

Stop 1: Welcome to the El Modena Pond on Hewes, in Orange!

Welcome to the El Modena Retention Basin here in Orange, California, next to the El Modena Public Library. My name is Kevin, and I am a Naturalist with a local non-profit organization called

## **Naturalist-For-You!**

Please join us for free interpretive hikes, classes, and activities for people of all ages and backgrounds! You can <u>find classes</u> led by community activists, naturalists, and lovers of the outdoors here in Orange and beyond!

We love meeting you where you are. Our goal is to encourage you to spend time outdoors with your loved ones, and to engage with nature! A lifetime of interactive experience awaits!

Naturalist-For-You offers classes and information that is tailored to your needs for groups of almost any size! Here in Orange County, many activities and clubs exist nearby to engage with and learn more about your favorite things! Do you need a club presentation? Do you need information? Or even just a native's perspective and guide to the area? Please see our website for more information! <a href="https://www.naturalist-for-vou.org">www.naturalist-for-vou.org</a>

**Thank you for joining us** for this free interpretive tour service prepared for your enjoyment! We just want you to have every reason you can to step outside and enjoy nature.

On the path around the pond, take a closer look at all of the beautiful plants and animals that frequent this place! There are many things to see on closer inspection! If you are a pet owner like me, this place has many things to sniff. However, please leave it like you found it, and dispose of all waste at a nearby trash can.

If there is an emergency, Please call 911

In the event of a need for non-emergency services, please call the non emergency line at: 714-744-7444

This facility is maintained by the Irvine Ranch Water District as a Natural Treatment System (NTS). Information about the network of NTS areas can be found here:

https://www.irwd.com/services/natural-treatment-system

Thank you for taking a moment to enjoy your own natural community! There are 10 other Natural treatment Systems that you can visit!



Be sure to see the link below to learn more:

https://www.irwd.com/images/pdf/facilities/nts/nts\_fact\_sheet.pdf

## **Stop 2: History (brief)**

In 1997 Irvine Ranch Water District began treating urban runoff in another series of ponds that were constructed at the end of the Newport Back Bay called the San Joaquin marsh.

It's a 300 acre facility that is designed to allow runoff waters to percolate or filter through wetlands, stimulating the natural environment, and bolstering the surrounding ecosystems.

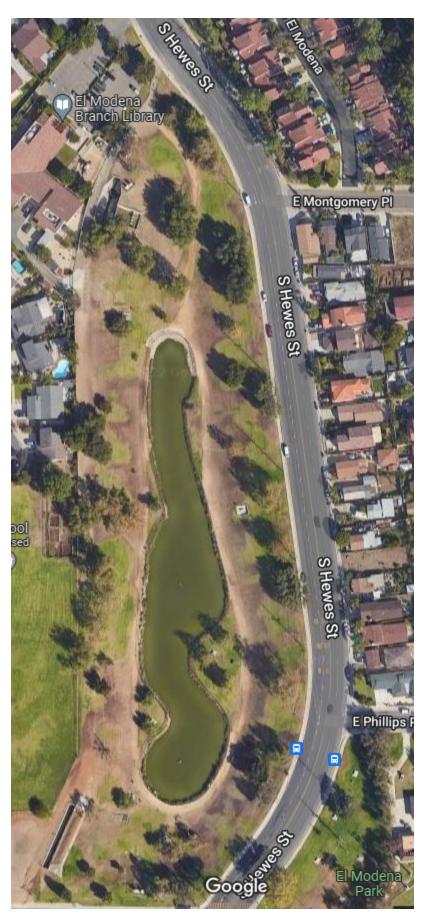
After mapping the areas where stormwater and water runoff flowed through existing infrastructure, Irvine Ranch Water District was able to identify, what used to be a dirt pit near my house as a viable option for a small environmental rehabilitation project.

The adoption and refurbishment of the El Modena Retention Basin happened shortly after the success of the San Joaquin projects were realized.

Now, this small and unassuming park is free to be utilized by all kinds of people, animals, birds, and even a few aquatic species too!

Thankfully, through proper management and consideration of natural systems, what used to be a dirt pit, is now a powerhouse and producer of Ecosystem Services.





