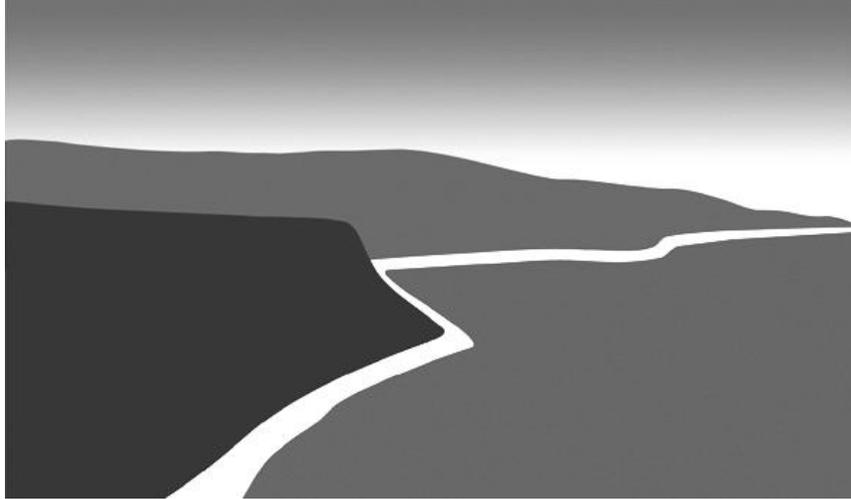


PALOS VERDES PENINSULA  
LAND CONSERVANCY



Nature Handbook  
For  
**STUDENT NATURALISTS**





# PALOS VERDES PENINSULA LAND CONSERVANCY



## NATURE HANDBOOK For Student Naturalists



The Kenneth T. and Eileen L.  
**NORRIS**  
FOUNDATION

**COX**

  
*National Charity League, Inc.*  
*Mothers AND Daughters SERVING COMMUNITIES Together*

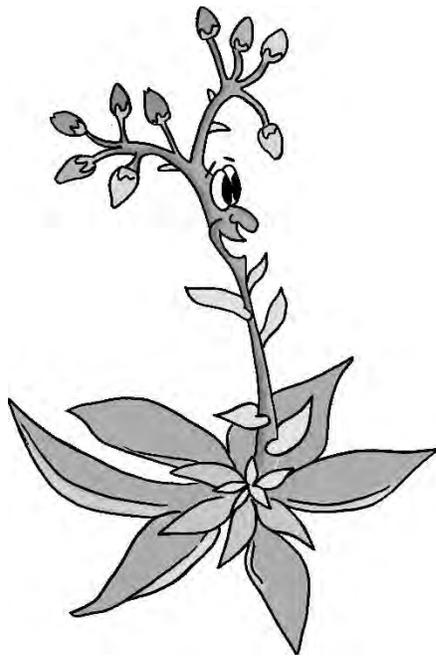
Bringing us closer

The Student Naturalist Program and Nature Handbook are made possible by generous grants from the Kenneth T. and Eileen L. Norris Foundation, Cox Communications, National Charity League, Palos Verdes Peninsula PTAs, Palos Verdes Peninsula School District, California State Habitat Conservation Fund for Wildlife Area Activities, and the supporters of the Palos Verdes Peninsula Land Conservancy. With the sustained support of these organizations, the program now annually serves 23 schools and over 1600 students in the South Bay area.



# Table of Contents

<b>Introduction</b>	<b>3</b>
<b>About the Conservancy</b>	<b>5</b>
<b>Welcome Naturalists</b>	<b>7</b>
<b>Geography</b>	<b>8</b>
<b>Mammals</b>	<b>13</b>
<b>Birds</b>	<b>19</b>
<b>Reptiles</b>	<b>26</b>
<b>Insects</b>	<b>30</b>
<b>Plants</b>	<b>32</b>





# Introduction & Acknowledgements

**The Palos Verdes Peninsula Land Conservancy** is very pleased to provide this *Palos Verdes Peninsula Nature Handbook for Student Naturalists* to help students learn about the natural open space on this unique Peninsula. This program has been connecting 3<sup>rd</sup> grade students with natural open space since 1995.

