**Trillium angustipetalum** wake robin

DIRK WALTERS

**About the Cover:** The cover photo and plant drawing that accompany this article is a spring wildflower that I suspect everyone who has even the slightest acquaintance with native wildflowers will recognize. It is our local trillium or wake robin. Other common names for the computer include toadshade, tri flower, birthroot, birthwort, and even wood lily. Its scientific name is *Trillium angustipetalum*. It is the only trillium in our Chapter area and a California endemic. Wake robin species are native to both Northern hemisphere continents, but most of the 46 or so species worldwide are found in the Southern Appalachian region. Our species has a very interesting distribution. It is distributed through Northern California and then south through the Sierra Nevada. Then the distribution ‘jumps’ to the San Luis Obispo and Santa Barbara County coastal canyons. It is not found in the area in-between. There are a few other plants that have this same general distribution such as the pond lily (*Nymphaea polysepala*) and the chinquapin (*Castanopsis chrysophylla*). What accounts for the distribution? I have no idea, although a case could probably be made for transplant by native peoples, at least for the pond lily and chinquapin which have edible nuts. Trilliums were used as spring greens and their rhizome-tuber was used as an emetic. Although wake robins are relatively common throughout their range, they tend to have a very spotty distribution. That is, unless you know where a population exists, you could easily not run across them. Because they are so distinctive and localized, it is always a treat to find a population. Many do not know it can be found in our area because it blooms from December through March before many of us realize that the spring wildflower season has started. For these reasons, I hope that none of us will actually attempt to utilize them.

The genus name, *Trillium*, is derived from the base, “tri-”, meaning three. According to the Jepson Manual, this refers to the three large bracts (often called leaves) that members of this genus produce. But it could also refer to, and sometimes does, the three sepals, three petals and ovary with three seed chambers. Several of my references describe the weak fetid odor of its flowers. This odor along with the dark red color of its petal would lead me to predict that this wake robin is pollinated by carrion flies or beetles. The species epithet, “*angustipetalum*” refers to the very narrow (angusti-) petals (petallum).

You may have noticed that I haven’t indicated the plant family to which the wake robin belongs. This is because it seems to be in a state of flux. Back in the middle of the last century when I was learning my botany, wake robins were placed along with hundreds of other genera in the Lily family, Liliaceae. However, even back then, we were told that the Lily family was too big and should be split into smaller families. Unfortunately, botanists wouldn’t come up with a consistent set of characters that could be agreed upon to split the family. When DNA sequencing entered the picture, it provided justification for splitting the old, huge Liliaceae.

The genus *Trillium* was transferred to the new family, Melanthiaceae. And that’s where it now resides in the Jepson Manual. However, this new family is also considered to have several phylogenetic ancestors, and the genus has been moved to a very small family, Trilliaceae, with only one species of genera.

Native plant gardeners often would like to transplant wake robins to their native garden, but this is more difficult than it would seem. Few transplants during the growing and flowering season are successful as the plant uses last year’s rhizome to produce this year’s growth. After flowering, it concentrates on producing its new replenished rhizome. And then, shortly after flowering, its shoot dies, and the plant’s above-ground parts vanish. The best way to transplant to the garden is to dig up the rhizome during the dormant period in the late spring and summer when they are completely hidden under ground. So! The best way to enjoy wake robins is in the wild, where they should remain untouched.

Photo: Masses of *Trillium* along Coon Creek in Montana de Oro State Park.

Many years ago, nearly all the plants were concentrated along the trail between Bridges 5 and 6, but now can be found scattered throughout the shadier places. They are best found where the trail dips down into the damp, willow-shaded parts of the trail. (photo David Chipping)

COVER: *Trillium angustipetalum* (photo; David Chipping)
March Speaker: Mindy Trask
Restoring the Coastal Prairie in SLO County

Thursday, March 3, 2022 at 7pm on Zoom (advance registration required – link on our website)

Join us for the March installment of our speaker series, when we host Mindy Trask, associate biologist with the California Department of Transportation (Caltrans). Mindy is going to discuss one of the largest habitat restoration projects completed by Caltrans in the past couple decades. This restoration of a coastal prairie followed a 3-mile realignment of Highway 1 just north of the Piedras Blancas lighthouse. The project included more than 75 acres of coastal prairie restoration and incorporated many methods to improve restoration success, such as a type of pervious road base to help retain subsurface drainage to wetlands, reusing topsoil with the native seedbank and important mycorrhizae, and using local transplants in wetland restoration areas. Tune in to hear more about the current status of restoration success as well as lessons learned after three years of intensive maintenance and monitoring.