## **Stop 3: Interpretation**

This retention basin serves as a runoff flow control mechanism for the surrounding area, and is the farthest northern part of the Irvine Ranch watershed. Originally constructed solely for flood control, we have since realized the value of ecosystem services and their value to the community.

The cycles of nature are interconnected to animals, plants, and the availability of habitat, even in small spaces like this. In this pond, there are only a few main areas of habitat, but nonetheless, they are all extremely valuable in their own right.

The **Pond Surface** absorbs solar energy, allowing for the ecosystem surrounding the pond to benefit from the microclimate that is created at the ground level.

The surface of the pond is somewhat of an ecosystem within itself. Eggs and Larvae are planted there by dragonflies, insects, and other creatures. These eggs support insects that live on the surface, or just below it. Then energy exchange between the sun and the surface of the water stimulates underwater photosynthesis, and both macro (large) and micro (small) - organisms in the water.

The **Pond Bottom** is a place where much of the life in the water thrives. In this body of water, there are a number of common carp that assist in the movement and control of organic (is, or once was living) matter. Carp are mostly vegetarian, and eat tiny pieces

of plant matter, and small organisms like snails, worms, larvae, and other things that fit in their mouths. Here on the pond bottom, decomposition and water purification takes place as a result of a process called Sedimentation, where particles in the water column slowly descend to the bottom. The cleaner water is then able to be cycled in and out of the pond through pipes and canals, leaving Nature to do its business the best way!

This three part ecosystem here at the pond is connected to a much larger web of interactions that spread throughout the local, regional, and even continental communities.

For instance, grasses provide cover for birds, and pollen for bees. When the pollen falls on the feathers of birds, or seeds are eaten by the birds, the plant species can be transported through such means anywhere the bird or bee flies. This is in-fact an essential aspect of natural communities. The interconnectivity of ecosystems creates more opportunities for healthier landscapes.



**Pond Edge (Fringe):** The edge of the pond is where we see the most action ourselves. The flowers, the bank side covered with grasses and shrubs. These things make up the overall ecosystem of the region that we reside in. Sunlight drives photosynthesis, a process by which plants use cells to process carbon dioxide, turning it into oxygen.

### Stop 4: Species Found at the El Modena Pond

The El Modena Retention Basin is a great place to see native species of Orange County up close. However, please do not disturb or feed wildlife, and please respect the park! It is a shared resource.

Species: Encelia californica

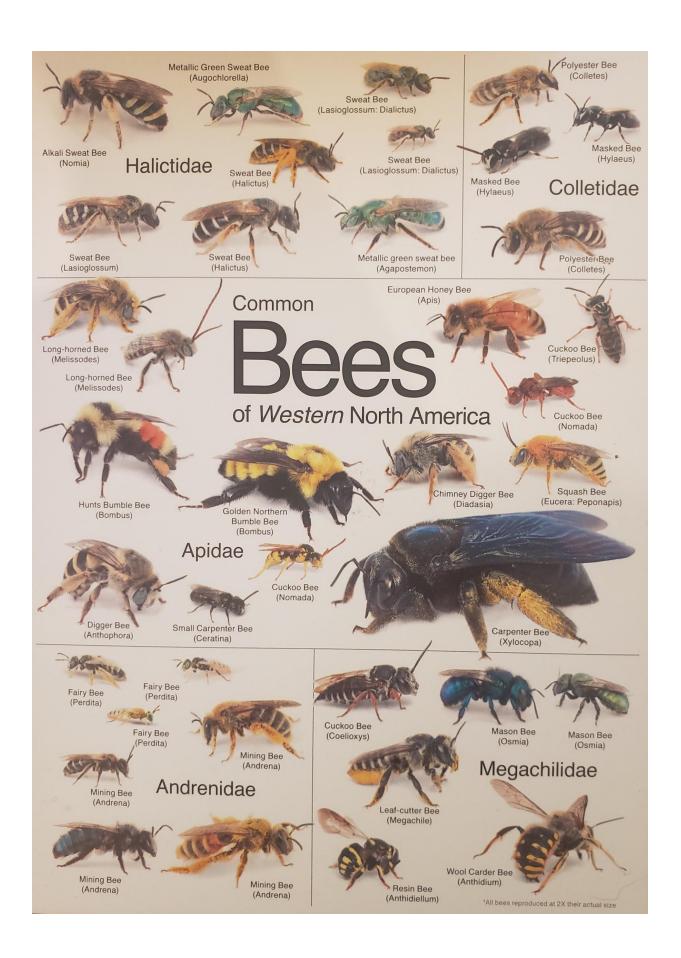
Common Name: California Brittlebush / Bush Sunflower

