

San Luis Obispo County Weed Management Area

To better serve the SLO WMA community in efforts to educate, coordinate, promote & implement special and ongoing pest management projects.



**SLO WMA Meeting
In Person**
April 27, 2023
2:00-4:00 pm
UCCE Auditorium
2156 Sierra Way
SLO, CA 93401



Photo: Allison Rofe 2022

"Weed of the Quarter" p. 5
Artichoke thistle
Cynara cardunculus

Earth Day and Sustainable Weed Abatement

by Kathryn Holt

Some may ask, what is Earth Day?

Earth Day is an annual celebration that honors past and present environmental achievements as well as raises awareness of environmental challenges and resources that need to be protected for future generations. Earth Day was created by Senator Gaylord Nelson on April 22, 1970. Twenty million Americans participated in demonstrating their support in different U.S. cities across the country. Due to the large impact and societal support Earth Day generated, Congress created a new federal agency called the U.S. Environmental Protection Agency (EPA) to handle environmental issues. In the United States, Earth Day is held on April 22 while the rest of the world celebrates Earth Day when the spring equinox occurs throughout the world.

Today, Earth Day is considered the largest observance in the world in which more than a billion people join every year to recognize this day of action as an opportunity to change human behavior, create global change, and national and local policy changes.



Earth Day addresses many different environmental issues, including sustainable weed abatement of invasive weeds species. Although weeds can be treated with herbicide to eradicate invasive plants in an effective way, herbicide applications have the potential to kill different kinds of bacteria, fungi, and protozoa that fight against disease causing microorganisms which can then disturb the balance of pathogens and beneficial organisms that support healthy plant growth. For homeowners and gardeners who wish to reduce or eliminate their usage of herbicide when treating weeds, sustainable weed management offers some alternative removal methods.

Some of the goals of sustainable weed management include utilizing available resources to control weeds, management techniques that improve soil quality and ecosystems, and raising awareness of sustainable practices in general. Sustainable methods of weed control involve crop rotation, cover crops, mulching, tillage systems, hand pulling, and intercropping to reduce the growth and expansion of weeds.

continued on page 2

continued from page 1

According to the article “Ecological Weed Management: Practices and Methods”, crop rotation is a major form of weed management since the rotating of crops prevents weeds from thriving in undisturbed conditions through tilling the soil and planting new crops to disturb weed growth. Cover crops reduce weed growth by preventing light from reaching ground level weed seeds and keep them from germinating. Examples of good cover crops to incorporate into your fields include buckwheat, radish, cowpea, clover, or forage.

Mulching has a similar effect as cover cropping with the goal to prevent weed growth by covering the soil with single or multiple layers of living, organic, or inorganic mulch.

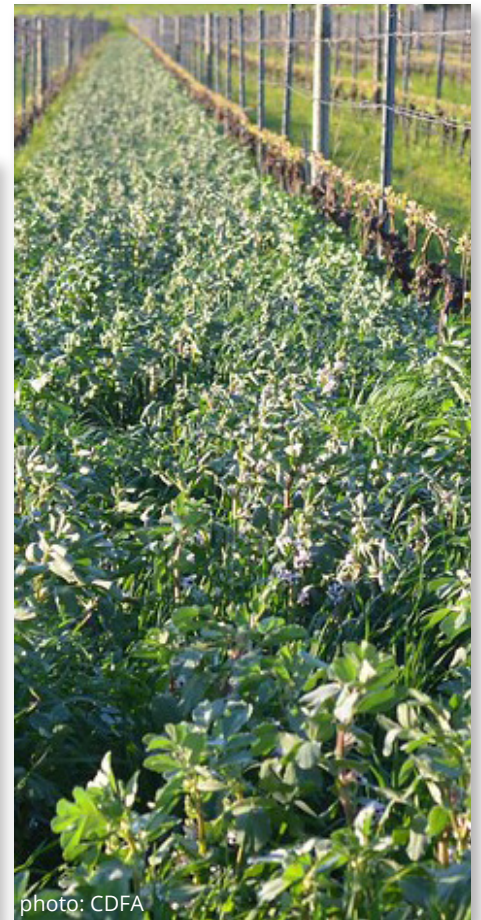
Lightly tilling the soil before planting a crop disturbs weed seedbanks and weed germination. Fields that are not tilled are reported to have seeds bank deposits on the top five centimeters of a soil layer.