In her role with Caltrans in San Luis Obispo, Mindy specialized in botany and endangered species. She has a MS in plant ecology from Oregon State University and has worked as a botanist and biologist in the west for several decades.

Mindy and her grasses

Read more about Mindy’s project on the next page.

MILKWEEDS FOR MONARCHS?

If you are considering restoring habitat for Monarch butterflies, a group called Monarch Watch will distribute free milkweed plugs. To qualify, applicants must have a minimum of one acre to restore to natural, native habitat, and have a management plan in place. The only species available for California projects is Asclepias fascicularis (narrowleaf milkweed), in flats of 50 plugs. These will be awarded on a first come, first served basis, to qualified applicants. Supplies are limited - so apply early. Shipping will begin in April. For more information, and to apply, please visit: [https://monarchwatch.org/bring-back-the-monarchs/milkweed/free-milkweeds-for-restoration-projects/](https://monarchwatch.org/bring-back-the-monarchs/milkweed/free-milkweeds-for-restoration-projects/). A word of caution, we do not know the origins of the seed used by Monarch Watch, so aficionados of ‘only use locally sourced seed’ should use caution.

We strongly recommending planting species found natively within SLO County. Beside Asclepias fascicularis, which can be found from the coast to the Carrizo Plain, Asclepias californica is found on high ridges of the Santa Lucia Mts, Asclepias eriocarpa is found in dry soils over much of the county, Asclepias erosa is suited to very dry areas, and Asclepias vestita ranges from the eastern slopes of the Santa Lucia Mts to the Temblor Range. Do not plant any perennial milkweeds, as their presence enables diseases to persist in the butterfly population.

MARKING THE PASSING OF DR. V.L. HOLLAND

We have lost another one of our early members and Chapter leaders. Dr. V.L. Holland passed away in early January of this year. He came to San Luis Obispo in 1972 to fill the open Field Botany and Plant Ecology faculty position in Cal Poly’s Biology Department. He became our Chapter’s sixth president and served for two years (1974 and 1975). The most lasting contribution he made was the founding of the Hoover Award which rewards Chapter members who are contributing significantly to the Chapter. During his first term, he and the Board selected the very first Hoover Award recipients - Alice and Henry (Bud) Meyer. Known to everyone as simply “VL”, he chaired the Cal Poly Biosciences Department for many years, and also served as a consulting botanist for the creation of environmental impact reports. He also cowrote a college level textbook with Dr. David Keil titled ‘California Vegetation’.

Dr. Dirk Walters
You probably don’t think of Caltrans when habitat restoration comes to mind, but your state transportation agency is actually quite a player. Most projects are small areas of riparian restoration as mitigation for construction impacts when bridges or culverts are replaced. But every now and then, a big project comes up. One of the largest habitat restoration projects for Caltrans from Santa Cruz to Ventura is practically in your back yard, along the north coast of SLO County. Caltrans recently realigned a 3-mile section of Highway 1 just north of the Piedras Blancas lighthouse, resulting in the need to restore over 75 acres of coastal prairie habitat as partial mitigation for impacts to coastal wetlands and uplands. The old highway was suffering from wave erosion due to its proximity to the cliffs, and so it was moved between 100 and 500 feet east. Design details and construction activities that were implemented to reduce impacts could make up a novel in itself. For just a few: three floodway spanning bridges were constructed in streams and lowlands where previously there were undersized culverts (see photos 1 and 2); temporary impacts to wetlands, streams and sensitive aquatic wildlife were minimized with the use of construction mats and work bridges; and wetland hydrology was retained with porous treatments under the new roadway. Despite these efforts to reduce disturbance, the project resulted in about 15 acres of permanent and 62 acres of temporary impacts to wetlands, aquatic habitat and coastal prairie that needed to be offset.

