

**Advice to Grow By  
... Ask Us!**

UCCE Master Gardeners  
San Mateo & San Francisco Counties

# Keep Your Garden Humming

Presented by Arete Nicholas,  
Master Gardener

03/18/17



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Agriculture and Natural Resources ■ UCCE Master Gardener Program

# Who are the UCCE Master Gardeners?

We are a statewide program that is operated on a county by county basis.

We operate under the umbrella of the University of California.

We are trained by UC Specialists who are involved in current research and education in their area of expertise.

As trained volunteers & representatives of UC, we provide UC research-based gardening information to the residents of our counties whether they are home gardeners such as yourselves or members of community organizations.

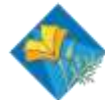


# Favorite Pollinators

Bees

Butterflies

Hummingbirds



# Bees are the Stars

- Over 1,500 species of CA bees
- Over 100 crops in U.S. are bee-pollinated
- Bees deliberately collect pollen as food for their larvae



# Pollination

## What Is it? Why is it Critical?



- Pollination = a process that transfers pollen from the anthers (male organ) of the flower to the stigma (female organ) of the same or species related flower.
- This results in fertilization
- 75% of flowering plants & 1/3 of world crops depend on it



# What do honey bees pollinate?

## ❖ Veggies:

Beet, broccoli, Brussels sprouts, cabbage, carrot, cauliflower, cucumber, eggplant, okra, squash

## ❖ Fruits:

Apples, apricot, berries, cherry, citrus, melons, pear, plum, tomato, watermelon

## ❖ Nuts & Seeds:

Almonds, walnuts, hazelnuts, macadamia, sunflower



# Why Care about Pollinators

1. One in three mouthfuls of our food and drink require pollination
2. Benefits to the ecosystem – keeping plant communities healthy & productive
3. Central to other wildlife, from songbirds to grizzly bears



# Designing a Garden For Bees!



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# Design a bee–friendly plant palette

Provide continuous bloom throughout the season

A diversity of flower types –supports a diversity of bees

Native to CA

Drought tolerant



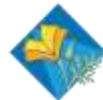
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IMPORTANT FOR ALL  
WILDLIFE GARDENS

# NO PESTICIDES



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# Plant Families Bees LOVE!

**Asteraceae** – Daisy, Aster, Sunflower family-  
(Erigeron glaucus, Echinacea purpurea,  
Gaillardia grandiflora, Coreopsis, Cosmos

**Fabaceae** – Legume family

**Lamiaceae** – Mint, Lavender, Salvia,  
Thyme, Rosemary (Agastache, Lavandula,  
Salvia

**Polygonaceae** – Buckwheat family

**Rosaceae** – Roses, Apple, strawberry

**Papaveraceae** – California Poppy



# Choosing the Right Flowers

Use Local Native Plants – they are 4 times more attractive to Bees than exotic flowers

Choose several colors of plants: Blue, purple, yellow

Plant flowers together in clumps

Plant flowers of different shapes

Have a diversity of plants flowering all season



# Bee on Milkweed



Photo by Jeffrey Blake



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# Work in California Natives



*Eriogonum rubescens*, Rosy or Red  
Buckwheat



# Ceanothus maritimus 'Point Sierra'

Size: 2'h x 4'w

Sun: Sun-part shade



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# Erysimum capitatum, Western Wallflower

Easy to grow



Prefers sun



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# These Plants are Bee Magnets



Poppies



Sunflower



Rosy Buckwheat



*Salvia leucophylla*



**Lupinus albifrons,  
silver bush lupine**



Bees and  
butterflies love  
Lupines

Native plants  
expand our  
pollinator plant  
palette



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# Versatile Bee Balm

## One Plant – Multiple Attraction



*Monarda didyma*

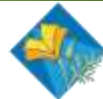


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# Bees Love Flowers



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# Nesting Habits of Solitary Bees



- Ground nesters need a clear or weedy dirt area to dig in the ground to lay their eggs
- Don't MULCH every spot in your yard!!



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# Group Species for Efficiency

- Groupings of single flower species enables pollinators to spot the plant quickly
- This reduces search time and energy required for foraging