Another method of removing weeds involves pulling weeds by hand which can be efficient in gardens or smaller more manageable crop settings. Shovels, hoes, and other garden tools help make hand pulling weeds more efficient and successful. Lastly, intercropping involves the implementation of a new crop in between rows of the main crop. This method of leaving little to no room for weeds to grow has proven to be effective in reducing invasive species within crop fields. It is important to select intercropping species that will not over compete with the main crop for light, water, and other essential nutrients that the main crop needs to grow successfully.

By using ecological weed management techniques to reduce invasive species without the use of potentially harmful herbicides can be beneficial in promoting healthy plant growth while reducing unwanted weed germination.

Links to works cited:

- [National Geographic/Education: Earth Day](#)
- [US EPA History: The First Earth Day](#)
- [Earthday.org: The History of Earth Day](#)
- [GeoPard Agriculture: What is Ecological Weed Management?](#)



The Coastal San Luis Resource Conservation District (CSLRCD) Activities

by Samantha Alvarez and Mark Skinner

The CSLRCD has been active in invasive species removal in the Guadalupe-Nipomo Dunes and Morro Bay.

In the Guadalupe-Nipomo Dunes, CSLRCD has been removing perennial veldt grass (*Ehrharta calycina*), Russian wheatgrass (*Elymus farctus* ssp. *boreali-atlanticus*), freeway ice plant (*Carpobrotus edulis*), narrow-leaved ice plant (*Conicosia pugioniformis*), Jubatagrass (*Cortaderia jubata*) and purple ragwort (*Senecio elegans*).

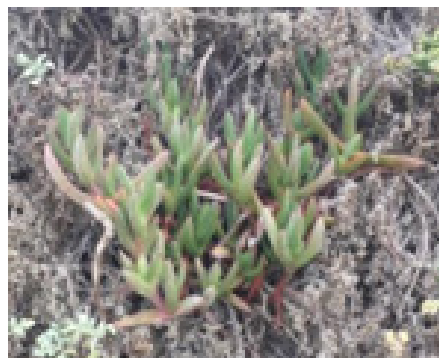


Veldt grass

has been plaguing the dunes since the early-20th Century, threatening the survival of rare native plants such as Nipomo lupine (*Lupinus nipomensis*) and dune larkspur (*Delphinium parryi* ssp. *blochmaniae*). CSLRCD joined California State Parks staff in manually removing veldt grass in the Nipomo lupine habitat in plots west of the Phillips 66 refinery on the Nipomo Mesa. This has led to an increased presence of Nipomo lupine.

Russian wheatgrass

has been nearly eradicated and is reduced to two plots at Arroyo Grande Creek and a plot at Carpenter Creek (the only place in California with this infestation).



Carpobrotus



Conicosia

The ice plants

are aggressive and require ongoing herbicide applications. CSLRCD has treated *Carpobrotus* and *Conicosia* west of the railroad tracks near Phillips 66. These plants are widespread in the dunes and require a sustained effort.

continued on page 4



Purple ragwort

is present south of Oso Flaco Lake and is manually removed. They're prolific, fast growing, and require annual monitoring.

In the Morro Dunes Natural Preserve,

we have aided California State Parks in removing invasive ice plant on the sandspit at Moñtana de Oro. The project's purpose was to completely eradicate ice plant from the preserve to allow the re-colonization of native plants in addition to the expansion of open sandy areas between the high tide line and foredunes to enhance the western snowy plover habitat.

The Preserve extends almost 700 acres in total, with ice plant extending over approximately 400 acres. About 150 of the 400 acres were considered high-density. Due to its widespread growth, form, and frequent occurrences throughout California, efforts to manage ice plant often progress slowly.



CSLRCD surveyed sites

within areas of ice plant removal and revealed that with the eradication of ice plant, other species rapidly move in and recolonize the area. The reintroduced species create stability, elevate biodiversity, and help transition the Preserve back to a more native state. The increase in species diversity in a majority of the sites surveyed demonstrates the success of the restoration work that has been ongoing since 2018.