As part of the mitigation for permanent impacts, the old highway was removed with the goal of restoring it to natural habitats similar to the adjacent landscape. Construction on the highway realignment began in the summer of 2015 and was completed in spring of 2018. Initial mitigation plantings and seeding took place in the fall of 2017, and wetland transplants were completed in winters of 2019/2020 and 2020/2021. Locally harvested transplants of wetland species were designed to supplement native seeding, which has been highly successful in the wetter parts of the wetland areas (see Photos 3 and 4). Caltrans biologists have been monitoring the success of restoration since 2019. The monitoring design for revegetation is quite elaborate, involving comparing reference with restoration sites, in five different habitat types, and two different types of restoration. Caltrans is also monitoring bird diversity, stream stability, and erosion. Aside from being a necessary step for regulatory compliance, the monitoring has helped inform follow-up site management for weed control, replacement plantings, fence repairs, and repairing erosion problems.

Restoration of the roadsides adjacent to the new highway has been far more successful that restoration of the former roadbed in the old highway. Construction impact areas on the slopes adjacent to the new highway were recontoured, restored with salvaged topsoil, and hydrosseeded with locally collected native species. The former roadbed was restored by removing the old road surface and subsurface roadbed layers, ripping, adding topsoil salvaged from the new highway footprint mixed with compost, and hydrosseeding with locally collected native species. Transplants were only installed in the wetland restoration areas, and have been partially successful. Tune into my chapter meeting presentation in March to learn about the successes and challenges with the massive restoration project and my thoughts on lessons learned.

By Mindy Trask, Caltrans Associate Biologist & CNPS member
Maritime ceanothus: *Ceanothus maritimus* is a SLO County endemic with California Rare Plant Rank of 1B.2 (Rare, Threatened or Endangered in CA or elsewhere). It is found on coastal terraces north of Arroyo de la Cruz, and can have flowers that range from blue to white. The species has a prostrate habit, and, along with *Ceanothus cuneatus*, has opposite leaves. The rest of the *Ceanothus* species within the county have alternate leaves. Maritime ceanothus is mixed in on the coastal terrace with low-growing and much more abundant *Ceanothus thyrsiflorus* var. *thyrsiflorus*. The leaves of these two species are distinctive, with the small photo showing *Ceanothus maritimus* on the right and *Ceanothus thyrsiflorus* on the left. (photos David Chipping)

The low-growing plant has caught the eye of the nursery trade, and the varieties ‘Popcorn’, ‘Point Sierra’, and ‘Valley Violet’ have entered the trade. The picture (upper right) is a horticultural variety  (photo by Stickpen, Wikimedia Commons).

Blue-blossom ceanothus: *Ceanothus thyrsiflorus* var. *thyrsiflorus* (photo above left) can be found along the coast from Santa Barbara County to the Oregon border, and has blue flowers. The species has a prostrate habit on the immediate coast, due to the harsh winds. The photo on the right is taken immediately north of Arroyo de los Chinos, and shows the low mounding habit of the plant. (photos David Chipping)

There are a whole bunch of horticultural derivatives of this species, including the popular ‘Carmel Creeper’ and ‘Yankee Point’.
IMMACULATE MISCONCEPTION?

The photo (left) in the last edition of Obispoensis was incorrectly labelled as Clarkia speciosa ssp. immaculata. It is Clarkia speciosa ssp. speciosa, being less than ‘immaculate’ as it has spots. The spotless Clarkia speciosa ssp. immaculata (Pismo clarkia) is shown at right.

BLUE DIPS?

Dichelostemma capitatum is now Dipterostemon capitatus

Robert E. Preston, in a 2017 paper published in Phytoneuron, has concluded that Blue Dicks has been subject to “nearly perpetual taxonomic confusion since the 19th century”. He therefore presents a paper that changes the species name. Justification for removing the plant from the rest of the genus Dichelostemma rests, among other things, on DNA and the structure of the ovule. Calflora now cites Dichelostemma capitatum as “not an active name”. The new name Dipterostemon capitatus was first applied by Per Axel Rydberg in 1912. Rydberg was the first curator of the New York Botanic Garden.