# Water for Bees



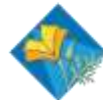
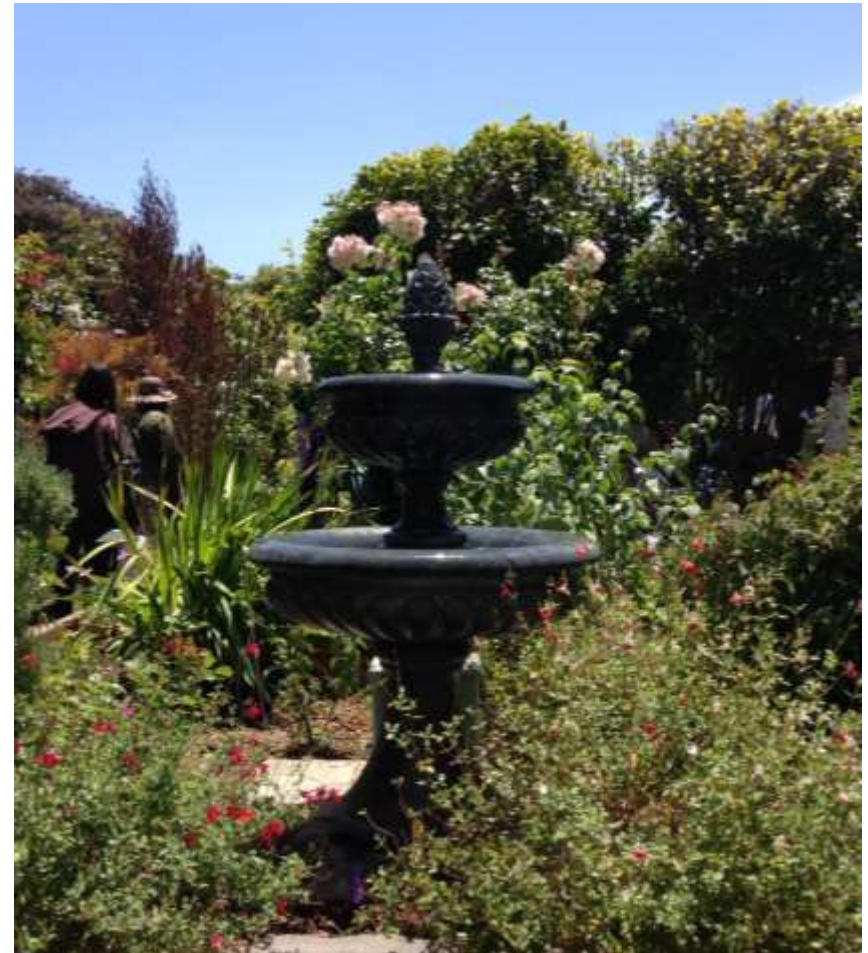
- Bees get most of their water from dew on the leaves of plants
- They also use pooling stations, sprinkler heads or fountains



# Provide Foraging Habitat

For the home gardener -  
Increase pollinator  
numbers by increasing the  
flowers available to them

Examples of garden  
habitats include a  
butterfly garden,  
pollinator lawn, an area  
not in use



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# What You Can Do to Conserve Bumble Bees

Bumble bees and other pollinators need three things to thrive:

- Flowers on which to forage
- A place to build their nest
- A pesticide-free environment

Learn more at [Xerces.org](http://Xerces.org):



# Butterfly Summit



Photo by Annies Annuals



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# Butterfly Facts

More than 55 species are native to the S.F. Bay Area

Western Pygmy-Blue 3/4" (Salt Marshes)

Monarch 4 5/8"

But loss of both open space and native plants have taken a toll on Butterfly populations



# MORE COMMON BAY AREA BUTTERFLIES



Monarch



Buckeye



Painted Lady



California Sister



Skipper



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# Caterpillar Favorites



ROSY BUCKWHEAT



SNAPDRAGON



MONKEY FLOWER



CHECKERBLOOM



CEANOTHUS



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# Milkweed does double duty for monarchs



**Feeds both  
Caterpillars  
and adults**



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# Nectar Plants



Buddleia



Aster



Lantana



Scabiosa



# Puddling Stations

- Butterflies obtain water and minerals from liquids in pore spaces
- How to make your own station



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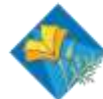


# Other Amenities

## Sunbathing Rocks



## Water



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# 6 Herbs for Butterflies and Bees

- Lavender
- Catnip
- Chives
- Fennel
- Rosemary
- Yarrow



# Butterfly Needs



Chrysalis photo on pinterest.com

- Warm temperatures and sunshine to fly
- Prefer areas sheltered from wind
- Native plants support 3x as many species of butterflies than ornamentals



# Don't Be Too Neat!

- Caterpillars need a place to hide
- Many “over-winter” in your yard, so leave some of the old plants, leaves and garden debris



# Critically Endangered Bay Area Butterflies

Bay Checkerspot



Mission Blue



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# Our SF Bay Checkerspot Story



Class: [Insecta](#)

Order: [Lepidoptera](#)

Family: [Nymphalidae](#)

Genus: [Euphydryas](#)

Species: [E. editha](#)

Subspecies: *E. e. bayensis*

Trinomial *Euphydryas*

*editha bayensis*

(Sternitsky, 1937)



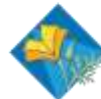
# Protect our Butterflies. They are “the flowers of the air”



22 species are formally  
listed as threatened or  
endangered

Quote by E.O. Wilson

Image by Dipatrix.com



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# Hummingbirds



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# Anna's Hummingbirds



- **Common in California year round**
- **Greatest consumer of insects of all hummers**
- **“Sings” more than any other hummer**



# Native and Migratory Hummingbirds

Anna's Hummer



Allen's Hummer



Photos by David Assmann



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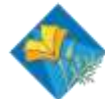
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# Facts about Hummers



Photo by Jeffrey Blake



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# Three Plants that Hummingbirds Adore



Fuschia species



Penstemon,

Bush Manzanita



Penstemon, Scarlet Bugler



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# Planting Success

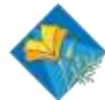
- Choose variety of plant types for diversity in color, form and texture
- Plant with mature size in mind
- Create mounds adding interest to flat terrain
- Weave herbs, edibles and natives together



# What about Feeders?



Photo by Jeffrey Blake



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# What do Hummers Like to Eat?