Encelia californica is a bushy shrub that can grow up to about 5 feet tall, and has daisy-like flowers that look like small sunflowers when it blooms between late winter and spring.



The yellow flowers invite many pollinators and other organisms to flourish in and around this bushy plant.

California bush sunflower is a relatively drought tolerant and hardy species much like the other species around this pond and is found throughout coastal California up to elevations of about 3,000 feet. Check out the infographic on the next page about some of the bees that you may spot flying around this popular bush. If you want to know more, This guide by Joseph S. Wilson is available for free at the library!



# Did you know ...

There are nearly 4,000 bee species in North America; 75% of these live in the West.

#### Some bees are thieves.

Cuckoo bees lay an egg in the nest of other bees. The larva hatches, kills the host bee larva, then eats the pollen left in the nest.

Many native bees are excellent pollinators. In some orchards, 2 mason bees can do as much pollination work as about 100 European honey bees.

Mason Bees

(Osmia)

Instead of carrying pollen on their legs or abdomen like other bees, female masked bees carry the pollen back in their crop (kind of like a stomach) and barf it up in their nest.

Bees come in a variety of sizes. Fairy bees can be as small as George Washington's nose on a Qquarter while some bumble and carpenter bees are so big their head and abdomen would hang over the edge.





(Actual sizes)

Mining bees are some of the first bees to come out in the spring. All mining bees and their relatives nest alone in the ground.

Honey bees are not native to North America. They were brought here from Europe by pilgrims and are the only bee in North America to make harvestable honey.

Many bees are picky eaters and will only visit certain kinds of plants. For example, squash bees will only visit squash flowers while some long-horned bees prefer sunflowers.



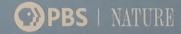
Squash Bee (Peponapis)

## You can help native bees!

The best thing you can do to help bees in your yard is to plant native flowers and leave spots of bare dirt for them to nest in.

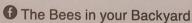
MyGardenofaThousandBees.com

hhmi Tangled Studios

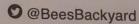


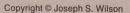


Want to know more about bee identification? Visit BeesinYourBackyard.com or find us on social media at:

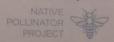






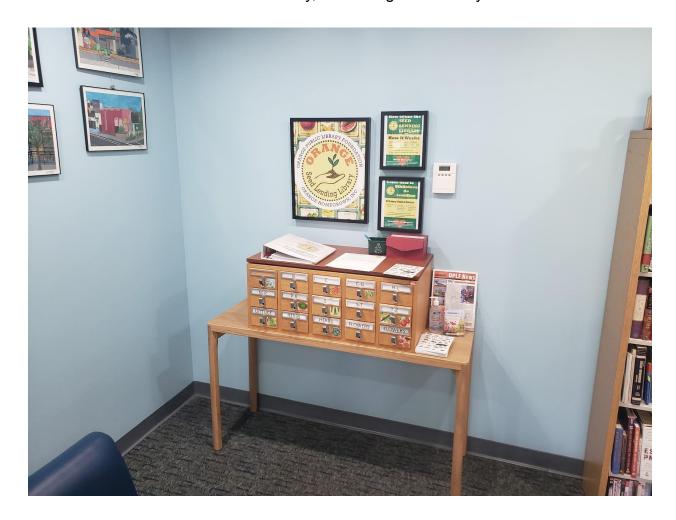






## **Stop 5: El Modena Library Seed Collective!**

Did you know that the El Modena Library, here at the north end of the pond, has a seed collective? A seed collective is a volunteer, free program that allows residents the opportunity to grow seeds that are donated to the library! You can take and grow some for free! They only ask that you attempt to harvest some seeds and bring them back for others to use too! Give to the community, and let it give back to you!



