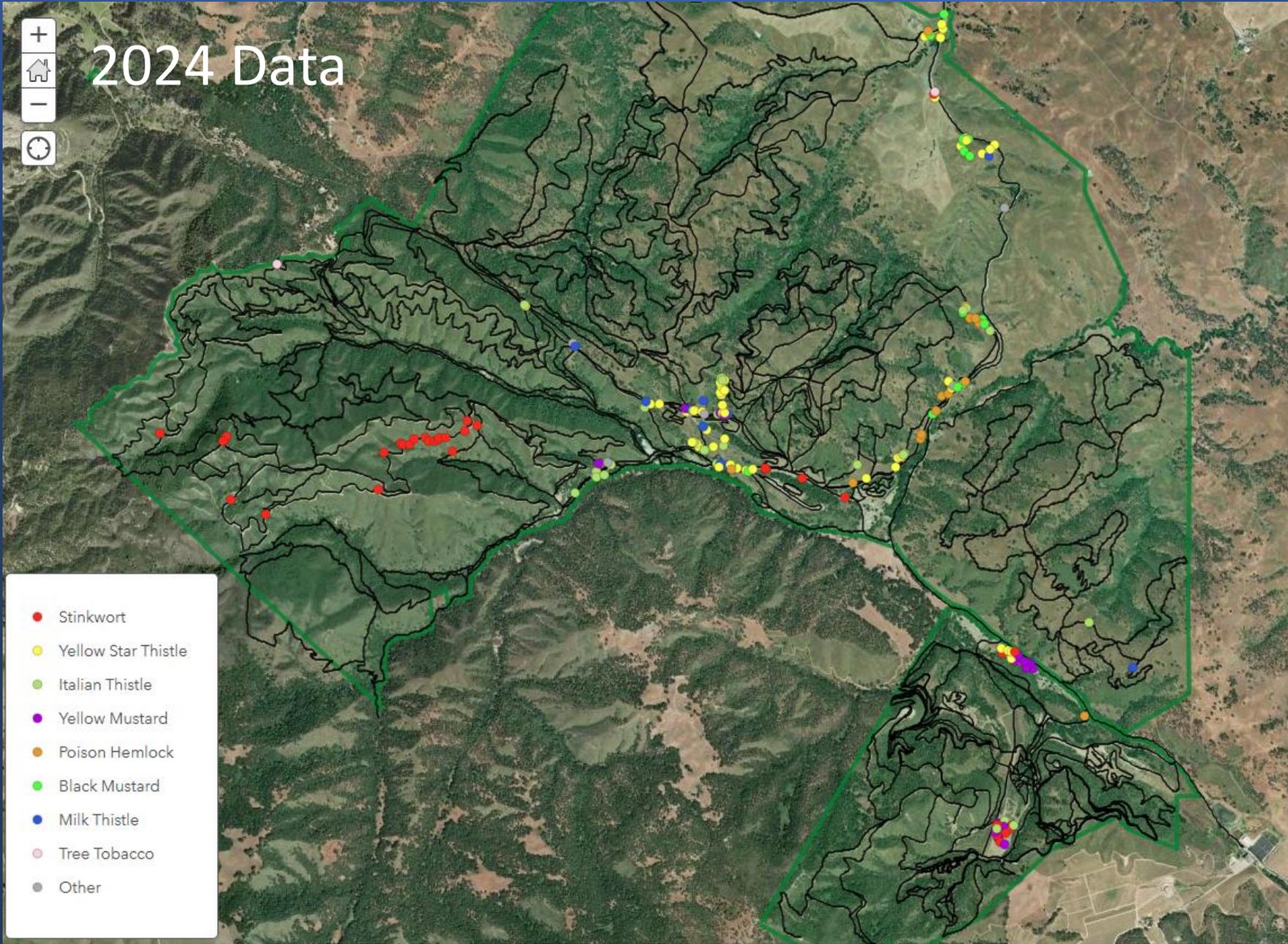
Low



# 2024 Data



- Stinkwort
- Yellow Star Thistle
- Italian Thistle
- Yellow Mustard
- Poison Hemlock
- Black Mustard
- Milk Thistle
- Tree Tobacco
- Other