This project brought together multiple agencies that each devoted considerable efforts to help benefit the greater ecological community at the Morro Dunes Natural Preserve. While other invasive species still impact the Preserve, the management of, and significant decrease in, ice plant throughout the

Preserve has already shown an increase in native biodiversity and overall improvement to the ecology of the sand dunes.



Jubatagrass

has long been a target in the dunes. A large group was treated with herbicide at Grand Ave and Hwy 1. It has been eradicated south of Oso Flaco Creek.



Weed of the Quarter

By James Moore

This quarter we highlight yet another well-known weed, one that is present in our county with pockets of heavy infestation, and yet manageable in distribution overall: **Artichoke thistle, *Cynara cardunculus* (AT)**. Yet another in a long list of thistles that are present in our weed management area, this one, like the others, has a nasty habit of infesting open rangeland and fields, reducing available grazeland to livestock herds, and decreasing recreational value through limiting access to once-open areas.

The earliest observation in the Calflora database of this weed in San Luis Obispo County is from 1964. Many additional observations have been made since then. A close look at the catalog of observations in Calflora provides those of us interested in land management with a good look at the job before us if we wish to control this weed. One very prominent and obvious location is along Hwy 1, near California Men's Colony (CMC), on the Mainini Ranch, and around the new solar array recently installed to serve both Cal Poly and CMC. Current efforts have been made to control the infestation on the Mainini Ranch, and plans are being formulated to work on control around the solar array on the north side of Hwy 1 as well; those familiar with this location will recognize the progress being made in that effort.

AT is an herbaceous perennial in the Asteraceae family. It is a native of the Mediterranean where it was cultivated for food in ancient times and still occurs as a wild specimen.



Photo: 2008 Neal Kramer



Photo: CDFA

Preferring disturbed open areas such as rangeland and grasslands, this plant grows up to 6 feet tall and typically spans a width of 4 to 6 feet. The grey-green leaves are deeply lobed, ending in long yellowish spines and can grow up to two feet long. Flowers typically emerge from the center of the plants on long spiny stalks, each capable of terminating in several flowers. The flowers are typically about 2 inches wide and are purple, surrounded at the base by long spines.

Formidable as the plant may seem, it is very responsive to treatment with several different types of herbicide. Triclopyr, clopyralid, imazapyr and glyphosate all show good results when treatments are timed appropriately. Herbicides are most effective when they are translocated

by the plant into the root, thereby killing the deep taproot indicative of this plant. Mechanical removal is also effective when the taproot is adequately removed. Seeds remain viable in the soil for about 5 years, so long-term control can be gained through a relatively short time frame.

This thistle, like so many other invasive thistles, will likely never be eradicated in our county, let alone our state. But there are several opportunities to control diverse populations of AT in our management area. By using our networking through this group and others like it, we can have a positive impact on control efforts with this species.

Links to sources:

[UC Davis Weed Control Notes](#)
[Cal-IPC Plant Profile](#)
[Weed Mapper AT Distribution](#)



Photo: hawaiiitech.com

A Guide to Pressing Weeds for an Herbarium

By James Moore

Correct weed identification is the most important step of weed management. An herbarium is a stored collection of dried plant specimens, usually mounted and systematically arranged for reference. A properly identified and preserved herbarium can be used to help identify weeds for years and give you the information you need to make proper decisions about management practices. Anyone can make an herbarium by following the steps listed below.