Several fine Palos Verdes Peninsula philanthropic organizations have provided support throughout the years. The Third Grade Naturalist Program and Nature Handbook are made possible by generous grants from the Kenneth T. and Eileen L. Norris Foundation, Cox Communications, National Charity League, Palos Verdes Peninsula PTAs, Palos Verdes Peninsula School District, and the supporters of the Palos Verdes Peninsula Land Conservancy. With the sustained support of these organizations, the program now annually serves 23 schools and over 1600 students in the South Bay area.

The success of this program is due to the consistent efforts of the Conservancy Education Program team, and above all to the amazing classroom docents from the Palos Verdes Peninsula Land Conservancy. They are dedicated, flexible and use good humor to take each challenge in stride. Thank you all!

For more information, please visit:



PVPLC.ORG

The 5-week program is a combination of 4 weekly classroom sessions and a field trip on the fifth and final session. The docents teach from the handbook and bring in exhibits of artifacts, plant cuttings, animal pelts and other hands-on opportunities relating to each section of the handbook. Please note the activity pages that cover the subjects discussed in each chapter.

Typically, the field trip is a local nature hike utilizing parent volunteers at learning stations along the route. The parent volunteers are trained to explain various elements of the nature trail's geology, cultural history, native plants and non-native plants to the children. The route is an area of native habitat located within walking distance of the school site. As the children walk the trail, they are introduced to the Peninsula's ecology in its natural setting. The Conservancy welcomes the assistance of parents on the walk. By leading a group of students or staffing a learning station, parents can share their student's experience and learn something new as well. During times when an in-person visit is not possible due to health or other safety issues, a live virtual experience is provided.

Whether walking through a vast nature preserve or along sidewalks near schools, nature peeks through and softly calls on all of us to explore and learn.

## **© 2021 Palos Verdes Peninsula Land Conservancy**

**No part of this booklet may be reproduced in any form, or by any electronic, mechanical, or other means, without crediting the Palos Verdes Peninsula Land Conservancy/PVPLC.ORG and obtaining permission from the Palos Verdes Peninsula Land Conservancy. It is the policy of the Conservancy to share its work and to provide permission for any reasonable use of these materials.**

**To obtain written permission for your organization's use of the material, call the Conservancy office at 310-541-7613, or send an e-mail to [info@pvplc.org](mailto:info@pvplc.org).**

# About the Conservancy



**The mission of the Palos Verdes Peninsula Land Conservancy is "preserving land and restoring habitat for the education and enjoyment of all."**

**PALOS VERDES PENINSULA  
LAND CONSERVANCY**



Since it was founded in 1988, the Palos Verdes Peninsula Land Conservancy has successfully preserved 1,600 acres of open space on the Palos Verdes Peninsula. The Conservancy's goal is to preserve natural open space where visitors may enjoy peaceful solitude, where children and adults can learn about the natural environment, and where native plants and animals can thrive.



# Welcome Naturalists!

Welcome to the Palos Verdes Peninsula Land Conservancy Student Naturalist Program! A **naturalist** is someone who studies nature. During this program we are going to have a lot of fun learning about nature in school, then we are going to go on a field trip to explore nature directly. We will also learn about how important nature is and how we can all work together to **conserve** it!



**Conserve** – To protect something from harm or destruction.

**Naturalist** – A person who studies nature.

# The Palos Verdes Peninsula

## Geography of the Palos Verdes Peninsula



Can you find where your school is located on this satellite picture of the peninsula?

**Geography** is the study of land and water and the way people, plants, and animals live on them. We can study our local geography to learn more about the place where we live and the nature that surrounds us.

Did you know your school is on or very near a peninsula? A **peninsula** is a piece of land that is surrounded by water on all but one side. Our peninsula is surrounded on three sides by the Pacific Ocean.

There are many interesting landforms here on the peninsula. There are steep hills and deep canyons. Along the coastline, there are coves with rocky tidepools and sandy beaches. As we explore the geography of the peninsula, you may notice that there are many different conditions. Some places are very steep and dry while others might collect more water when it rains. Some areas are in the hot sun all day, and other areas are often in the shade. These different conditions make different homes or habitats for the plants and animals that live here. A **habitat** is the place where an organism lives and meets its needs. Many plants and animals can only survive in certain habitats.