## INTEGRATED WEED MANAGEMENT PROGRAM

- (Timing) Early Detection / Rapid Treatment
- (Timing) Planned & Coordinated Effort
- Repeat Treatments within the Same Season
- Manage High Visible Areas
- Anchor Points
- Weed Mapping: Web Maps – ArcGis Online
- Partnerships: Weed Management Area (WMA) MOU

# INVASIVE PLANT CONTROL METHODS



EARLY  
DETECTION  
RAPID  
TREATMENT



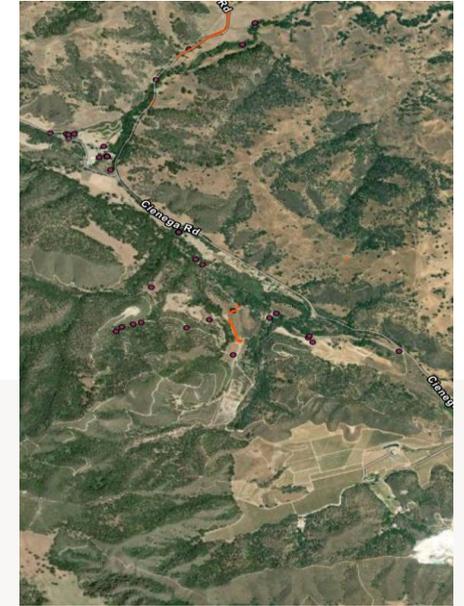
TIMELY  
BRUSHING



MANUAL  
REMOVAL



HERBICIDE  
TREATMENT



WEED  
MAPPING

# Brushing Techniques

- Weed whip down to the knub in large groups working in swaths.
- Weed whip saw heads to cut thick weed thatch.
- Large tractor mowing for multiple seasons in the same fields, before seed, and repeated times in the same season.
- Low mowing.





# Manual Removal Techniques

- Pull and bag, all stinkwort and weed weeds have gone to seed
- Late season pulling of previously treated sites
- Isolated locations
- Small patches
- Large groups at one location

# Spraying Techniques

- Spray after brushing
- Early season spot spraying
- Mid-summer combination spraying
- Late summer Pre-emergent herbicides
- High-pressure spraying
- Boom spraying
- Dye



High Pressure  
Weed Sprayer



Boom Sprayer



# Non-Selective Herbicides

 Roundup PROMAX®  
Herbicide Technical Fact Sheet

April 2010

**INTRODUCTION**

Roundup PROMAX® herbicide is widely used to control weeds and brush in professional vegetation management situations such as roadsides, railroad rights of way, turf management and landscaping. Roundup PROMAX is part of Monsanto's family of glyphosate herbicides, made up of dozens of brands used in agricultural, industrial and residential markets in more than 130 countries worldwide. Various wildlife habitat restoration groups use Roundup PROMAX or similar herbicides in the restoration and management of habitat and refuge areas.

The active ingredient in Roundup PROMAX, glyphosate, is absorbed into the green vegetation and is translocated throughout the plant, including the roots. Glyphosate works by inhibiting production of an enzyme that is essential to formation of essential amino acids in plants. Obvious signs of treatment may not be visible for one to four days in annual weeds and for up to seven days or more in perennials. Visible effects include gradual wilting or yellowing followed by complete browning and deterioration of plant tissue, and ultimate decomposition of the underground roots and rhizomes. Since Roundup PROMAX works only on plants that have emerged through the soil, it will not affect seeds in the soil that have not yet sprouted. When desirable vegetation is in close proximity to weeds, care must be exercised to keep Roundup PROMAX off of green plant tissues.

**INGREDIENTS**

Glyphosate, the active ingredient in Roundup PROMAX herbicide, is formulated as a potassium salt, which makes up 49 percent of the formulation. The non-herbicidally active or inert ingredients are water and a surfactant blend, which is added to aid penetration of the active ingredient through leaf surfaces. The concentrated formulation is diluted with water before application. Most vegetation management situations call for a spray solution of Roundup PROMAX herbicide that is more than 98 percent water.