So what about the common name? The Dich in Dichelostemma was the basis for the common name, and needs no explanation (except to 8-year old middle-school boys). So what now? Blue Dips? The plant has also been called ‘Schoolbells’ and ‘Wild Hyacinth’.


Lichen of the Month:

Teloschistes chrysophthalmus

This beautiful, red-orange, fruticose lichen usually appears as a crust on dead twigs on trees. It is appropriately called the ‘Golden-eye lichen’ due to the eyelash-like cilia. This specimen was photographed at Rancho El Chorro Park. The species has a global distribution, but is fairly uncommon here. (photo by D. Chipping)

MISSED THE MEETING? YOU CAN VIEW SOME CHAPTER’S PAST PRESENTATIONS ON YOUTUBE

YouTube Videos of some past ZOOM presentations of our chapter’s monthly meetings are available. I would suggest YouTube search of ‘CNPSSLO’, ‘CNPS SLO’ AND ‘CNPS-SLO’ as different programs show up on each search letter combination. You can also see the videos by clicking on the YouTube icon on the main page of our chapter website. It takes you directly to the selection of presentations that have been recorded.

Friday, February 18, 22
Celebrate the First Day of Spring 2022 with the

California Native Plant Society San Luis Obispo Chapter!

Join us for a Hike to Coreopsis Hill (in the Guadalupe-Nipomo Dunes) on Sunday, March 20, 2022, from 9am to around noon. This hike is sponsored by the San Luis Obispo Chapter of CNPS, the US Fish and Wildlife Service, and The Dunes Center, and will be led by Jenny Langford, Lauren Brown, Dirk Walters, and other local botanists and volunteers. The hike will begin at 9:00 AM (please plan to arrive between 8:45 and 9:00), leaving from the south end of Beigle Road at the USFWS access road (fenced road). It will be a casual walk through the dunes to the top of Coreopsis Hill. This is a moderate hike, about 3 hours round-trip. Dress in layers, bring water and snacks, and have your “Dune Mother’s Wildflower Guide” by Dr. Malcolm McLeod for the trip. Long pants and closed shoes are recommended as the habitat is coastal dune scrub and there is the possibility of poison oak and ticks in the natural dune areas (we will watch for and point these out so they can be avoided; bug repellent recommended). We will be limiting the number of people attending this hike to 70 and parking is limited; please call, text, or email Lauren Brown at 805-570-7993, lbrown805@charter.net to sign up (Name, Number of People/Vehicle). Heavy rain cancels this trip (light rain, bring appropriate clothing).

PLANTS YOU MIGHT EXPECT TO SEE ON THE FIELD TRIP
(Clockwise from top left: Amsinckia spectabilis (Seaside fiddleneck); Linanthus californicus (Prickly-phlox); Erysimum suffrutescens (Suffrutescent wallflower); Leptosyne gigantea (Giant coreopsis); Monardella undulata (Dune mint); Abronia umbellata (Pink sand-verbena). (All photos David Chipping)
Many of us care about birds and wildlife and support the existence of national parks and preserves. However, this is not enough, according to Doug Tallamy, entomologist, renowned author, and ecologist. We need to include native plants in our own landscapes so that we can support birds and their survival.

Here is a link to his talk as the keynote speaker of the 2020 Bringing Back the Natives Garden Tour. I guarantee you will be inspired.

Doug Tallamy video: How Gardening with Native Plants Helps Wildlife, (1:41:25) CA Focus: https://www.youtube.com/watch?v=PKe0UzqazuU

Don’t have the time to view this program? Check out this short article, Why Native Plants Matter, on the Audubon website featuring a short video clip of Doug Tallamy:

https://www.audubon.org/content/why-native-plants-matter?ms=digital-acq-ppc-google-x-20210000_google_grant

If you decide to plant California natives to help birds and other wildlife, here are a couple of excellent easy-to-use websites to help you find appropriate plants for your yard:

https://www.calscape.org (by the California Native Plant Society) and https://www.audubon.org/native-plants

You can even register your property as a part of Homegrown National Park, a movement to restore biodiversity one person at a time: https://homegrownnationalpark.org/

Together, we can help to create a beautiful and healthy habitat for wildlife, save water, improve the climate and preserve the Earth for future generations to enjoy.