### Habitats of the Peninsula

There are 5 main types of habitats on the peninsula. See the chart below. Which habitats have you visited before?

Habitats of the Peninsula				
				
				

When learning about nature, it is important to think about the past, the present and the future. Many things have changed over time on the Palos Verdes Peninsula while others have remained the same. One thing that has not changed is that people have always relied on natural **ecosystems** for survival.

## Life on the Peninsula in the Past

There was not always a peninsula here because this area was once completely covered by the ocean! About a million years ago the land began to rise out of the water as an island. The island later connected with the mainland to form a peninsula. The peninsula is still rising about one foot every thousand years!

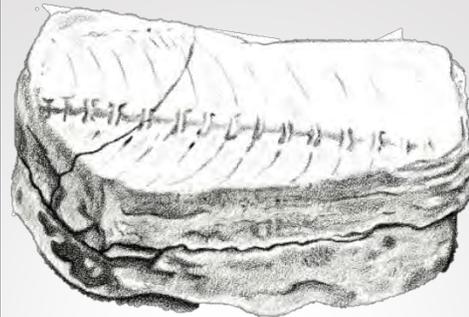
People have been living on the peninsula for thousands of years. The local Native American Tongva people were excellent **naturalists**. They relied on their knowledge of the peninsula's plants and wildlife in their daily lives. Everything that the Tongva people used, including their food, clothing and medicine, could be found nearby in nature. Many of these **natural resources** were plentiful in the different habitats here on the peninsula.



Imagine that you are a Tongva child sitting in the place where you are sitting right now, but 500 years ago. You see deer wandering across the **grasslands**, hawks soaring over the **scrublands**, a grizzly bear eating berries in a **woodland**. You hear your friends playing together nearby and you smell your family's cookfire.

During the summers, your family would camp near the beach. The **ocean habitat** provided plenty of delicious food for your village. You would spend your days exploring the shore and helping your family to hunt for fish, seals,

### Clues from the Past



Sometimes being a naturalist is a little like being a detective. We can make observations that give us clues about what happened in the past. The fossil of a fish's backbone in the picture above was found in a dry hillside with the fossils of many other ocean animals. *What might this tell us about how the environment has changed over time?*

sea otters and abalone. The otter fur would make warm blankets, and the abalone shells could be carved to make jewelry and tools like fish hooks.

When the cold, rainy season came, your family moved back inland near **wetlands** where they could catch fish and hunt migrating birds. At that time, the Tongva also visited the **scrublands and grasslands** to hunt deer, rabbits and squirrels which provided more good food. The fur from these animals was also used to make warm clothing and blankets for the cool winter.

Plants were very important to the Tongva. Your family knew the right season and habitat to visit to gather seeds, greens, fruit and roots that were good to eat. You could go with your mother to the **woodlands** to harvest black walnuts, elderberries, toyon berries and Catalina cherries to eat. In the **grasslands**, you could dig for edible bulbs. Branches from mule fat bushes were also collected from scrubland and wetland habitats and carved into tools to start cooking fires.

There were no hospitals, but Tongva healers went to the **scrublands** to find plants like sagebrush that could be used to cure sickness or relieve pain.



Large forests did not grow on the peninsula, so Tongva families like yours built homes that did not require a lot of wood. Both willow trees and cattails were harvested from **streamside woodland and wetland habitats** for construction. The flexible willow poles were used to build the frame of the house. The frame was then covered with bundled

cattails and tule reeds. The weather on the Peninsula is mild, so this comfortable home protected your family from summer sun and winter rain.

As a Tongva child, you'd have known that other villages weren't far away. There were villages throughout the area, and each had special natural resources to trade. **Natural resources** are materials that people use from nature. Your family's otter skins, fish and shells could be traded for the acorns and deerskins of inland villages. Soapstone was a natural resource needed for making cooking pots but was only found on Catalina Island. You might have gone on a voyage there to trade with villages on the island.



*Mission San Gabriel*

In the late 1700's, two hundred years after the first European explorers came, Spaniards began to settle permanently in California. As they moved in with their cattle and horses, the native plants and animals that the Tongva had relied on for

food and medicine started to disappear. The Tongva were forced away from their villages and traditions, and many did not survive the new diseases the settlers introduced. As the new colonists' settlements grew, the Tongvas' world was forever changed.

