



Maintenance in the Garden

By Don Mahoney, HBG Board President.

Hallberg Butterfly Gardens is not just for butterflies. As Louise used to say, it's for all the little creatures. We try to protect and study all lepidopterans, especially moths. But there is a place for birds, lizards, and snakes. Bobcats and coyotes have been spotted, so have abundant turkeys and deer. Careful maintenance and planting are important to provide food and cover for many creatures. Less deadheading, leaves left where they fall, except on cement pathways, and leaving fallen logs where they fall, if possible, are all important strategies. If there are few fallen logs, redwood planks can be strategically placed off pathways to provide homes for salamanders and ground beetles.

Butterflies need not only larval and nectar plants but also an undisturbed place to pupate where the chrysalises can be left for six months or longer. Several,

including the great purple hairstreak, can overwinter as pupae in the fallen leaves under its mistletoe-laden host tree. Apparently, pipevine swallowtail larvae like to climb oak trees to pupate. This year, after the demise of the giant oak tree next to the house, several dozen larvae attached their chrysalises to the top edge of the huge stump as if they had been trying to climb the tree that was no longer there. Not only do butterflies need plant debris at some time in their lifecycle, but some species of bees make use of it as well. I have had native bees build little mud structures up and down the dead *Clarkia* stems in the fall in my own garden. Leaving some patches of bare ground here and there is also crucial for ground-nesting bees, of which there are many. Spiders are a big player in the garden. They are predators of plant damaging insects on one hand, and on

the other hand they are a major food source for birds, especially during the nesting season. I used to have a lot of spiders, but now that a pair of Bewick's wrens are nesting here, I have many fewer. I see the wrens often search out and find spiders for their young.

Pulling weeds is always a balance. Weeds that are shading out more delicate natives need to be pulled, and most weeds need to have their seed heads removed, so there will be less the following year. The goal is always to replace weeds with beneficial natives. But weeds can be beneficial, too. If there is little else around, they provide



Pipevine swallowtail (*Battus philenor*) chrysalises on the trunk of the fallen black oak (*Quercus kelloggii*) behind the Hallberg home. Photo: Meghan Peterman

important cover. A few, such as fennel, can be great food for anise swallowtail caterpillars. Plantains, both native and not, are reliable food plants for buckeye butterflies. Skippers will use non-native grasses as readily as native ones. There are many other examples.

All in all, maintaining a diverse habitat is a challenge, but it is always fun and educational. It is definitely a balancing act. There is so much constantly happening that sometimes even the wind seems alive.

25TH ANNUAL
Open Gardens Day
23 June, 2024 from 10 am - 4 pm



Free!
No Appointment
Required!

Garden News

By Evan and Meghan Peterman,
Caretakers of HBG

The Dutchman's pipe (*Aristolochia californica*) was planted in the 1920s behind the Hallberg home and could be considered the foundation of Hallberg Butterfly Gardens. This curious vine is the host plant for the pipevine swallowtail butterfly (*Battus philenor hirsuta*) and is the only plant their caterpillars will eat. Since the original planting, the Dutchman's pipe, or pipevine, has supported over ninety generations of pipevine swallowtails. The captivating blue and black butterfly was the window through which Louise Hallberg discovered a passion that would last a lifetime. Over the past century, Louise recorded a total of fifty-four species of butterflies in her gardens. We strive to continue as a sanctuary for Lepidoptera (moths and butterflies). By working with the existing vegetation and observing insect activity, we are slowly building resilient plant communities that support a biodiverse landscape. Last year was a huge success for new garden plantings, many of which focused on supporting the monarch butterfly (*Danaus plexippus*). Our efforts included multiple patches of native milkweed and a variety of nectar plants.

Two hundred and fifty narrowleaf milkweed plants (*Asclepias fascicularis*) were donated to the Gardens from Gold Ridge RCD in partnership with the Laguna

de Santa Rosa Native Plant Nursery. These healthy, vibrant milkweeds were planted in patches throughout the Gardens and mostly grouped into fifteen to twenty plants. Varying the size of your milkweed plantings is recommended. Monarchs have been observed to have an egg-laying preference for small to medium-sized patches of milkweed near the edge of garden beds (*Xerces*, "*Native Milkweed Planting and Establishment in the Western United States*"). We planted milkweed near the information kiosk, the dragonfly pond, and the original weather station. The remaining milkweed was planted down the hill in the designated Monarch Waystation that was established in 2019. Monarch eggs were seen within days of milkweed being put in the ground!

We were awarded a "Grassland and Wildflower Habitat Kit" from the Xerces Society, which included six hundred regionally specific native plants with the goal of supporting the Monarch butterfly life cycle. The Xerces habitat kit included narrowleaf milkweed (*Asclepias fascicularis*), California milkweed (*Asclepias californica*), imbricate phacelia (*Phacelia imbricata*), rock phacelia (*Phacelia californica*), great valley gumweed (*Grindelia camporum*), California goldenrod (*Solidago velutina*), California aster (*Symphotrichum chilense*), western vervain (*Verbena lasiostachys*), and purple needle grass (*Stipa pulchra*). A Monarch habitat workday was held in October to install the Xerces habitat kit and plants from our nursery. A dedicated group of volunteers

braved the cold and early hours of the morning to plant and mulch over six

Monarch Habitat Workday: Volunteers planted the Xerces Society's Habitat Kit and plants from our nursery in October 2023. Photo: Ian Nelson



Spring Plant Sale

April 27th & 28th from
9:00 am to 4:00 pm

We sell primarily native plants with a focus on the conservation of butterflies, moths, and other pollinators. Go to our website's "Calendar of Events" to make an appointment.

hundred plants in just two hours! This workday was also documented by local filmmaker Ian Nelson while working on his upcoming project "Western Monarch Butterfly: Protecting Our Pollinators."