**HEALTH AND SAFETY STUDIES**

Toxicological testing with laboratory animals serves as a model for evaluating the potential of a substance to cause adverse effects in humans. Roundup PROMAX herbicide has been evaluated in studies with laboratory animals and wildlife species, using levels far greater than the levels that might occur from normal use of the herbicide.

Glyphosate is widely considered by regulatory authorities, scientific bodies and independent scientists to have low acute toxicity, no potential to cause cancer, reproductive problems or birth defects and not bioaccumulate in mammals.<sup>1,2,3,4</sup>

<sup>1</sup> U.S. EPA (1993) Glyphosate Reregistration Eligibility Decision (RED). U.S. Environmental Protection Agency. EPA-738-R-93-014. Washington, DC.  
[http://www.epa.gov/opprrdrl/RED/93/93\\_014\\_glyphosate.pdf](http://www.epa.gov/opprrdrl/RED/93/93_014_glyphosate.pdf)

<sup>2</sup> European Commission. (2002) Report for the Active Substance Glyphosate, Directive 6511/V199, January 21.  
[http://ec.europa.eu/food/fs/afph\\_ps/pro/eva/existing/list\\_1\\_glyphosate\\_en.pdf](http://ec.europa.eu/food/fs/afph_ps/pro/eva/existing/list_1_glyphosate_en.pdf)

<sup>3</sup> WHO/FAO. (2004) Pesticides residues in food – 2004. Report of the Joint Meeting of the FAO Panel of Experts on Pesticide Residues in Food and the Environment and the WHO Core Assessment Group on Pesticide Residues (JMPR). Rome, Italy, 20-29 September 2004. FAO Plant Production and Protection Paper 178. World Health Organization and Food and Agriculture Organization of the United Nations. Rome, Italy.  
[http://www.fao.org/ag/agn/agnp/pesticide/JMPR\\_DOWNLOAD\\_2004\\_report2004jmpr.pdf](http://www.fao.org/ag/agn/agnp/pesticide/JMPR_DOWNLOAD_2004_report2004jmpr.pdf)

<sup>4</sup> Williams GM, Knaes R, Munro IC. (2000) Safety evaluation and risk assessment of the herbicide Roundup and its active ingredient, glyphosate, for humans. Reg Toxicol Pharmacol 31(2): 117-165. doi:10.1006/rph.1999.1371

Page 1 of 6 Copyright 2010, Monsanto Technology LLC.



- Post-emergent
- Rain Ready
- With surfactant

Use Around Water

# Selective Herbicides

Kill Weeds NOT Grass or Forbs

- Pre-emergent
- Can mix with Roundup



### Capstone™ Specialty Herbicide Fact Sheet

**The proven premix with targeted control**

Capstone™ specialty herbicide was developed by Dow AgroSciences to deliver enhanced performance on problem weeds — including noxious and invasive broadleaf weeds — as well as selective control of brush and vines. Featuring an excellent environmental profile, Capstone is available exclusively from Dow AgroSciences to meet the changing needs of professional vegetation managers. This innovative formulation combines fast knockdown power with long-lasting residual control of herbaceous broadleaf weeds and woody plants, including glyphosate-resistant broadleaf weeds.

Capstone is labeled for use on rights-of-way, including roadsides, electric utility and communications transmission lines, pipelines, railroads and nonirrigation ditch banks; forests; Conservation Reserve Program (CRP) sites; industrial sites; natural areas; and grazed areas in and around these areas, and can be applied up to the water's edge.

**Application techniques and timing**

Capstone is selective to most cool- and warm-season perennial grasses, which allows existing grasses to flourish, and is labeled for use in a variety of different ways beyond the proven broadleaf weed control. Research has shown its effectiveness in chemical side trim applications, which affect only the area of target trees that the herbicide solution is applied to, leaving the rest of the tree alive and healthy as long as only the lower and/or mid-canopy branches are treated. This is not true with all species, especially legume species (such as locust), so be sure to check the label, the supplemental label and the Use Around Tree Guidelines Fact Sheet for a full list of species with which caution must be used when applying as a side trim. Capstone also controls many key woody brush and vine species while being selective to desirable grasses in the treatment area.