## **In the Present**

Today, members of the Tongva community live amongst the 10 million inhabitants of Los Angeles County. They strive to keep their community strong, passing down their traditions and are working to revive their language. It is important that we all recognize and honor their role as the first naturalists here on the peninsula.

Many other people from all over the world have come to this area, drawn by its rich natural resources, pleasant weather and opportunities for work. This has caused many changes to the natural **ecosystems**. As naturalists, we will study the plants and animals that are still found in this area and the natural habitats that they depend on for survival. The Palos Verdes Peninsula Land Conservancy is working hard to conserve these natural habitats to make sure that wildlife continues to have a home on the peninsula.

## **In the Future**

Our health is dependent on the health of the natural **ecosystems** we rely upon for survival. Looking into the future, we all need to think about how the choices that we make will impact our **natural resources**. Consider how you can contribute to your community by helping to protect nature!

**Ecosystem** - Living and nonliving things that interact to provide the basic needs of the organisms that live there.

**Habitat** – The place where an organism lives and meets its needs.

**Natural Resource** – Materials, such as water, minerals, energy and soil that people use from nature and natural systems.

1. Match each natural resource with how it has been used by the Tongva and which habitat it is found in.

<u>HABITAT</u>	<u>NATURAL RESOURCE</u>	<u>USES</u>
	Willow	musical instruments
	Cattails	clothing & jewelry
	Sagebrush	medicine
	Abalone	food
	Elderberry	tools
	Toyon	trade
	Catalina Cherry	games
	Black Walnut	shampoo
	Cottontail Rabbit	dye or paint
	Mule Fat	construction

2. Using the descriptions that you read in this chapter, draw a scene of what your schoolyard might have looked like 500 years ago.



# Mammals

**All mammals feed their babies milk and have hair** for at least part of their **life cycle**. Squirrels are born hairless, then grow hair to provide warmth and protection before they leave the nest. Dolphins are born with a few hairs on their chin, but the hairs fall out, leaving the dolphin streamlined for swimming. Since they are mostly hairless as adults, dolphins and whales have blubber to keep them warm.

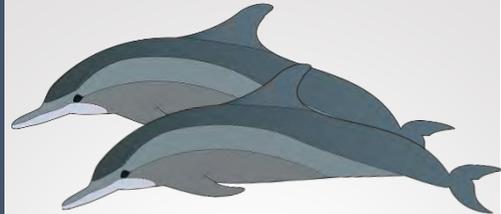


**Many mammals have called the Palos Verdes Peninsula home** over time. Do you recognize the mammal on the California State Flag? It is a California grizzly bear, our official state animal, which was once a common resident here. Unfortunately, the California grizzly

bear was feared by settlers and was hunted to **extinction**. Similarly, mountain lions, bobcats, wolves and deer were no longer able to survive here as more and more settlers arrived.

**Mammals that live on the Peninsula today have adapted to living near people.** You won't see them very often though, because most will avoid you if they can. Many are **nocturnal**, which means they are active at night and asleep during the day. If you know what to search for, you can find clues an animal has left behind. Look for scat (that's what we call animal poop), tracks (animal footprints), holes in the ground and fur to learn which mammals have visited.

## Teaming Up for Survival

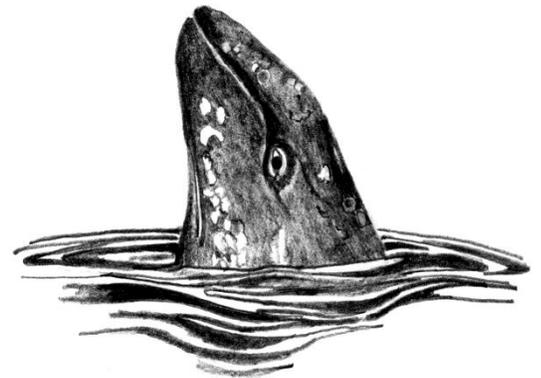


**Mammals often form groups** that can help the members survive. Dolphins hunt in pods and coyotes hunt in packs because teamwork makes it easier to catch fast prey. California ground squirrels live in colonies. Lookouts warn the group with loud alarm calls when there is danger. These squirrels can even warn each other about what type of predator is approaching. *How might this help them survive?*



**Different types of mammals survive in different habitats.** While most of the mammals that we see around our neighborhoods would not be able to survive for long in water, marine mammals rely on the ocean habitat to survive. Many marine mammals can be seen from our shores including whales, dolphins, seals and sea lions. While seals and sea lions come on land to have their young and rest, whales and dolphins spend their entire life cycle in the water.