Bring your natives and heirloom seeds in and share the love with your community! This program is free, and you don't even need a library card!

## Stop 6: California Sagebrush

Species: Artemisia californica

Common Name: California Sagebrush

**Identifying Information:** This common, native shrub, is very pleasantly aromatic and grows in a wide variety of communities throughout elevations from 0 to approximately 3,500 feet above sea level.

California Sagebrush (Artemisia californica) is in the sunflower family. It is not related to sage (Salvia sp.), which is in the mint family. It has a similar adaptation to sage in the form of terpenes/terpinoids, which are strong smelling and bitter tasting chemical compounds that protect the plant from herbivores. Sagebrush has different ethnobotanical medicinal uses than sage.

Artemisia has been nicknamed "cowboy cologne" or "cowgirl perfume." Also, it is one of the main plant species within the Coastal Sage Scrub plant community. It is important nesting, foraging, breeding, and cover habitat for the coastal California gnatcatcher (Polioptila californica californica), which is listed as federally threatened and is also designated as a Bird Species of Special Concern by the State of California.

Although this plant is commonly short and low growing, when in ideal conditions, this plant can grow to 10 feet in height. The stems of the plant are thin, flexible, and typically smooth or fuzzy. The leaves are narrow and finger-like, but very light green or gray in color. The leaves and flowers can appear sparse over the majority of the plant. California Sagebrush is very drought tolerant and is a fantastic plant to add to a native garden.

**Uses in History:** *Artemisia sp.* has been utilized throughout history as a medicinal plant in many cases. From pain relief to dentistry, California sagebrush is considered to be one of the most medicinally useful plants in the region. As a tea, sage operates as a remedy for colds and headaches. To treat lesions or painful sores, Artemisia could be made into a paste and applied topically.

Follow the link for its uses: http://naeb.brit.org/uses/search/?string=artemisia+californica

In the photo on the next page, California sage can be seen in early summer, when it is warm and dry in the evenings. The sage feels dry and is very aromatic and pleasant to the nose.



Artemisia californica - California Sage

## **Stop 7: Buckwheat**

Did you know that many of the native species in the southern california region have been used in traditional Native American foods in ways that would make you rethink food? Consider joining one of the Foraging classes that are available! Check the <a href="Naturalist-For-You Meetup schedule">Naturalist-For-You Meetup schedule</a> for more information!