The final project space included reconstruction around the information kiosk and plantings in the Gravenstein apple orchard. We received a generous grant from Sebastopol Kiwanis to improve pathway access, especially for large groups of school children visiting the garden. With the funds awarded, we were able to incorporate brown gravel material to increase path accessibility and ease of maintenance. Brown pathway gravel replaced wood chips around the kiosk, restrooms, and the previous location of the picnic tables. Behind the information kiosk, the sunflower/wildflower patch was redesigned with the help of the 2nd-grade class from Oak Grove Elementary School; we planted a variety of native and non-native plants from our nursery—stewardship of this space will continue with the second graders from Oak Grove. In the first two rows of our Gravenstein apple orchard, we dispersed a regionally specific seed mix donated through the Monarch Joint Venture—Monarchs and More Western Habitat Program. We continue to work with Monarch Joint Venture to expand our impact and align with their conservation framework.

It has been a wonderful year with many new plants and people, too! The support for the gardens has grown in unison with the energy and love put into the ground. We hope you will visit and take your time while enjoying this living-learning landscape!



Small Wonders: The Plight and Promise of California’s Native Bees

This article was written by Emily Underwood, the Publications Editor for the California Native Plant Society. The original version first appeared in the Fall 2020 issue of *Flora*.

It’s hard to overstate the dazzling variety of wild bees in California, which CNPS former executive director Dan Gluesenkamp describes as “the Amazon Basin of bee diversity.” Of the roughly 20,000 bee species found throughout the world and 3,600 native bee species in North America, California is home to 1,600. Some are tiny, like the fruit-fly-sized *Perdita minima*, which pollinates minute desert wildflowers such as whitemargin sandmat (*Chamaesyce albomarginata*). Others are big, like the male Valley carpenter bee (*Xylocopa varipuncta*), a fuzzy golden bee that some scientists refer to as a “teddy bear.”

Unlike the social, non-native western honeybee (*Apis mellifera*), most of California’s native bees live solitary life-styles. Some bees nest in the ground in abandoned cavities; others, like the wool carder bee, dig or build their own nests. Some shelter inside trees, others in rock walls or even abandoned snailshells. There are red, black, and blue bees, and metallic green “sweat” bees that drink human perspiration.

Despite the kaleidoscopic array of native bees, western honeybees have long received the majority of public attention and research dollars because they are so important to agriculture, says Gretchen LeBuhn. At least in the United States, however, the loss of

honeybees “is an agricultural issue, not a conservation issue,” says Hollis Woodard, an entomologist at UC Riverside who studies the life cycles of bumble bee queens. “They’re not native, and they’re completely entangled with our agricultural system, many aspects of which are not sustainable.”

Protecting native bees can be an important insurance policy against the loss of honeybees, Neal Williams and his colleagues have found. In a 2002 article in the *Proceedings of the National Academy of Science*, for example, Neal Williams, the late entomologist Robbin Thorp, and conservation biologist Claire Kremen found that for organic farms located close to native bee habitat, such as oak woodlands and chaparral, “free” pollination from native bees was sufficient to grow even demanding crops like watermelon, which requires up to 1000 grains of pollen to produce a single melon. Native squash bees (*Peponapis pruinosa*) are highly effective pollinators for cultivated squash, melons, and other crops.

A number of other studies have shown that native bees can outperform honeybees in pollination. Bumble bees, for example, use a messy method called buzz pollination to vibrate the flower and shake more pollen loose. The technique which appears more effective than honeybee pollination for crops including tomatoes, peaches, and a number of native plants, among them huckleberries and manzanitas. The quality of pollination — how many grains of pollen get from the male to female parts of a

Left to right: A turret-building chimney bee (*Diadasia sp.*) on chaparral mallow (*Malacothamnus fasciculatus*); mining bee (*Adrena sp.*) on Channel Islands tree poppy (*Dendromecon harfordii*); striped sweat bee (*Agapostemon sp.*) on Guadalupe Island globemallow (*Sphaeralcea sulphurea*). Photos: Kris Ethington

flower — matters for the quality of food. Well-pollinated melons are bigger and firmer, apples rounder. Well-pollinated cultivated strawberries (descendants of California’s native beach strawberry, *Fragaria chiloensis*) are more perfectly formed and redder.

Most people like the idea of supporting bees — the question is how to do it, says Williams. “I think that a grower, a conservation biologist, a commodity board member would all agree that we would like to support native bees, but that’s a pretty nebulous statement.”

At UC Davis and Hedgerow Farms, a native seed company in Winters, California, Williams and postdoc Uta Muller have been testing native wildflower mixes to see which are most attractive to native bees and other pollinators. The team has planted gridded plots with native wildflowers such as California poppy, phacelia, native sunflowers, and coyote mint. In a laborious process, they’re now counting and identifying the native bees that visit each plot once a week, for nine months.

Working with the Xerces Society, Hedgerow Farms, and other collaborators, Williams ultimately hopes to develop computer algorithms that will suggest the best seed mix for a given purpose, whether that’s supporting

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Small Wonders

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rare bee species, providing food for as many different bee species as possible throughout the year, or supplementing honeybee crop pollination.