Sea otters were also once common in our waters but, like the California grizzly bear, they were hunted until there were none left in the area. Many of the whales we see along the Peninsula were also hunted and are now Endangered Species. The gray whale that we see during its yearly migration was an Endangered Species that almost went extinct. Thankfully, with protection, these gray whales are doing much better and are no longer listed as endangered. We can work together to make sure that habitats both on land and at sea are protected and continue to provide a healthy home for our unique wildlife.



## What you can do to help mammals

### At home

1. Never feed wild mammals; this can make them too tame and cause problems for them and us.
2. Do not leave pet food out where wild animals can find it and develop bad habits.
3. Avoid using poison for rodent control.
4. Install a bat house near your home.
5. Reduce, Reuse and Recycle to keep litter out of the watershed. Plastics in the ocean are dangerous to marine mammals and other wildlife.

### In the Nature Preserves

1. Keep your dog on leash so it doesn't chase wildlife.

### Learn More

Visit the Marine Mammal Care Center at Fort MacArthur, Cabrillo Marine Aquarium and Point Vicente Interpretive Center to learn more about marine mammals.

### If you find a sick or injured mammal...

You can call for local advice:

South Bay Wildlife Rehab  
(310) 378-9921

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

For marine mammals:

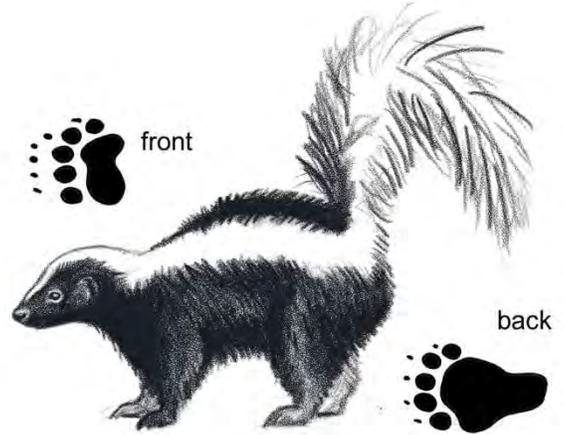
Marine Animal Rescue  
(800) 399-4253

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

Here are some mammals that live on the Palos Verdes Peninsula:

### — **Striped Skunk**

Everyone knows about the skunk's smelly reputation. The skunk wears its distinctive black and white fur to stand out to other animals, and it boldly wanders where it pleases. Other animals will stay out of its way. Can you guess why? If a skunk feels threatened, it will first stamp its front feet as a warning before turning and raising its tail to spray. Skunks are nocturnal and omnivorous. They use their long claws to dig for grubs and other tasty invertebrates.



### — **Opossum**

The opossum is the only marsupial in North America. This means that after the young are born they live for a while in a pouch, like kangaroos. As the babies get bigger they come out of the pouch and ride on the mother's back. Have you heard the expression "playing possum"? When in danger the opossum will lie down and stay very still, almost like it is dead. This is called "playing possum".

Opossums are nocturnal and omnivorous. Opossums are not native to California and were brought here from the east in the 1920s.



