



## Garden Learning – Chaparral Plant Community

The Garden Learning program is a monthly publication that provides volunteers information about a specific area in the Forrest Deaner Native Plant Botanic Garden. As we learned in the September edition, there are six demonstration gardens and 5 plant community areas. This month we will focus on the Chaparral community area.

The Chaparral community is located on the western edge of the Garden, shown in the chart below.



In last month's edition we investigated the Coastal Sage Scrub community and learned that it is also called the "Soft Chaparral" community because its shrubs are not densely-spaced or as rigid as those in a Chaparral community. In addition, the leaves in a soft chaparral area are not as thick and tough and drought tolerant as Chaparral. So with that knowledge we would expect a Chaparral area to be densely populated with thick, tough, drought tolerant scrubs. These sound like tough plants that would be found in a tough environment.

Well, it turns out that the Chaparral community in California is only found in a few other places on Earth. California has a history of some very long, hot droughts and

the plants of Chaparral communities must have figured out how to survive during these dry periods. The California Academy of Science website describes these characteristics in the following:

Mediterranean shrublands dominate California's landscapes covering 8.5 % of the state. Globally, they hold more than 20% of the Earth's plant diversity. Exposure to the sun, temperature, moisture and soil composition all determine what plants live there.

California is 1 of just 5 places in the world with a Mediterranean climate where these shrublands grow. This rare type of climate is characterized by mild, wet winters and dry summers. As a result, California's growing season occurs in the wet winter, while the dry summers are the dormant season. Temperatures are subtropical with a cold ocean influence that often results in summer fog along the coast. The most prominent plant communities of California's Mediterranean shrublands are chaparral and coastal sage scrub. Chaparral is dominated by woody shrubs with hard, leathery leaves. Coastal sage scrub consists mainly of low-growing aromatic vegetation with soft foliage.

So, native Plants of the Chaparral community are summer drought tolerant with sclerophyllous evergreen leaves. It is easy to figure out what "evergreen" leaves might mean, but what is a sclerophyllous leaf? The word originates from the combination of the Greek words "sclero" which means "hard" and "phylon" which means leaf. The word is also used to

describe the inter-node spacing between the leaves on the stem. Sclerophyllous plants have short spacing between leaves on the stem. Therefore, we would expect plants of the Chaparral community to have hard leaves with short inter-nodal leaf spacing. This makes perfect sense. The leaves are hard in order to protect against the hot dry summer months.

Chaparral plant seeds are also hard because of this reason; they need to survive the hot summer to be ready to grow in the rainy season. Some plants have taken this survival tactic to the extreme so that only the hot temperatures produced by a fire can crack them open! Lucky for them, nature provides a fire source every 10 to 100 years in California: lightning strikes. The plants that are able to live in the chaparral community end up also being the plants that can survive a wild fire.



You might be happy to know that we do not have to burn the Chaparral plant community in our Garden to get new baby plants. Our own Solano County Chapter (Willis Linn Jepson Chapter) of the California Native Plant Society (CNPS) has a very capable propagation team which is experienced in growing Chaparral plants from seeds.

## Native Plants of the Chaparral Plant Community

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The Chaparral community consists of **21** species of perennials, shrubs, trees, and **1** vine native to Solano County. Several are special in that they are only found in California or the western region of North America. These are notated in the lists below with the following symbols:

In addition, the Bay Area has many native plant nurseries that germinate (grow) Chaparral plants or can order the more difficult ones to find.

Finally, there are books and publications devoted to propagation methods like the “Seed Propagation of Native California Plants” by Dara E. Emery. This book outlines several techniques that can be used for growing Chaparral plants from seeds including:

- Hot Water – drop the seeds in 180-220 F and let cool for 24 hours
- Dry Heat – Use incubator ovens in heat of 180-220 F
- Charate – Use the char from burned or baked plants like *Adenostoma fasciculatum* and grind to plant with the seeds of the desired plant

Did you ever think there was so much to learn about our little native plants?

The next section lists the native plants that are in the Forrest Deaner Native Plant Botanic Chaparral plant community.