Gardeners should use local wildflower seed mixes of known genetic origin, like those sold at Hedgerow Farms, notes CNPS Director of Biodiversity Initiatives Andrea Williams. When people plant non-local wildflowers, they run the risk of wiping out local species through hybridization. A good illustration of why local seeds are preferable is the iconic Texas bluebonnet (*Lupinus texensis*). By using bulk seed from out of state, Texas has “hybridized their state flower out of existence — they don’t have any local variation anymore,” Williams says. “We don’t want that to happen to our state flora.”

Unlike California’s native plants, which have been extensively mapped thanks to organizations like CNPS, there’s scant information about how many of California’s native bee species are distributed throughout the state, and thus how climate change, development and other factors are affecting them, LeBuhn says. “It’s amazing how much we don’t know.” One way people can help

The native wildflower pollinator seed mix trials at UC Davis Student Farm in April 2020. Photo: Williams Lab UC Davis.



scientists is to participate in community science projects like the one she is running, the Great Sunflower Project. The project needs more volunteers, particularly in rural areas, she says. Gardeners can also find lists of bee-friendly plants on CNPS’s Calscape.org and on the Xerces Society website (xerces.org).

A manzanita wonderland

California is a hotspot for manzanita diversity, with roughly 100 species and subspecies of manzanita, 59 of which are so rare they only grow in one wild place. There’s hardly a more Californian shrub, growing from coast to mountaintop, with many species’ survival tied to fire, fog, and introduced pathogens. When planting manzanita to support native bees, it’s a good idea to use local species, says CNPS Director of Biodiversity Initiatives Andrea Williams.

Bumble bee queens spend much of their lives alone, wintering underground and emerging in the spring. In many areas of California, observers can spot the queens feeding on early-blooming native plants like manzanita (*Arctostaphylos spp.*) as early as February; by shivering their flight muscles, the queens can raise their body temperatures in cold weather.

Once the queens have fattened up, they start flying low over the ground in



A yellow-faced bumble bee (*Bombus vosnesenskii*) on manzanita (*Arctostaphylos sp.*) in Sierra National Forest. Photo: Erica Sarro

a zigzag pattern, looking for a cavity to nest in. After making a thimble-sized pot of honey and a small mound of pollen as a food reserve, they start laying eggs and incubating them. When a larva hatches, a queen bumble bee will regurgitate food into its wax pot “like a mama bird,” Woodard says. About two weeks later, the larvae chew their way out and become the first workers. If solo bumble bee queens don’t get the food that they need in early spring, or can’t find a nest, they won’t be able to produce a colony. “It’s a really tenuous point in the life cycle,” Woodard says.

For gardeners and others who want to support native bee populations, increasing the number of flowering plants that are available starting in February and lasting all the way into the fall can provide critical support, she says. “When you scale that out to all the other pollinators, you think, ‘Oh my gosh, we need flowers everywhere.’”

Event Highlight

Nature Journal:

The Pipevine Swallowtail
with Marley Peifer
May 18th, 11 am to 2 pm

Examine the unique life cycle of the pipevine swallowtail butterfly up close and learn fun techniques to enhance your observation skills with nature journaling. All levels of experience are welcome. Go to our website’s “Calendar of Events” to register.

Hallberg Butterfly Gardens - California Native - Nectar Plant & Host Plant Checklist - Blooms for all seasons

Spring Plant Sale on April 27th & 28th, by appointment. [View a current list of plants for sale on our website - hallbergbutterflygardens.org/our-nursery](http://hallbergbutterflygardens.org/our-nursery)