The Climate Atlas (https://csp-inc.github.io/ClimateAtlas/)

Below is a screen shot of a climate resiliency model of the USA, one of the layers that can be selected within the Atlas. Other model layers include Biodiversity, Carbon, Climate Stability, Ecological Connectivity, Ecological Intactness, Imperiled Species Richness... and more. You can zoom in to local areas..... tools like this can be useful in prioritizing areas under the 30x30 goal by Gov. Newson to conserve 30% of the land by 2030 (Executive Order N-82-20).
Author’s note. Although this story is about an area well removed from San Luis Obispo County, it is a story of persistence and tenacity and overcoming obstacles that CNPS can take great pride in. My own part in it was minor and long ago, but I am so glad that others took up the challenge and saw this effort through to success.

In the late 1970s the Carnegie Cycle Park in eastern Alameda County was in financial trouble. A privately operated off-road vehicle area covering some 1,500 acres, the site had been open to the public but liability insurance costs were becoming a major financial burden. The park became a member’s only facility, still private, but financial difficulties continued to plague it. In 1978 and 1979, reports of an imminent shut-down of the facility began to circulate, and the East Bay Regional Park District, looking to fulfill a feature of its 1973 Master Plan, decided to take a look at the property.

I was tasked with the assignment of checking out Carnegie Cycle Park, and on a tour found the property to clearly have the potential to meet the Park District’s needs; however, certain issues would have to be overcome, and we learned that the State of California, through the State Parks’ Off-Road Vehicle Program, was also looking at the site. The State eventually bought the property and Carnegie SVRA was created and still operates today.

Getting to Carnegie from Oakland involved driving east of Livermore to Corral Hollow Road, then following the road down to the Carnegie site. On the way the road goes over a low pass, then drops steeply down into Corral Hollow. I had read a little about Corral Hollow and some of its interesting features, and driving this road, I immediately noticed the white sandstone that was the counterpart of the Domengine sandstone found in the District’s Black Diamond Mines Preserve. I saw some old tailings and mining structures. I could see what I thought were the remains of a small townsite with some old fruit trees and other evidence of former habitation.

It was love at first sight. I thought that this place was just as important, if not more so, than the Carnegie site itself.

I was able to hike to the site on a later trip and briefly explore the old townsite of Tesla, where workers in the coal mines—again a reflection of the mines at Black Diamond—lived in the small town around the turn of the 19th century. There were remnants of house sites, some persisting garden plantings, and an occasional walkway lined with bricks. But the thing that stuck in my mind was the occurrence of two large mesquite trees, which I was sure were not native but had been planted in what had been someone’s front yard.

This finding drove me to look into the Corral Hollow area and its history and natural history in more detail. I learned about the town of Tesla and its coal mines. I read through Helen Sharsmith’s *Flora of the Mount Hamilton Range*. I also read through Robert C. Stebbins’ *Guide to the Reptiles and Amphibians of the San Francisco Bay Region*. I learned about the Lawrence Livermore National Laboratory and its biologically rich Site 300. From these sources and others I learned a lot about Corral Hollow and the unique place it holds in California biogeography. From all of this, I came to strongly believe that the Tesla site was ideal as a regional or state park. But Tesla was not within the District’s boundaries, and it was evidently not on any list of potential state parks either, so over time the matter “fell off of my radar”. My career later led me to Solano County and then to San Luis Obispo County.

While the matter had fallen off my radar, it had not fallen off others’ radar. Around 2000, Tilden Park Botanic Garden director, CNPSer, and noted anthropologist Dr. Steve Edwards learned that the Tesla Ranch had been purchased by the State of California to be used as an expansion area for the Carnegie SVRA. Steve swung into action, notifying other conservationists about the threat that this action posed for the Tesla Ranch, and folks got organized to take up the fight. A dedicated group of people known as Friends of Tesla Park resisted the ORV designation due to the extraordinary natural and cultural resources of the Tesla site, and did so for years. They contested the Environmental Impact Report for the expansion project, succeeding more than once in having it denied in court, and they eventually secured allies in the State Legislature to submit legislation that would preserve the site as a State or local park. I am proud to say that local members of the California Native Plant Society were prominent in this effort.