Species: Eriogonum fasciculatum

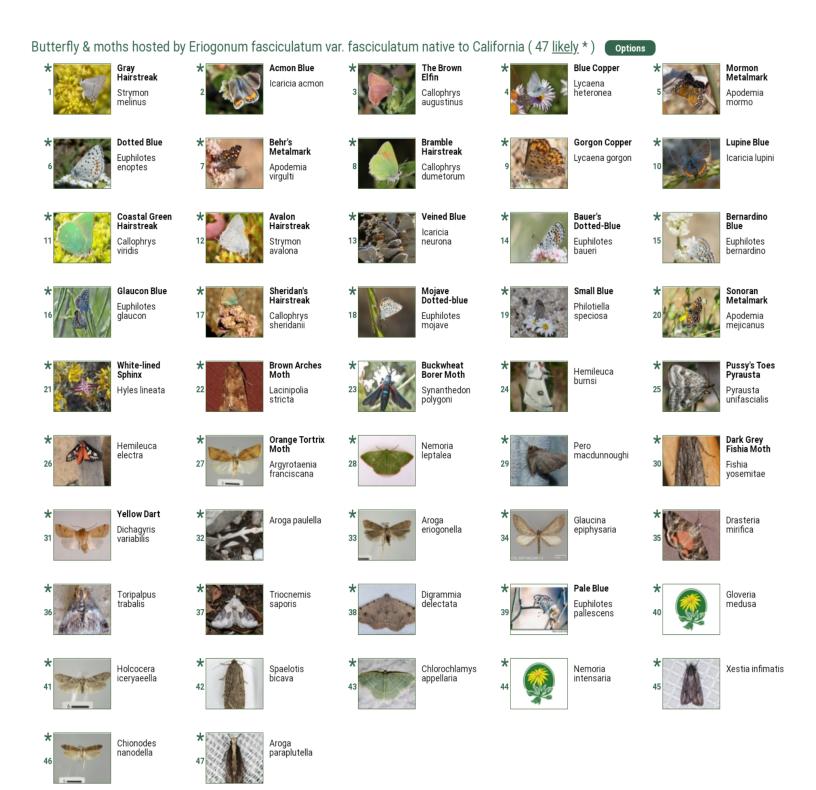
Common Name: California Buckwheat

**Identifying Information:** Common shrub of the southwest United States and Mexico.

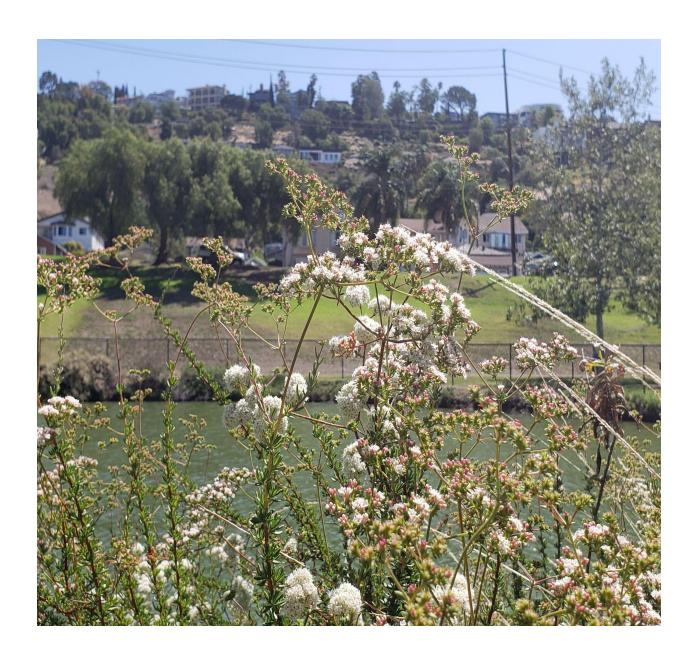
California Buckwheat (Eriogonum fasciculatum var. fasciculatum). The flowers turn reddish brown or rust colored when they are pollinated. It is a member of the Coastal Sage Scrub plant community. It is one of the most valuable plant species for native pollinators.

Some of the most commonly observed pollinators around california buckwheat include the European Honeybee (seen in the infographic above), and all of the butterflies featured in the image on the next page! What an amazing variety of color!

Buckwheat grows on shrubby slopes in drought tolerant conditions. Often grows up to approximately 4 to 5 feet tall. Native to California. Tolerant of a wide variety of conditions, California Buckwheat is an easy to maintain shrub that attracts many pollinators. When in bloom the shrub will be covered in pink and white flowers that look like round bunches. Once the flowers have dried, they turn reddish and drop to the ground. This is an important aspect of this plant because of it's contribution to ground cover and soil quality. With this natural mulch, the soil surrounding these plants is often revitalized.



Here is a Calscape list of the butterflies and moths that rely on Eriogonum fasciculatum: <a href="https://www.calscape.org/plantleps.php?hostsloc=california&species=Eriogonum+fasciculatum">https://www.calscape.org/plantleps.php?hostsloc=california&species=Eriogonum+fasciculatum</a> atum+var.+fasciculatum



#### **Uses in History:**

In the image above, California buckwheat can be seen flowering in the early winter months. As it grows poofy looking flowers that can range in color from wite to bright orange, pink, and red color, these flowers are not only aesthetically appealing, but vastly useful for a variety of reasons.

As a bank stabilizer for rivers and foraging areas where cattle grazed, this plant is essential for the prevention of soil erosion in local communities.

As an important medicinal plant for Native Americans of this region who called it "Hamill", the flowers were collected and boiled into a tea to be used as eyewash, mouthwash, and as a remedy for headaches, stomach aches, and bladder infections.