Bloom Time				Common Name	Scientific Name	Host Plant (caterpillar food)	
Winter	Spring	Summer	Fall				
<input type="checkbox"/>				Common Manzanita	<i>Arctostaphylos</i>		
<input type="checkbox"/>				Dutchman's Pipevine	<i>Aristolochia californica</i>	Pipevine Swallowtail	
<input type="checkbox"/>				Pt. Reyes Ceanothus	<i>Ceanothus gloriosus</i>	Pale Swallowtail, CA Tortoiseshell, Brown Elfin, Ceanothus Silkmoth	
<input type="checkbox"/>				Douglas Iris	<i>Iris douglasiana</i>	White-lined Sphinx	
<input type="checkbox"/>				Valley Oak	<i>Quercus lobata</i>	Mournful Duskywing, Elegant Sheep Moth	
<input type="checkbox"/>				Red Flowering Currant	<i>Ribes sanguineum</i>	Ceanothus Silkmoth, Milbert's Tortoiseshell	
<input type="checkbox"/>				California Bee Plant	<i>Scrophularia California</i>	Variable Checkerspot, Gray Buckeye	
<input type="checkbox"/>				Buck Brush	<i>Ceanothus cuneatus</i>	Pale Swallowtail, CA Tortoiseshell, Brown Elfin, Ceanothus Silkmoth	
<input type="checkbox"/>				Seaside Fleabane	<i>Erigeron glaucus</i>	Northern Checkerspot	
<input type="checkbox"/>				Silver Lupine	<i>Lupinus albilfrons</i>	Gray Hairstreak, Acmon Blue, Orange Sulpher, Painted Lady	
<input type="checkbox"/>				Bush Monkey Flower	<i>Mimulus aurantiacus</i>	Variable Checkerspot, Gray Buckeye, Militia Crescent	
<input type="checkbox"/>				Foothill Penstemon	<i>Penstemon heterophyllus</i>	Gray Buckeye, Variable Checkerspot	
<input type="checkbox"/>				Black Sage	<i>Salvia Mellifera</i>	Gray Hairstreak	
<input type="checkbox"/>				Creek Dogwood	<i>Cornus sericea ssp. sericea</i>	White-lined Sphinx, Polyphemus Moth	
<input type="checkbox"/>				Common Yarrow	<i>Achillea millefolium</i>	Yarrow Plume Moth	
<input type="checkbox"/>				California False Indigo	<i>Amorpha californica</i>	California Dogface, Silver-spotted Skipper	
<input type="checkbox"/>				Cobweb Thistle	<i>Cirsium occidentale</i>	Painted Lady, Mylitta Crescent	
<input type="checkbox"/>				Coffeeberry	<i>Frangula californica</i>	Gray Hairstreak, Pale Swallowtail, Ceanothus Silkmoth	
<input type="checkbox"/>				Cream Bush, Ocean Spray	<i>Holodiscus discolor</i>	Pale Swallowtail, Lorquin's Admiral, Brown Elfin	
<input type="checkbox"/>				Bolander's Phacelia	<i>Phacelia bolanderi</i>		
<input type="checkbox"/>				Rock Phacelia	<i>Phacelia californica</i>		
<input type="checkbox"/>				White Sage	<i>Salvia apiana</i>		
<input type="checkbox"/>				Cleveland Sage	<i>Salvia clevelandii</i>		
<input type="checkbox"/>					Douglas' Sagewort	<i>Artemisia douglasiana</i>	American Lady, Painted Lady
<input type="checkbox"/>					Lance-leaf Coreopsis	<i>Coreopsis lanceolata</i>	
<input type="checkbox"/>					California Buckwheat	<i>Eriogonum fasciculatum</i>	Acmon Blue, Mormon Metalmark, Hairstreaks
<input type="checkbox"/>					Saint Catherine's Lace	<i>Eriogonum giganteum</i>	Gray Hairstreak, Acmon Blue
<input type="checkbox"/>					Red-flowered Buckwheat	<i>Eriogonum grande var. rubescens</i>	Gray Hairstreak, Acmon Blue
<input type="checkbox"/>					Gumweed	<i>Grindelia stricta var. platyphylla</i>	
<input type="checkbox"/>					Western Vervain	<i>Verbena lasiostachys</i>	Gray Buckeye
<input type="checkbox"/>					Pearly Everlasting	<i>Anaphalis margaritacea</i>	Painted Lady, American Lady
<input type="checkbox"/>					Showy Milkweed	<i>Asclepias speciosa</i>	Monarch
<input type="checkbox"/>					Toyon	<i>Heteromeles arbutifolia</i>	Pacific Azure
<input type="checkbox"/>					Coyote Mint	<i>Monardella villosa</i>	California Pyraustra Moth, Orange Tortrix Moth
<input type="checkbox"/>					Kellog's Yampah	<i>Periderida kelloggii</i>	Anise Swallowtail
<input type="checkbox"/>					California Aster	<i>Symphyotrichum chilense</i>	Northern Checkerspot
<input type="checkbox"/>					Narrow Leaf Milkweed	<i>Asclepias fascicularis</i>	Monarch
<input type="checkbox"/>					California Sunflower	<i>Helianthus californicus</i>	Painted Lady, Milbert's Tortoiseshell
<input type="checkbox"/>					California Goldenrod	<i>Solidago velutina ssp. californica</i>	
Grasses							
<input type="checkbox"/>				California Fescue	<i>Festuca californica</i>	Common Ringlet, Sandhill Skipper, Mardon Skipper	
<input type="checkbox"/>				California Brome	<i>Bromus carinatus</i>	Umber Skipper	
<input type="checkbox"/>				Purple Needlegrass	<i>Stipa pulchra</i>		
<input type="checkbox"/>				Blue Wildrye	<i>Elymus glaucus</i>	Woodland Skipper, Nevada Skipper	
<input type="checkbox"/>				Idaho Fescue	<i>Festuca idahoensis</i>	Sandhill Skipper	

Considerations for Pollinator Habitat

By Erin Arnsteen

We are fortunate in California to not only live in one of the most biodiverse states in the U.S., but we also have lots of great resources for creating valuable habitat for pollinators and beyond. It's important to consider that there are going to be multiple species using your pollinator habitat, and it's equally important to consider all stages of each species' life cycle. Habitat should have the basic necessities to sustain life and



Erin has been passionate about entomology all her life. She works as the Western Program Coordinator at Monarch Joint Venture, where she runs the *Monarchs and More* Western Habitat Program. In her free time, Erin volunteers as the founder of the Western Monarch Society of Napa County, growing and giving away native milkweed plants to her community and as a Xerces Society Ambassador tabling at educational events.

allow that life to thrive, including:

FOOD (nectar producing flowers for adult insects and birds, pollen producing flowers for bees to bring to their young, and host plants for young Lepidoptera in their larval stage to eat)

WATER = All pollinators need to stay hydrated

SHELTER = A protected space to pupate, nest, overwinter and roost/rest. This includes bare soil for native bee nests, leaf litter for beetles and moth larvae, and stem nesting opportunities for cavity nesting native bees. Check out the awesome Nesting and Overwintering Habitat handout from the Xerces Society publications library – <https://xerces.org/publications/fact-sheets/nesting-overwintering-habitat>

NO PESTICIDES = Avoid pesticide use in and near your habitat and protect habitat from potential exposure (pesticides include insecticides, herbicides, and fungicides — non-organic and organic)

There are lots of amazing resources for starting pollinator habitat.