**C** Found in California Only

**C+** Found in California and only slightly beyond the borders of CA

**W** Found in western North America Only

**CSS** Also Found in Coastal Sage Scrub

### Perennials:

| Scientific Name         |                      | Common Name             | Family           |
|-------------------------|----------------------|-------------------------|------------------|
| Castilleja foliolosa    | <b>C+</b> <b>CSS</b> | Wooly Indian Paintbrush | Scrophulariaceae |
| Eriogonum nudum         | <b>W</b>             | Naked Stem Buckwheat    | Polygonaceae     |
| Lepechinia calycina     | <b>C</b> <b>CSS</b>  | Pitcher Sage            | Lamiaceae        |
| lessingia filaginifolia | <b>C+</b>            | California Aster        | Asteraceae       |
| Aster chilensis         | <b>C+</b>            | Coast Aster             | Asteraceae       |

### Shrubs:

| Scientific Name                       |                     | Common Name          | Family          |
|---------------------------------------|---------------------|----------------------|-----------------|
| Adenostoma fasciculatum               | <b>W</b>            | Chamise              | Rosaceae        |
| Arctostaphylos glandulosa ssp. Mollis | <b>C</b>            | Eastwood's Manzanita | Ericaceae       |
| Arctostaphylos Manzanita              | <b>C</b>            | Common Manzanita     | Ericaceae       |
| Arctostaphylos tomentosa              | <b>C</b>            | Wooly Leaf Manzanita | Ericaceae       |
| Ceanothus cuneatus                    | <b>W</b> <b>CSS</b> | Buckbrush            | Rhamnaceae      |
| Cercocarpus betuloides                | <b>W</b>            | Mountain Mohogany    | Rosaceae        |
| Eriodictyon californicum              | <b>W</b> <b>CSS</b> | Yerba Santa          | Hydrophyllaceae |
| Fremontodendron californicum          | <b>W</b>            | Flannel Bush         | Sterculiaceae   |
| Holodiscus discolor                   | <b>W</b>            | Cream Bush           | Rosaceae        |
| Mentzelia laevicaulis                 | <b>W</b>            | Blazing Star         | Loasaceae       |
| Oemleria cerasiformis                 | <b>W</b>            | Oso Berry            | Rosaceae        |
| Prunus ilicifolia                     | <b>C+</b>           | Hollyleaf Cherry     | Rosaceae        |
| Rhamnus californica                   | <b>W</b> <b>CSS</b> | Coffeeberry          | Rhamnaceae      |

### Trees:

| Scientific Name   |                     | Common Name     | Family    |
|-------------------|---------------------|-----------------|-----------|
| Arbutus menziesii | <b>W</b> <b>CSS</b> | Pacific Madrone | Ericaceae |
| Quercus agrifolia | <b>W</b> <b>CSS</b> | Coast Live Oak  | Fagaceae  |
| Quercus lobata    | <b>C</b> <b>CSS</b> | Valley Oak      | Fagaceae  |

## Vines:

| Scientific Name           |                     | Common Name        | Family        |
|---------------------------|---------------------|--------------------|---------------|
| <i>Clematis lasiantha</i> | <b>W</b> <b>CSS</b> | Chaparral Clematis | Rununculaceae |



Woolly Indian Paintbrush  
(*Castilleja foliolosa*)  
© 2009 Norma Deaner



Blazing Star  
(*Mentzelia laevicaulis*)  
© 2010 Norma Deaner

## Native Plant Featured this Month

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This month's Native Plant of Month is the Aster Chilensis, known by its common name Coast Aster. This plant has a flower that looks like a common daisy. The Coast Aster is a perennial herb that grows primarily on the coast of California and in a very interesting place in Solano County: the Jepson Prairie Reserve (Solano Land Trust). This reserve is special because it

protects one of the best remaining vernal-pool habitats in the world (400 species, 64 families of plants, 15 rare and endangered plants). Vernal pools are formed in areas that have hard-clay surfaces, a rainy season, followed by a harsh dry season. Water pools up on the clay surface and is left there to evaporate over a longer period of time. This creates a time-sensitive cycle of growth and hibernation and would you believe there are plants that thrive in exactly this environment!

As previously stated, the Coast Aster is found along the CA coast and can easily be found in northern counties. CALFORA has many documented cases in Monterey, Marin, Mendocino, Humboldt, and a few in Santa Barbara. The stems of the Coast Aster are sturdy and the plant can survive dry periods.

From CALFLORA:

*Aster chilensis* Nees

*California Aster, common California aster*

*Aster chilensis*, a dicot, is a perennial herb that is native to California and is found only slightly beyond California borders.

Communities: Yellow Pine Forest, Chaparral, Valley Grassland, (many plant communities), Mixed Evergreen Forest, Foothill Woodland, Freshwater Wetlands, wetland-riparian

Habitat: freshwater-marsh [Walker]

Wetlands: equally likely to occur in wetlands or non wetlands [U.S. Fish & Wildlife Service.]

Toxicity: DERMATITIS [California Poison Control System 2010]

Elevation: between 0 and 4500 feet

Family: Asteraceae



Coast Aster (*Aster chilensis*)  
© 2009 Norma Deaner

## Invasive Plant Featured this Month, otherwise known as “Weed of the Month”

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This month’s edition “Weed of the Month,” is the “Convolvulus Arvensis” known by its common name “Morning Glory”. This weed is not native to California and when given a chance will entangle itself around the branches of natives. Do not be fooled by its pretty pink flowers, this vine can get out of control and inhibit the growth of natives. When removing this weed, make sure not to pull its vine because it will tear off the leaves of its host native.