In forestry settings, Capstone™ specialty herbicide in combination with Accord® XRT II specialty herbicide makes for an ideal site preparation treatment when targeting wilding pine, cedar and select waxy leaved species. For directed spray applications such as low-volume backpack, Capstone has proven effective as a spot treatment to control a multitude of woody plants and vines in areas such as along fencerows, nonirrigation ditch banks, utility poles, guy wires, and forest understory and edges. Capstone provides a unique level of flexibility to users because it is labeled not only for foliar treatments, but also can be used for cut surface applications such as tree injection (hack and squirt) and cut-stump treatments.

Cut-stump applications are made after tree removal with undiluted Capstone by spraying or painting the freshly cut surfaces immediately after cutting (at least within 30 minutes) for optimum effectiveness. The sooner treatments are made the better the control of the target species will be. The cambium area next to the bark is the most vital area to wet. Applications should cover all of the exposed cambium so that a continuous ring of product is applied around the cut surface.

Directions for foliar applications allow treatments to be performed using ground or aerial equipment. Capstone specialty herbicide should not be applied at more than 9 pints per acre per year unless used as a spot treatment (follow spot treatment directions on the label).



### Specimen Label

AMINOPYRALID GROUP 4 HERBICIDE



™/® Trademarks of Corteva Agriscience and its affiliated companies

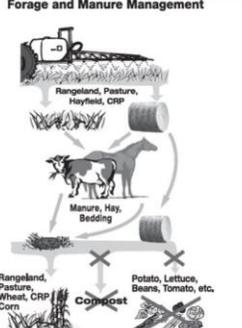
- For control of annual and perennial broadleaf weeds including invasive and noxious weeds, certain annual grasses, and certain woody plants and vines on:
  - rangeland, permanent grass pastures (including grasses grown for hay), Conservation Reserve Program (CRP);
  - non-crop areas for example, airports, barrow ditches, communication transmission lines, electric power and utility rights-of-way, fencerows, gravel pits, industrial sites, military sites, mining and drilling areas, oil and gas pads, non-irrigation ditch banks, parking lots, petroleum tank farms, pipelines, roadsides, railroads, storage areas, dry storm water retention areas, substations, unimproved rough turf grasses;
  - natural areas (open space) for example, campgrounds, parks, prairie management, trailheads and trails, recreation areas, wildlife openings, and wildlife habitat and management areas including seasonally dry flood plains, deltas, marshes, prairie potholes, or vernal pools;
  - including grazed areas in and around these sites.

\*Hay from grass treated with Milestone within the preceding 18 months can only be used on the farm or ranch where the product is applied unless allowed by supplemental labeling.

#### IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT INJURY TO DESIRABLE PLANTS

- Carefully read the section "Restrictions in Hay or Manure Use."
- It is mandatory to follow the "Use Precautions and Restrictions" section of this label.
- Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Hay can only be used on the farm or ranch where product is applied unless allowed by supplemental labeling.
- Consult with a Corteva Agriscience representative if you do not understand the Use Precautions and Use Restrictions. Call 1-800-258-3033 Customer Information Group.

#### Forage and Manure Management



Most Flexible



GOAT GRAZING



# CATTLE GRAZING

- 
- Seasonal
  - Trample and graze on weeds
  - Keep populations subdued and with a mosaic presence
  - Rotational grazing: high intensity low duration within paddocks or smaller pen
  - YST Populations persist into the summer
    - So intense weed whipping of isolated patches have been targeted and timely brushed.

# Prescribed Fire Management Program

- Period of Growth
- Building Capacity
- Improvement and Development
- CalFire Relationship/Local Operating Agreements
- Projects
  - Burn plans in place to burn grasslands that are infested with YST.
  - Kill plants needs good timing, sometimes a logistical and planning challenge.
  - Repeated fires needed for success.





Large scale weed management efforts taking place on a landscape level.

### Project Examples:

- Park entrances
- Tracks
- Quarry
- Main Drag Corridors
- Cienega Road Right-of-Ways
- Grazing
- Fire





## PROJECTS



## PROJECTS



## PROJECTS



# PROJECTS



SUCCESSFUL CONTROL of INVASIVES



**SUCCESSFUL CONTROL of INVASIVES**



SUCCESSFUL CONTROL of INVASIVES