The Monarchs and More Western Habitat Program provides free regionally native wildflower seeds, milkweed plugs when appropriate, and technical assistance for land stewards across the state of California and Southern Oregon to start permanent pollinator habitat. Participants in the program must have ¼ acre or more to dedicate to pollinator habitat that must remain as pollinator habitat for at least three years, but ideally into perpetuity. The ¼ acre minimum can be split up among smaller patches at one site.

The Xerces Society habitat kit program is another excellent program that offers carefully selected, native and regionally appropriate plant material directly to selected participants with shovel-ready projects around the state of California.

The California Native Plants Society chapters host local plant sales throughout



A shaded place to hide on a hot day. California dogface (*Zerene eurydice*) rests on ocean spray (*Holodiscus discolor*). Photo: Meghan Peterman.

the year. The Milkweed and Wildflower Vendor Map from Monarch Joint Venture, the Milkweed Finder from the Xerces Society, and the Native Plant Nursery Listing and Map from the California Native Plant Society are all wonderful places to go online and find more opportunities for native pollinator plants. Hallberg Butterfly Gardens also has excellent native plants for sale and TONS of amazing educational materials!

My favorite process for selecting pollinator habitat plants is:

1. Go to the Xerces Society Pollinator Conservation Center and look up your regional pollinator plant list, www.xerces.org/pollinator-resource-center.
2. Go to the California Native Plant Society's plant database, Calscape.org, and search for your address.
3. Compare the Xerces plant list to the Calscape plant list for your specific address to find matching plants in your area and/or check out what insect species are supported, which can also be found on Calscape.org
4. Find your local plant nursery and seed source by going to either, Calscape's nursery map, Monarch Joint Venture's Milkweed and Wildflower Vendor Map, or the Xerces Society's Milkweed Finder.
5. Calscape has great resources for creating the layout of your garden, or you can consult with your local native plant nursery professional, native plant society chapter, or Xerces Society and Monarch Joint Venture websites. Consider things like water use, sun exposure, plant size, *continued on page 7*

Considerations for Pollinator Habitat

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and bloom periods when planting your habitat. You'll want to have something in bloom throughout every season if possible!

If you're specifically excited about helping monarch butterflies, some important things to note are:

1. The best thing you can do is plant and protect habitat. It's actually against the law in the state of California to handle monarchs at any life stage, so don't try to rear caterpillars. Just plant healthy habitat.

2. If you're close to overwintering sites, within 5 miles, plant lots of nectar producing native flowers. Avoid planting milkweed in areas where it has not historically grown. Having milkweed too close to overwintering sites can disrupt the monarch's reproductive cycles.

3. If you're farther inland, plant native milkweed that is native to your area.

4. Have successional blooms that provide lots of nectar throughout each season to ensure monarchs are supported throughout the year during their 4-generation migration.

5. Know when to manage your habitat during the correct time of year by following the Mowing and Management: Best Practices for Monarchs handout by Monarch Joint Venture. Train everyone who may be helping to manage your habitat. Happy planting!

Event Highlight

Bodega Land Trust

Walk and Talk,
Monarchs in Sonoma County.
September 7, 10 am to 12 pm

Join Meghan Peterman for an informative walk around the gardens while discussing monarch butterfly activity and conservation in Sonoma County. Visit bodegalandtrust.org to register.

A North Bay Monarch Working Group Update

By Nina Adarkar

The Monarch butterfly is beautiful and easily recognizable. But why is it so iconic? Monarchs serve as a pollinator that supports our food system, is a culturally important symbol, and is simply a beautiful and exciting thing to encounter. Monarch populations have also plummeted in recent years, bringing a new focus to Monarch conservation efforts. For the past two years, the Gold Ridge RCD has joined monarch recovery efforts through a collaboration with a wide array of partners including the Laguna de Santa Rosa Foundation, Conservation Works, Sonoma County School Garden Network, Point Blue Conservation Science's STRAW Program, Salmon Protection and Watershed Network, UC Marin Master Gardeners, and many others. This North Bay Monarch Working Group, created in 2021, aims to promote pollinator habitat through seed collection, propagation, and planting of diverse habitat on public and working lands throughout the North Bay. Plantings include several native milkweed species, the only plant upon which the monarch lays its eggs.

How are we doing now? Since the project's onset, nearly 8,000 starts of narrowleaf milkweed (*Asclepias fascicularis*) have been propagated from locally collected seed sources, an effort spearheaded by Ayla Mills, Nursery Manager at the Laguna Foundation. Thus far, nearly 6,500 have been provided to native habitat plantings at over 170 sites, including school and community gardens, wildlands restoration efforts, public parks, and local farms. An additional 1,500 will be planted this spring.

This conservation initiative allows for widespread participation because, unlike recovery efforts for other imperiled species like coho salmon, where populations are confined to select streams, monarch habitat can be established almost anywhere, even in small spaces. Milkweed itself, as an



Nina is focusing on monarch recovery and education during her 2023–24 Gold Ridge RCD GrizzlyCorps fellowship. In the photo, Nina is collecting native milkweed seeds, thousands of which were collected last fall. Another part of Nina's Monarch recovery work is monitoring and assessing all of the school gardens that planted pollinator habitats through the Sonoma County School Garden Network's Schoolyard Habitat Program over the past decade.

herbaceous perennial that dies back in the fall, requires little attention and can spread itself both through rhizomes and seed, meaning even a few plants can ultimately provide breeding habitat to support caterpillars. Even potted flowering balcony plants or small flower gardens are able to provide critical nectar sources to support the butterflies' migration. This means that apartment dwellers and schoolchildren in urban environments can participate in monarch recovery and citizen science monitoring of monarch recovery, in addition to farmers, ranchers, and other large landowners.