Male well - fed colorful hummer

Mixed diet of pollen from multiple plant sources

Pollens have proteins while sugar water does not.

So they can “live” on sugar water but not survive or thrive to their longevity of 8 years



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# More Favorites



CALIFORNIA FUCHSIA



READY TO LICK UP LUNCH!



Agastache, 'Rosy Giant'



COYOTE MINT



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# HUMMINGBIRDS ARE TERRITORIAL



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# Multipurpose Favorites



- They use the web for building their nests and attaching it to trees and bushes

- Hummers eat insects for protein
- Hummers can catch insects in mid flight
- They will eat insects right out of a spider's web including the spider!

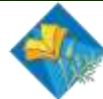


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# In flight



# Hummingbirds Pollinate by...



...passing pollen from one flower to the next, feeding on pollen and spreading it as they go

They can live for 8 years.

They can fly at 40 miles per hour for 500 miles and dive bomb at 60 mph



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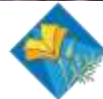
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# Allen's Hummingbird & Nest



Photo by David Assman



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# The Four Basic Wildlife Needs: Food, Water, Cover and Space



# Start or Expand your Pollinator Habitat this Week

- Start a smaller patch and expand over time
- Incorporate a succession of flowers to provide blooms throughout the seasons
- Include several different flower species
- Native plants are preferred.



# San Bruno Mountain

## Volunteers Plant Nectar Plants



San Bruno Mountain Watch



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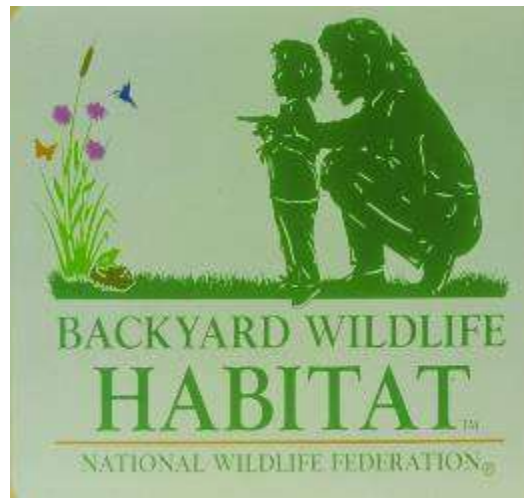
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# Voluntary Programs Promoting Wildlife Enhancements

Backyard Wildlife Habitat Program

Butterfly Garden Certification Program



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# Tree Frog in my Garden Pot



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## **Acknowledgements**

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UCCE Master Gardeners of San & San Francisco Counties

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*unless noted otherwise*

*Thank you for the contributions of Master Gardener, Pat Sanford*



# References for Gardeners

<http://ccuh.ucdavis.edu/projects/honeybees>

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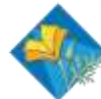
[www.pollinator.org](http://www.pollinator.org)



<http://www.xerces.org/pollinator-resource-center>



A Xerces Society Conservation Campaign



California  
Department of Agriculture and Natural Resources

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# References

Bauer, Nancy, The California Wildlife Habitat Garden, 2012, ISBN. 978-052-026781-7

Xerces Society, Attracting Native Pollinators, 2011, ISBN 978-1-60342-695-4

California Native Plant Society <http://cnps.org>

Master Gardeners of San Mateo and San Francisco Counties <http://smsf-mastergardeners.ucanr.org>

ANR Publication 8498, October 2013 <http://anrcatalog.ucanr.edu>

## **Native Plant Nurseries and/or nurseries with a good selection of natives**

Bay Natives, San Francisco <http://www.baynatives.com>

Flora Grubb Gardens <http://www.floragrubb.com>

Flowercraft Garden Center in San Francisco <http://www.flowercraftgc.com>

Las Pilitas Nursery <http://www.laspilitas.com/nature-of-california/plants/299--erysimum-capitatum>



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## **Got Questions? We're here to help:**

**Call** our helpline at (650) 276-7430

**Email** questions along with an attached photo to [mgsmsf@ucanr.edu](mailto:mgsmsf@ucanr.edu)

**Mail** questions along with a sample to  
1500 Purisima Creek Road, Half Moon Bay, CA, 94019

**See** us in person with a sample [[map/directions](#)]

**Visit** our website at <http://smsf-mastergardeners.ucanr.org>

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