## Stop 8: More Sage!

Species: Salvia apiana

Common Name: White Sage

**Identifying Information:** White sage is known by a number of names that help to show how important this species is to California.

White Sage can be described as a *cornerstone species*. This means that, when it grows in a community, it allows many other species of plants and animals to thrive around it in unison.

For instance, this type of sage helps bee populations thrive due to the presence of fragrant silver-white leaves, and clusters of small white flowers with purple or lavender colored lines. Because of the recognizability of the scent and the shrubby nature of this species of sage, many insects and other animals thrive due to its presence.

Here in the El Modena retention pond, this species of white sage serves as a bank stabilizer, and due to the deep root systems, and somewhat fast growth rate, this particular example has matured enough to have active and dormant stages of flowering. Include White sage in your garden to promote the presence of pollinators like bees, hummingbirds, and butterflies, and to stabilize ground cover with a beautiful native species!

In particular, some of the most commonly observed species in the area include European Honey Bees (Apis), and Anna's Hummingbirds (Calypte Anna). However, there are over 10 other species of hummingbirds that are native and common to California. Here's a great article that focuses on some of the most visible ones. <a href="https://birdwatchingtips.com/hummingbirds-in-california/">https://birdwatchingtips.com/hummingbirds-in-california/</a>

The white sage in the image below was in bloom at the time, the blooms seen here are beautiful, white, and are frequented by bees and butterflies as well as many birds. The growth of the white sage, in the vertical position, creates stems that can be utilized in many ways when grown in natural spaces. Native Americans used white sage for construction, and used the brittle wood and aromatic leaves for many things.

Salvia apiana - White Sage (In bloom)



## **Stop 9: California Mugwort**

Species: Artemisia douglasiana

Common Name: California Mugwort

Identifying Information: California mugwort is a very widespread species in California. This plant has many historical uses for native Americans due to its availability and fast growth rate. The flowers are small, and although they do not always result in viable seeds, the plant has the ability to spread via its root systems through damp terrain, such as on the banks of wetland areas or stream beds. The mugwort plant species is often found in drainage areas and is very helpful for erosion control and bank stabilization such as in this example.



Mugwort is also capable of withstanding full shade, or full sun, or anything between, so long as it has access to water. In addition to the hardiness with sun exposure, this plant can withstand great varieties of temperatures, and can even be found in parts of California where the temperature drops to 0 degrees.

Mugwort can grow to be up to 8 feet tall, and is often seen with white or yellow flowers in the spring, summer, and fall. Many insects, birds, and other pollinators are attracted to these flowering plants. You can often find California Mugwort at nurseries.

## Stop 10: Grasses

Species: Stipa Pulchra

Common Name: Purple Needlegrass

Identifying Information: Purple Needlegrass occurs throughout California's foothills and valleys, and can be found as far south as Baja California, and as far north as Redding, California. Because this grass is capable of growing deep roots, making it tolerant to drought, it also serves as a bank and soil stabilizer. This prevention of erosion is essential. Purple needlegrass contains seeds in small pods that are positioned in rows at the end of a long stem. In the right conditions, these beautiful tall grasses and their purplish seed pods flow in the breeze and reflect sunlight in a beautiful way. Since this species is so tolerant of drought, and provides deep roots for hillsides and valleys, it makes for an excellent option to replace areas that have been impacted by other more recently introduced, or harmful species.



## **Stop 11: Ecosystem Challenges**

Species: Brassica nigra

Common Name: California Black Mustard

**Identifying Information:** California Black Mustard covers most hillsides around the City of Orange. The bright yellow flowers of California Black Mustard are visible from a distance because it often covers entire hillsides. This recently introduced species of grass is an aggressively fast growing variety of weed from South Africa that made its way to the United States in the early 1900's.

The small, bright yellow flowers grow from stems that emerge from bulbs in the ground. Although the flowers do not seed and do not reproduce through pollination, these flower bulbs in the ground multiply by widespread, interconnected bulbs. Furthermore, it has been observed that birds and other animals may take and "stash" the bulbs in the ground, effectively planting it elsewhere.