Around 2,000 narrowleaf milkweed seeds will be saved to sow more plants at the nursery this spring, and 13,000 seeds will be sent to Heritage Growers for seed amplification, in a statewide *continued on page 9*

Volunteer Spotlight

Margaret Brown

Margaret Brown was born in the southwest of England and celebrated her 91st birthday last year. She is a long-time friend and supporter of Louise Hallberg, the founder of Hallberg Butterfly Gardens. The Passion flower growing on the lattice in front of the Hallberg vivarium (station 5) came from Margaret's home garden.

My first acquaintance with Louise Hallberg was with the Graton Community Club after my daughter received a scholarship from the club where Louise was treasurer. The efforts made by the members to raise funds for the scholarships were impressive, and recognition given to serious and ambitious students outside of their own family was important as well. So, I joined the Graton Community Club. Louise visited my garden shortly after and immediately noticed my large carrot patch had plenty of happy swallowtail caterpillars. I hadn't noticed. Louise and I were both members of the Native Plant Society. As a 6-year-old, I had a garden with my favorites — Russell Lupines and Aquilegias — and I was familiar with the wildflowers growing in the west of England, where I was born. We would pick bunches of wild primroses (*primula vulgaris*) growing in hedgerows or cowslips (*Primula veris*) growing in

pastures with bluebells in wooded areas and wild daffodils.

At the Graton Community Club, Louise was doing accounts in the manner members expected, in a large book with umpteen columns to categorize the entries using red and black pens. It was the early days of computers, and I persuaded Louise to watch me as I set up and entered the club's monthly accounts on my computer. It eliminated adding 12-inch-long columns of invoice dollar amounts (in your head) and categorized each of the items at the same time. So simple. And no more heavy books to carry. Louise said, "Yes." With no hesitation, Louise let me put bookkeeping on the computer. From then on, I helped Louise with the butterfly garden bookkeeping, clerical, typing out her sightings data and reports - and talking native plants, of course.

In the early 60's, I arrived in New York from England on Cunard's "Queen Mary" (now docked in LA) with one large suitcase and a work permit, hoping



Margaret Brown

to fill the 60's trend for executives to employ British secretaries. I had attended a girl's school where business was the main focus: shorthand, typing accounts, corporate business finances, balance sheets, world economies, etc., along with regular schooling, art, and sports. It was probably a new type of public education for girls to provide them with opportunities. I moved to San Francisco to work, but I got married and moved

Margaret Brown and Louise's sister Esther Best at Open Gardens Day 1999



Event Highlight

Garden Workdays

9:00 am to 12:00 pm
at Hallberg Butterfly Gardens!

Garden Workdays are every Tuesday and one Saturday of the month. Use our online calendar to join us. Each Saturday workday will feature a butterfly currently active in the gardens. Appointment required. Contact us or visit our website to register.

out of the big city into rural northern California, eventually to Graton, where I acquired a cow immediately! Always loved cows. My friend Daisy lived to the ripe old age of 29, which the vet had never seen before. It was wonderful after living in big cities for years.

I could never identify a flying butterfly, so I never did tours with visitors to Louise's Gardens. However, I do know the flowers with nectar for butterflies and specific plants the baby caterpillars need, and how to grow the plants, so that was my contribution to the Garden. In England, the members of parliament and the House of Lords, like the Senate and the Congress here (in the US), got a committee together to discuss horticulture in England. They decided that mental health through gardening was very important for the health of a Nation.

Louise was so passionate about butterflies. She was possessed—and it was contagious. It's nice to know people like that. I probably was a sort of an egg on of Louise. Every year, Louise

The buckeye butterfly mural when it was freshly painted on the side of the pump house in 1999.

Louise Hallberg at Open Gardens Day 1999

would make a huge purchase at the Native Plant Society's annual plant sale, and her trusty helper Caterino would plant them. What I've always wanted is for more local people and local groups to be involved in the garden. Graton is a small community; apples, and Hallberg have a history combined. It's nice if there's a place in Graton that attracts local volunteers who want to come and help it. It's good for the community, butterflies, and us.



Monarch Working Group

continued from page 7

effort to provide more regionally appropriate native seed stock, funded through the Wildlife Conservation Board. Seed amplification will produce hundreds of thousands of additional seeds with diverse genetics, to be returned to the different collection regions for distribution to native plant nurseries or incorporation into seed mixes.

The milkweed seeds collected for the amplification efforts came from multiple sites, including the Earle Baum Center for the Blind & Visually Impaired. The Earle Baum Center, besides providing fantastic resources for people living with sight loss and their families, is home to vernal pools and a substantial wild patch of narrowleaf milkweed.

These efforts couldn't come at a more crucial time. The Xerces Society for Invertebrate Conservation recently released numbers from the 2023 Thanksgiving Western Monarch Count, reporting 233,394 butterflies across 256 of California's coastal overwintering sites. While this is less than 5% of the 1980s overwintering population, these numbers represent a hopeful recovery from 2020's record low count of less than 1,900. Though it's promising to see a growing number of volunteers and monitored sites, there is much more work to be done to ensure the monarch population's recovery to its historic levels, numbering in the millions.