At the time of my becoming reacquainted with Tesla and the fight to preserve it in 2020, a bill was in the legislature that would do so by selling the property to a private nonprofit or to the East Bay Regional Park District. This legislation was passed but was vetoed by the Governor, evidently because he did not want the property transferred out of State ownership. I thought I remembered that, years ago, certain park lands at Anza-Borrego State Park had been transferred to the Off Road Vehicle Division for inclusion in the Ocotillo Wells SVRA. Checking on this, I confirmed that it was true; some 2,500 acres of Anza-Borrego had been so transferred around 1990. So it seemed to me that this was a two way street, and wrote to the Governor suggesting that such a transfer was appropriate. Others had the same idea, and in the recent session of the State Legislature, a bill that would effect this transfer and reimburse the OHV Division of the State Parks Department for its expenses at Tesla had been drawn up by the efforts of Assembly Member Rebecca Bauer-Kahan and State Senator Steve Glazer and other members of the East Bay and Bay Area legislative contingent. This bill (AB155 and S155) was passed and signed into law by the Governor on September 23, 2021.

So after forty years, a dream that I had is becoming a reality. This however was due not to me but to the dedicated efforts of the many citizens making up the Friends of Tesla Park, numerous State legislators, and the actions of many environmental groups in the Bay Area and around the State. The lesson here is just don’t give up: if you suffer a setback, back up a step or two, change direction about 5 degrees, and charge ahead again. Persistence pays off.

As we in the SLO chapter of CNPS face challenges in our own area, the struggle to preserve Tesla Park can serve as a strong reminder that overcoming obstacles is a game of persistence and tenacity. We should not be daunted by the issues before us, but we should tackle them head on. We can succeed.
Invasive Species Report by Mark Skinner

*Salsola tragus* Russian Thistle, Tumbleweed

*Salsola tragus* is in the Chenopodiaceae family. The Chenopodiaceae (Goosefoot Family) are named after the genus *Chenopodium* whose name is derived from the Greek for a goose’s foot. It is a profusely branched, rapidly growing, bluish-green summer annual herb, spherical in shape growing to three feet tall. It produces a deep taproot and spreading lateral roots. Flowers are small and inconspicuous, without petals. Plants become gray to brown. Each plant may produce 250,000 seeds. Plants may break off at ground level and roll with the wind scattering seeds. Skeletons can persist for a year or more. Seeds lasts less than two years. These pervasive and widespread plants grow in arid and semi-arid environments including disturbed agricultural fields, road sides and railroad rights-of-way.

The destructive impacts are many including degrading wilderness areas and contaminating seed and container stock. Plants contain oxalates and nitrates which are toxic to livestock. Tumbleweeds are a host to insect pests such as the beet leafhopper. Tumbleweeds fill drainage canals, and pile against fences creating snags for debris and trash. It is a fire and traffic hazard.

Russian thistle is native to southeastern Russia and western Siberia and was introduced into the US as a contaminant in bags of flax seed in South Dakota in 1873 by Russian immigrants. The best *Salsola tragus* control is to plant natives in infested areas and crowd it out. Other effective methods include manual removal of seedlings and mowing before it blooms. Burning doesn't work. Biocontrols are still in early development. Effective chemical treatments include: 2, 4-D and dicamba.
Protecting California’s Native Flora since 1965

The California Native Plant Society is a statewide non-profit organization of amateurs and professionals with a common interest in California’s plants. The mission of the Society is to increase understanding and appreciation of California’s native plants and to preserve them in their natural habitat through scientific activities, education and conservation. Membership is open to all. Membership includes the journal, *Fremontia*; the quarterly *Flora*, which gives statewide news and announcements of the activities and conservation issues, and the chapter newsletter, *Obispoensis*.

San Luis Obispo Chapter of the California Native Plant Society
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