From CALFLORA:

### **Convolvulus arvensis L.**

*Orchard Morningglory, bindweed, field bindweed*

Convolvulus arvensis, a dicot, is a **perennial herb or vine** that is **not native** to California; it was introduced from elsewhere and naturalized in the wild.

In the 2006 weed list, the [California Invasive Plant Council \(Cal-IPC\)](#) evaluated Convolvulus arvensis but did not list it ([plant assesment form](#)).

Convolvulus arvensis is also classified by the California Department of Food and Agriculture as a **Noxious Weed List C**: Control required in nurseries, not required elsewhere. [[CDFA Weeds 2000](#)]

Communities: weed, species characteristic of disturbed places  
Habitat: disturbed [[Walker](#)]  
Elevation: between 0 and 4921 feet  
Family: **Convolvulaceae**



Convolvulus arvensis (morning Glory)  
© 1999 Nick Kurzenko

## Puzzlers Page

**Plant Riddle:** What Plant am I?

**Word Search:**

X M P C K E K P G Q H C F S O U W M S B E P M  
K V G K U I I E C P S L G K B D V A Q Y S T N  
E A V D Q H S N F C H J Z M C M L J R N I C B  
Z L O Q D S V O A J X Z D O J N W R N Z Q F J  
S L J E F U D R W U B D F S D J E D T N P H L  
B E D E V Y V D Z I O F W W V B M N C I D X H  
Q Y Z B K I N A Z N E X I O O F R J T U O F O  
B O E K L Z L M E E D W K S V F N C A Z Q N E  
W A J R D A K T B Z Z J O F B W H S Q P R U U  
A K A D B J Z E S L U C S U C E L E S K J K Z  
A G X I E A R I G A O A C Y R O S U J Z E R B  
Z P M O R R S Q N A O K J S N I H R I Y E F W  
L N A O Y W F A S G B C A V M T C H U D B K N  
V B Q I P G M T N R S G L A O X O K C F G Q X  
M F D C H U A Z U T E T H N J Z R E E A M W R  
L H L M H S G S L V A C A P Q Q A L U X P Q S  
H M E H T K H U J A E E M R X I I P Z N B G C  
P H I E W G G B H W C J I A Z K I L S X V U T  
X N R Z B R C I D M E N N L V R F S D P A R D  
I T H D R V U L P D M E H X D N Y J Q R T O Q

Blazing Star  
Chamise  
Coffeeberry  
Pitcher Sage

Buckbrush  
Coast Aster  
Madrone  
Valley Oak

Ceanothus  
Coast Live Oak  
Oso Berry  
Yerba Santa

## Test your Learning

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*Question 1:* What percent of the California landscape is covered with “shrublands” – plant communities like the Chaparral and Coast Sage Scrub.

*Question 2:* What is the definition of a sclerophyllous plant?

*Question 3:* What are three ways to locate Chaparral baby plants in Solano County for your own Garden?

*Question 4:* Where does the Coast Aster grow in California?

*Question 5:* What is “good” about the noxious weed *Convolvulus arvensis*?

## Read more about this Month’s Topics at these References:

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CALFLORA: <http://www.calflora.net/botanicalnames/plantcommunities.html>

Academy of Science:

[http://www.calacademy.org/exhibits/california\\_hotspot/habitat\\_mediterranean\\_shrublands.htm](http://www.calacademy.org/exhibits/california_hotspot/habitat_mediterranean_shrublands.htm)

Environmental Friendly Fire Safety Information: [www.firewise.org](http://www.firewise.org)

“Seed Propagation of Native California Plants” by Dara E. Emery, the Santa Barbara Botanic Garden, (C) 1988

University of California - Davis Jepson Prairie Preserve:

<http://nrs.ucdavis.edu/jepson.html>

## **Answers to Last Month's "Test your Learning":**

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*Answer 1:* Another word for Sage is Salvia.

*Answer 2:* The process of guessing or creating a hypothesis and then looking for observations to support that hypothesis is the basis for the Scientific method.

*Answer 3:* Roman scientist and historian "Pliny the Elder" may have been the first to use the name Salvia to identify the Pitcher Sage plant.

*Answer 4:* Salvias can be identified by the following three characteristics:

1. The stem will be square, not round, because Salvias are in the mint family
2. Every other leaf on the stem will appear on opposite sides of the stem
3. The flower will have 2 unequal length lips

*Answer 5:* The roots of the a mature Pepperweed can go 10 feet into the Earth.

*Puzzle Page Riddle: The Box Elder Tree*