Supplies:

- Digging tool: Small gardening shovel or foldable shovel
- Trimmers: Small pruners, pruning saw or other small cutting tool
- Specimen containers: Sealable plastic bags, plastic containers, backpack, etc.
- Notebook
- Plant Press (Figures 1 & 2)

Fig. 1

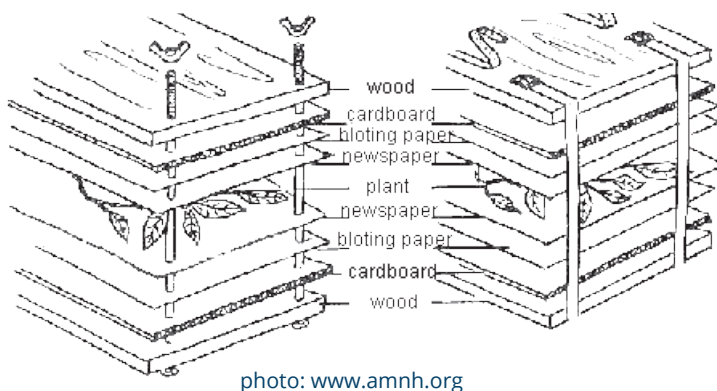


Fig. 2



1. Collecting specimens

- Take note of the location you are collecting from
- The ideal specimen has all identifying characteristics.
 - Leaves, flowers, twigs, fruit, seeds, roots, stem
 - Leaf shape, size, and arrangement
- Label collected sample (see "Labeling" below)

2. Preserving specimens (Pressing/Drying)

(Figure 3)

- Pressing
 - Clean off the plant
 - Lay it out how it should look when dry
 - Both sides of leaves should be displayed
 - Display flower to see all key features
- Wrap specimen in newsprint, press, and close the press tightly.
- Drying
 - Should be in a dry area with air flow
 - Temperature should not exceed 100°F

Fig. 3



continued on page 7

...Herbarium

3. Identifying specimens

- Identifying the specimen before drying is the best way to go, but it is still possible after it is dried and stored.
- Even if you recognize the plant, double check with reference guides or botanical keys.

4. Labeling (Figure 4)

- Names (Scientific, Common)
- Collection site
- Date collected
- Habitat of plant
- Notes & collection number
- Name of collector

Fig. 4

ONAGRACEAE
<i>Oenothera clelandii</i> Wagner
Cleland's evening primrose
WISCONSIN, Iowa Co. Dry prairie along RR track, N of Helena, 3/4 mi. N on Hwy C from Hwy 14. T8N, R4E, NE 1/4 Sec 16
43°10'23.99"N 90° 1'17.05"W
Scattered individuals, to 1 m high, corolla yellow. Growing with <i>Froelichia floridana</i> , <i>Desmodium</i> sp.
21 Sept. 1985 Sytsma 5013

Fig. 5



5. Mounting (Figure 5)

- Use medium-weight, acid-free buffered paper.
- Neutral-pH formulation of polyvinyl acetate (PVA): a white glue like Elmer's
- Arrange the specimen
- Glue the specimen
- Allow the glue to dry

6. Storing

- Once specimens are pressed, store in plastic sleeves in a tightly sealed box.
- If specimen might have insects on them, put in freezer in a sealed box after dried (-10 ° F for three days)
- Storage area should be cleaned and monitored for infestations.

Links to sources:

[Montana State University Extension Service: How to Collect, Press, and Mount Plants](#)

[Fort Worth Botanic Garden: Pressing & Drying](#)

[The Nat | San Diego Natural History Museum: Making a Plant Collection](#)

[American Museum of Natural History: How to Press and Preserve Plants](#)

[Stanford University/Jasper Ridge Biological Preserve: Herbarium of yellow star thistle](#)

SLO CAC Survey, Treatment & Removal Work

Here's what the SLO CAC has been up to in the months since our January meeting:

- Treated 195 miles of roadsides for yellow starthistle
- Treated artichoke thistle on 165 acres
- Spent 47 hours hand-removing broom
- Surveyed 53 acres of land