Garden Tours 2023			
Month	Public Tours	School Tours	Events
Apr	126	56	6
May	192	177	42
Jun	252	6	OGD 399
Jul	189	24	30
Aug	105	7	8
Sep	65	75	
Oct	61	81	130
Total Guests	990	426	615

Graton Grounds

Our community continues to fulfill, commit, and express. Enjoy these spotlights!

Graton Town Square

by Matt Jorgensen and Committee

The Graton Town Square will transform a long-vacant lot into an inclusive community space in the heart of Graton. Currently, we have closed escrow on the land acquisition and are in the development planning phase, actively engaging with the community through workshops and design sessions to ensure the Square reflects the diverse needs of our community. Our Design Committee and Community Advisory Group kicked-off in March to guide the project's phases, which will be vibrant with human and beyond-human life! We feel so fortunate to have such an engaged community with volunteers ranging from civic space designers and engineers to permaculturists and native ecology experts. We invite anyone who hasn't to share input and complete a brief survey on the Graton town square webpage and stay updated on our progress. www.graton.org/graton-town-square

The Graton Community Club
 Celebrating 110 years with
 Another Flower Show!
Always FREE admission
April 19th - 20th
9 am - 4 pm
 8986 Graton Rd., Downtown Graton

Event Highlight

Books and Barns

April 19th, 6:00 pm to 8:00 pm
at Hallberg Butterfly Gardens!

A new literary reading series featuring writers sharing their best work. Spend an afternoon listening to stories, poetry, and music.

This event is free, and no appointment is required.

Ned Kahn Studios The Flapping of a Butterfly's Wing

by Ned Kahn

Most people are aware that butterflies, and all insects, breathe through their skin, but a scientist friend, Steve Vogel, taught me something more amazing. Steve was an expert on biofluid mechanics (he died a few years ago). His specialty was how organisms have adapted to the fluid environments of air and water. Steve told me that simple diffusion of oxygen from the atmosphere into the pores in the skins of insects is a slow and inefficient process. Any movement of outside wind stirs the air inside their pores into a spinning vortex, which vastly increases their intake of oxygen and release of carbon dioxide. The wind helps them breathe. When there is no wind, they struggle to respire. Unless, of course, they flap their wings. They make their own wind. As they fly through the air, the air flies through them. Flying must feel so refreshing to them. The same is true of plants, except they can't fly. They need



Wishful Thinking

As a nonprofit, Hallberg Butterfly Gardens always needs a few items that are not covered by the annual budget. This year, we're trying to build garden infrastructure and community support. We would welcome help with the following:

- Compost • Potting soil
- 4-inch and 1-gallon pots
- Lawnmower • Lumber
- Hand tools (hori horis, hammers, etc.)
- Tractor use
- Social media • Graphic design

the wind to breathe. Without wind, their metabolism slows. Every gust of wind is a breath of fresh air for the plants. For the last few decades, I have been creating artworks that make visible the intricate wanderings of the air. Comprised of arrays of sensitive elements, these artworks mimic the action of wind on a field of soft grasses or stirring the surface of water. Even after spending decades observing the hidden textures of the wind, I am continually surprised by the variety of flow patterns. Every different place has unique air patterns. Every building sculpts the wind differently, every plant, every tree. The moods of the air change from moment to moment. The spectacular beauty of clouds offers a glimpse into this hidden universe of wind, but all the non-cloud air is just as amazing. Maybe we need to see the air to really fall in love with it, to protect it, to let it heal from our excesses. It is hard to fall in love with something you can not see. nedkahn.com

Graton Artist Ned Kahn brings the unseen into the visual sphere. His 'Digitized Field' is 30,000 wind-activated panels on the west side of the ATT building on 3rd street in Downtown Santa Rosa, completed in 2005.

2022–2023 Friends of the Gardens...

Donors *Major Donors (over \$250)

Akshay Mahajan
 Andrew Levine
 & Susan Bartholome
 Angela Ford
 Anke Schwantje
 Annelisa Moe *for Don
 Moe & Terry Ehret*
 Audrey Hecker
 Beth Lamb
 Bill Brungardt*
 Caren Signorelli
 Carl Dobson
 Christopher Frederick
 David & Julie West
 Debra A. Avanche
 Denese G Horvat
 Diane E. Allen
 Diane Heilesen
 Diane Hichwa
 Don Mahoney*
 Donna Curtis
 Douglas Emery
 Emily Robinson*
 Florence H. White
 Fredrick Crichton
 Irene B. Sorenson
*in memory of
 Donald G. Sorenson*
 Janet Bosshard
 Janet Vail
 Jean Moore *in memory
 of Eunice Riekema*

Jo Bentz
 John R. Underhill*
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 Kathy Spalding
 Laura Giron*
 Linda Johnston
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 Lorie Silver
 Mahlon Hubenthal
 Marcia Keasler
 Mary Ely
 Mary Goodall *in Memory
 of Vanessa Goodell*
 Mary Sue Ittner &
 Bob Rutemoeller
 Maureen Pape
 Maya Margaronis
 Mia Monroe
 Michael Kambour*
 Nancy Hargreaves
 Nicole Skalski
 Pamela Smithers
 Pedro Vera
 Peter G. Meyerhof
 Rhonda Perkins
 Sandra Sewell
 Sheldon Erkkila
 Susan P. Sherwood
 Susan Righetti *in memory
 of Karen Righetti*
 William Allen