Eradication in the state would be impossible due to the vastness of the spread of this invasive plant; however, it's been shown that native landscapes, when managed in a healthy manner consistent with the local conditions, are able to withstand the spread. Although we have known about the problems this plant causes for some time, such as overcrowding native wildflowers, suffocating soils by spreading too thickly across the landscape, and through subtle and yet aggressive means; the only real way to prevent the domination of this weed in disturbed areas is by biological controls and through responsible landscape management.

In other words, We need to take care of our lands together. If we plant native flowers, grow gardens that contain forage for us and for wildlife, and slowly rehabilitate our landscapes, we CAN make impacts that will make our communities beautiful.



## Stop 12: Ducks

Here at the retention basin, many birds and ducks love to rest.

If you look around, chances are you may see some large white ducks, often in pairs that frequent this pond.

These American Pekin Ducks are actually considered to be a hybrid-domesticated species of duck that established its presence in North America in the 19th century. American Pekin Ducks are hardy, generally friendly, and free-range animals that were introduced to the Americas originally as a source of eggs, protein, and due to their tolerance of a wide variety of environmental conditions.

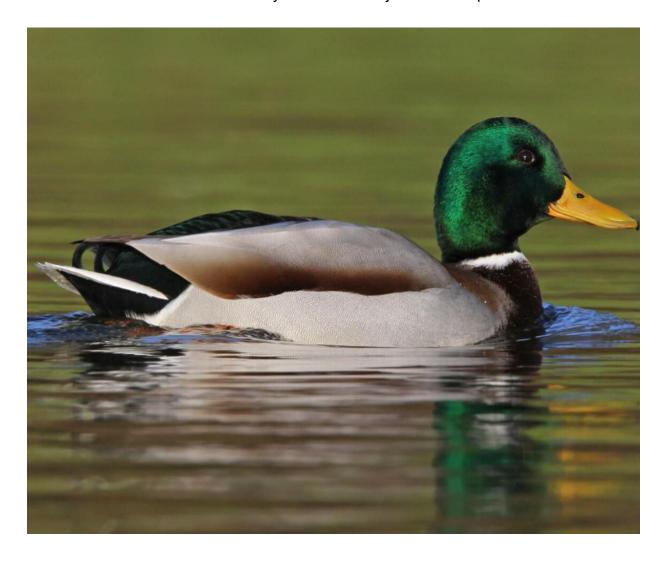


While the plain white Pekin Ducks are rather large, and can be upwards of 10 lbs when full grown, the brown winged, black and white headed Canadian Geese are sometimes even larger! Some of the other most common are the American Mallard, males are characterized by the bright shiny green head and grayish wings, while females are a sandy and peppery brown.

Mallards are monogamous and mate for life. Many of these couples will travel across the entire continent together, frequenting many of the same places along their travels. Such as this pond and others.

Another interesting duck that you would be likely to see here is the American Coot. These small black water birds are identified by their pointed white beaks and capacity to dive beneath the surface of the water. American coots are great swimmers, and will often dive to look for forage.

Did you know that there are actually over 25 other species of ducks that can be found around here? There is a vast variety of wildlife that just needs a place to call home.



## **Stop 13: Some Bird Species Observed**

**Species:** Sialia mexicana

Common Name: Western Bluebird

Western Bluebirds are a beautiful and intriguing bird to observe at the El Modena Pond. As one of the more noticeable and colorful birds around the area, the Western Bluebird loves to sit atop fences and swoop over the surface of the pond catching flies, gnats, and other small insects and prey. The call of the bluebird is bright and cheerful, and a great example can be heard on this webpage:

https://www.allaboutbirds.org/guide/Western Bluebird/overview



## **Stop 14+: Other Bird Species Observed**

| Species (Scientific Name)     | Species (Common Name)  | Native/Non-Native |
|-------------------------------|------------------------|-------------------|
| Accipiter cooperii            | Cooper's Hawk          | Native            |
| Anas americana                | American Wigeon        | Native            |
| Anas platyrhynchos            | Mallard                | Native            |
| Aphelocoma californica        | California Scrub Jay   | Native            |
| Ardea alba                    | Great Egret            | Native            |
| Ardea herodias                | Great Blue Heron       | Native            |
| Bombycilla cedrorum           | Cedar Waxwing          | Native            |
| Branta canadensis             | Canada Goose           | Native            |
| Calypte anna                  | Anna's Hummingbird     | Native            |
| Cathertes aura                | Turkey Vulture         | Native            |
| Charadrius vociferus          | Killdeer               | Native            |
| Corvus brachyrhyncos          | American Crow          | Native            |
| Corvus corax                  | Common Raven           | Native            |
| dryobates nuttallii           | Nutall's Woodpecker    | Native            |
| Egretta thula                 | Snowy Egret            | Native            |
| Euphagus cyanocephalus        | Brewer's Blackbird     | Native            |
| Fulica americana              | American Coot          | Native            |
| Geothlypis trichas            | Common Yellowthroat    | Native            |
| Haemorhous mexicanus          | House Finch            | Native            |
| Hirundo rustica               | Barn Swallow           | Native            |
| Icterus cucullatus            | Hooded Oriole          | Native            |
| Junco hyemalis                | Dark-eyed Junco        | Native            |
| Leiothlypis celata            | Orange-crowned Warbler | Native            |
| Mareca americana              | American Wigeon        | Native            |
| Melozone crissalis            | California Towhee      | Native            |
| Mimus polyglottos             | Northern Mockingbird   | Native            |
| Oxyura jamaicensis            | Ruddy Ducks            | Native            |
| Petrochelidon pyrrhonota      | Cliff Swallow          | Native            |
| Psaltriparus minimus          | American Bushtit       | Native            |
| Regulus calendula             | Ruby-crowned Kinglet   | Native            |
| Sayornis nigricans            | Black Phoebe           | Native            |
| Sayornis saya                 | Say's Phoebe           | Native            |
| Selasphorus sasin             | Allen's Hummingbird    | Native            |
| Setophaga coronata            | Yellow-rumped Warbler  | Native            |
| Sialia mexicana               | Western Bluebird       | Native            |
| Spinus spaltria               | Lesser Goldfinch       | Native            |
| Spizella passerina            | Chipping Sparrow       | Native            |
| Troglodytes aedon             | House Wren             | Native            |
| Tyrannus vociferans           | Cassin's Kingbird      | Native            |
| Vireo plumbeus                | Plumbeous Vireo        | Native            |
| Zenaida macroura              | Mourning Dove          | Native            |
| Amazona viridigenalis         | Red-crowned Amazon     | Non-Native        |
| Anas platyrhynchos (hybrid)   | Funny Ducks            | Non-Native        |
| Anas platyrhynchos domesticus | Domestic Duck          | Non-Native        |
| Cairina moschata domestic     | Domestic Muscovy Duck  | Non-Native        |
| Columba livia                 | Rock Dove              | Non-Native        |
| Gallus gallus domesticus      | Chicken                | Non-Native        |
| Lithobates catesbeianus       | American Bullfrog      | Non-Native        |
| Passer domesticus             | House Sparrow          | Non-Native        |
|                               | ·                      |                   |
| Streptopelia decaocto         | Eurasian Collared Dove | Non-Native        |
| Sturnus vulgaris              | European Starling      | Non-Native        |
| Trachemys scripta             | Yellow-bellied slider  | Non-Native        |
| Trachemys scripta elegans     | Red-eared Slider       | Non-Native        |
| Zosterops simplex             | Swinhoe's White-eye    | Non-Native        |

## **Stop 12: Don't Forget!**

Please don't forget to check out programs and events with Naturalist for You!

In addition, Please thank the El Modena Library and the Orange County Seed Collective and stop by to ask questions about how to take care of your garden in the most natural way!

Seeds for native and heirloom plants, veggies, and flowers are available for free. The only ask is that you try and save seeds to donate back to the library!

Thank you so much for reading this interpretive guide for the El Modena Retention Basin!

\*Naturalist For You (NFY) is a 501(c)(3) environmental education non-profit & a charitable body, a SCIO registered in Scotland, with registration number SC045993. All donations are tax-deductible. Thank you for connecting with us!



\*\*This presentation was prepared with volunteer effort by local park patron, Kevin Bolland, of Orange, CA. www.Greenisms.com