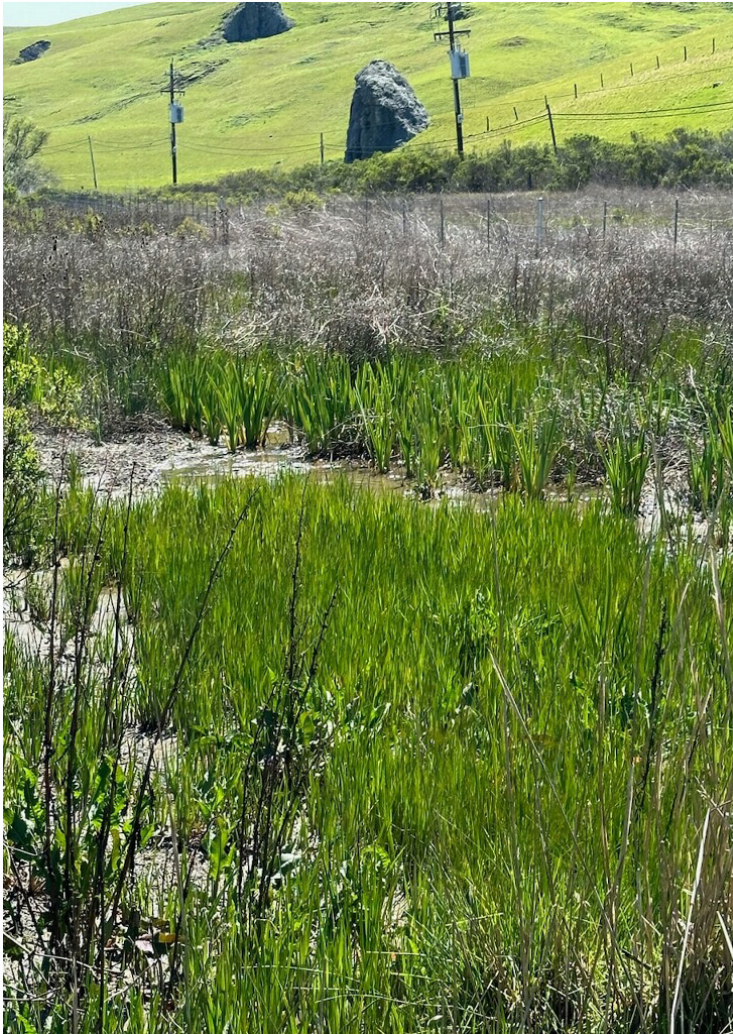


Photo: Jonathan Briggs
yellowflag iris (*Iris pseudacorus*) Hwy 1 x Hwy 46, 2023



Photo: Kathryn Holt
artichoke thistle (*Cynara cardunculus*) Slack St, San Luis Obispo, 2023



Photo: Kathryn Holt
artichoke thistle (*Cynara cardunculus*) Slack St, San Luis Obispo, 2023

Co-Chairs

Jon Hall, Land Conservancy of SLO
jonh@lcslo.org

James Moore, SLO CAC
jmoore@co.slo.ca.us

Amy Smart, Upper Salinas-Las Tablas RCD
amy@us-ltrcd.org

SLO CAC

Karen Lowerison, Deputy Ag Comm
klowerison@co.slo.ca.us

James Moore, Ag Inspector/Biologist
jmoore@co.slo.ca.us

Zella Redus, Ag Inspector/Biologist
zredus@co.slo.ca.us

Tom Donlon, Ag Inspector/Biologist
tdonlon@co.slo.ca.us

Pedro Murguia, Ag Inspector/Biologist
pmurguia@co.slo.ca.us

Jocelyn Prieto-Garcia, Ag Inspector/Biologist
jprietogarcia@co.slo.ca.us

Doris Thirup, Ag/Wts & Meas Technician
dthirup@co.slo.ca.us

Jonathan Briggs, Ag/Wts & Meas Technician
jbriggs@co.slo.ca.us

Kathryn Holt, Ag/Wts & Meas Technician
kholt@co.slo.ca.us

CeRae M. Speidel, Ag Inspector/Biologist
Newsletter & website
cspeidel@co.slo.ca.us

SLO CAC Main Office

2156 Sierra Way, Suite A
San Luis Obispo, CA 93401

Phone: 805.781.5910
email: AgCommSLO@co.slo.ca.us
Fax: 805.781.1035

Thank you SLO WMA
members and readers!

Reach out to be part of
our next newsletter or to
join our mailing list!

AgCommSLO@co.slo.ca.us

[www.cal-ipc.org/solutions/wmas/
san-luis-obispo-wma/](http://www.cal-ipc.org/solutions/wmas/san-luis-obispo-wma/)



UPPER SALINAS-LAS TABLAS
RESOURCE
CONSERVATION DISTRICT