Volunteers

Aidan, Austin &
 Ryder Sheehan
 Alison Blume
 Alondra Castaneda
 Amanda Ramsay
 Ana Castillo
 Anke Schwantje
 Aria Balador
 Art Slater
 Bill Brungardt
 Bruce & Romaine
 Peterman
 Carla Delgadillo
 Carol Carr
 Carol Hughes
 Carol Schmidt
 Cindy Belluomini
 Cori Rickert
 Craig Moore
 Dale Jewel
 Diego Vazquez
 Don Mahoney
 Donna Lamke
 Elisabet Cornish
 Erin Arnsteen
 Fontayne Casparis
 Frank Dono
 Gay Bishop
 Geanie Powers
 Jake Lewis

Janet Bossard
 Jasmine Dengler
 Jason Lachick
 Jo Bentz
 Jocelyn Magner
 John Dennis
 Julie Harper
 Kabir Pandeya
 Kandis Gilmore
 Kate Devine
 Katelyn Stricklin
 Kathi Jacobs
 Kathleen Chasey
 Kathleen Clifford
 Kathy Oettinger
 Kathy Spalding
 Kathy Trafton
 Kellie McNeerney
 Kirsten Tripplett

Krystal, Lyla
 & Luke Altenbach
 Lang Anh Pham
 Laura Hamrock
 Leah Brorstrom
 Leah Graniela-Loving
 Leann Hayes
 Linda Wittfield
 Louise Larro
 Lucia Kuhlman
 Lynnette Bower
 Maggie Robinson
 Marcia Johnson
 Marcia Keasler
 Mark Brorstrom
 Marsha Johnson
 Mary Ely
 Maureen Pape
 Melissa & Dave

Laurice
 Michael Kambour
 Nancy Mitchell
 Pat Muscat
 Patricia Lindsay
 Rhonda Perkins
 Rob Evans
 Sam Werback
 Samantha Pullaro
 Sandra Bodley
 Shannon Mahoney
 Sonia & Paul Nuss
 Steve & Justin Ewing
 Tim Elliot
 Tina Huie
 Tony Cohen
 Tracy Wilson

Volunteer Organizations

Sebastopol Kiwanis
 West County Recorders
 Grab N Grow
 North American Press
 Emerisa Gardens
 Open Door Insurance
 The Bird Rescue Center
 Xerces Society
 Laguna de Santa Rosa Nursery
 SRJC Biology Club
 Sonoma West Times
 Sonoma County Gazette
 Oak Grove Elementary
 2nd grade classes
 Harmony Farm Supply
 Goldridge RCD
 Monarch Joint Venture

I'm a Friend of the Gardens too!

Donate online:

www.hallbergbutterflygardens.org/donate



- I wish to become a Friend of the Gardens
- I wish to renew my Friendship
 - \$250 Pipevine Swallowtail
 - \$150 West Coast Lady
 - \$100 Monarch
 - \$50 Buckeye
 - \$25 Woodland Skipper
 - \$ _____

I wish to make a gift in HONOR of: _____
Name

I wish to make a gift in MEMORY of: _____
Name

Your Name

Address

City/State/Zip

E-mail

Phone

Your gift is tax deductible to the extent allowed by law.
 HBG is a 501(c)(3) nonprofit organization. #91-1767178

Please make checks payable to:
Hallberg Butterfly Gardens, 8687 Oak Grove Road, Sebastopol, CA 95472 (707) 823-3420





Hallberg Butterfly Gardens

8687 Oak Grove Road
Sebastopol, CA 95472

HALLBERG BUTTERFLY GARDENS

is a 501(c)3 nonprofit organization
#91-1767178

BOARD OF DIRECTORS

Kathy Trafton • Jo Bentz
Don Mahoney • Kathi Jacobs

OFFICERS

PRESIDENT: Don Mahoney
SECRETARY: Kathy Trafton
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Our full color newsletter
is now available online at
hallbergbutterflygardens.org

Drop us a line to receive
your annual newsletter
by email! info@hallbergbutterflygardens.org

Programs 2024

Tour Season

By appointment only. 10 am - 4 pm.
April - October, Wednesday - Saturday, Please
visit our website's "Guest Services" page or
contact for scheduling.

Events Register to Attend

Spring Plant Sale: April 27th & 28th,
9:30 am - 4 pm (Appointment required)

Moth Night - 6th Annual: July 20th, 7:30
pm - 11:30 pm (Appointment required)

Open Gardens Day - 25th Annual:
June 23rd, 10 am - 4 pm (FREE, no
appointment required)

Books and Barns: April 19, 6 pm - 8 pm
(Free)

Nature Journal - Pipevine Swallowtail:
May 18th, 10 am - 2 pm (Appointment
required)

**Bodega Land Trust - Walk & Talk -
Monarch Butterflies in Sonoma County:**
September 7, 10 am - 12 pm (Registration
required) Bodega Land Trust website -
bodegalandtrust.org

Visit our website's "Workdays & Events" page
for more information and sign up for an event.

(707) 823-3420
info@hallbergbutterflygardens.org

WWW.hallbergbutterflygardens.org



A Monarch (*Danaus plexippus*) nectaring on
Mexican Sunflower (*Tithonia rotundifolia*) in
September. Photo: Meghan Peterman

HALLBERG BUTTERFLY GARDENS

25TH ANNUAL

OPEN GARDENS DAY



Sunday, June 23rd
10 am - 4 pm

8687 Oak Grove Ave.
Sebastopol, CA

Join us for our 25th annual celebration and plant
sale! Walk along our trails for bird, butterfly, and
wildflower sightings, with knowledgeable docents
throughout the gardens. Scroll through our book
sales, crafts for kids, and an education center.

FREE ENTRANCE
NO APPOINTMENT REQUIRED