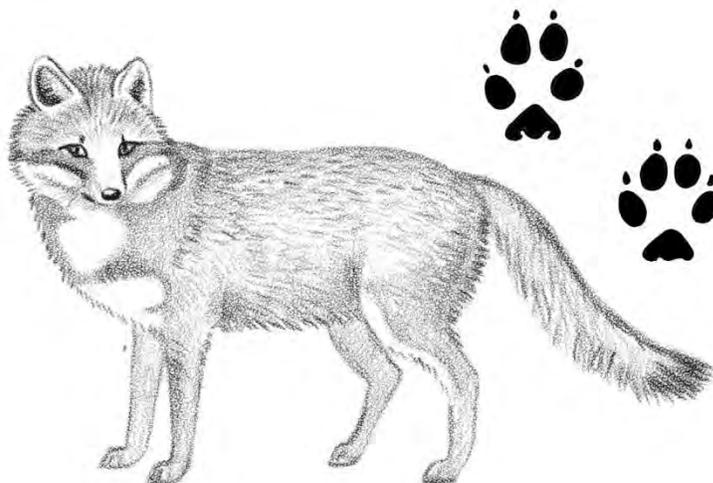
## **Raccoon**

The raccoon has a black mask around its eyes and a tail that is striped. Raccoons are very clever and can use their nimble paws to climb, find food, and even open lids or doors! They are nocturnal and omnivorous.



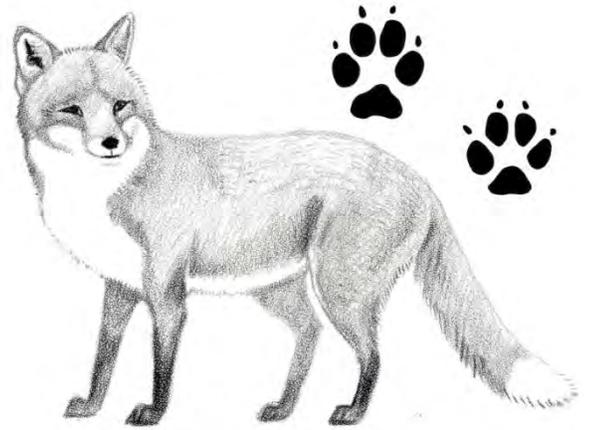
## **Gray Fox**

The omnivorous gray fox eats small mammals, birds, insects, berries and seeds. The gray fox has gray fur and a black tip on the end of its tail. The sharp curving claws of the gray fox make it the only fox that can climb trees. It is shy and is mostly nocturnal, although it will also hunt in the daytime. Notice how its tracks look similar to those made by dogs. Foxes are in the dog family, along with wolves, coyotes and pet dogs!

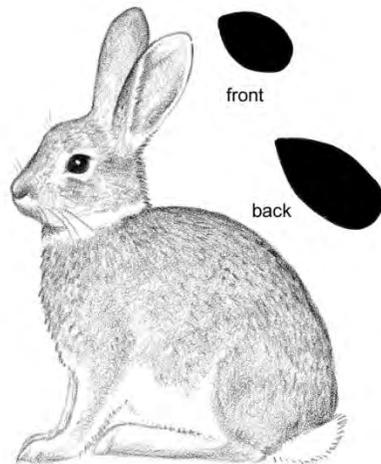


## Red Fox

The omnivorous red fox loves to eat small mammals, birds, insects, fruit, and seeds. In urban areas this fox will also scavenge through the garbage. The red fox usually has a white tip on the end of its tail. Not locally native, the red fox was brought to Southern California for fox hunting and it was also valued for its fur. It is mostly nocturnal.



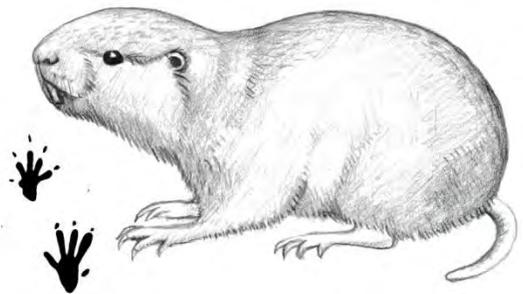
## Cottontail Rabbit



Rabbits have eyes on the sides of their heads to see all around. They also have long ears that can twist to hear from all directions. Many types of animals hunt the rabbit. Rabbits can run in a zigzag pattern to try to escape predators, or they can stay very still to blend in with their surroundings. Rabbits are herbivores and eat lots of grass and other plants.

## Pocket Gopher

The gopher lives mostly underground and has claws for digging and long front teeth for chewing up roots. The gopher will sometimes pull a plant down into the ground from below. The gopher uses pouches in its cheeks for carrying food back to the safety of its underground tunnels.

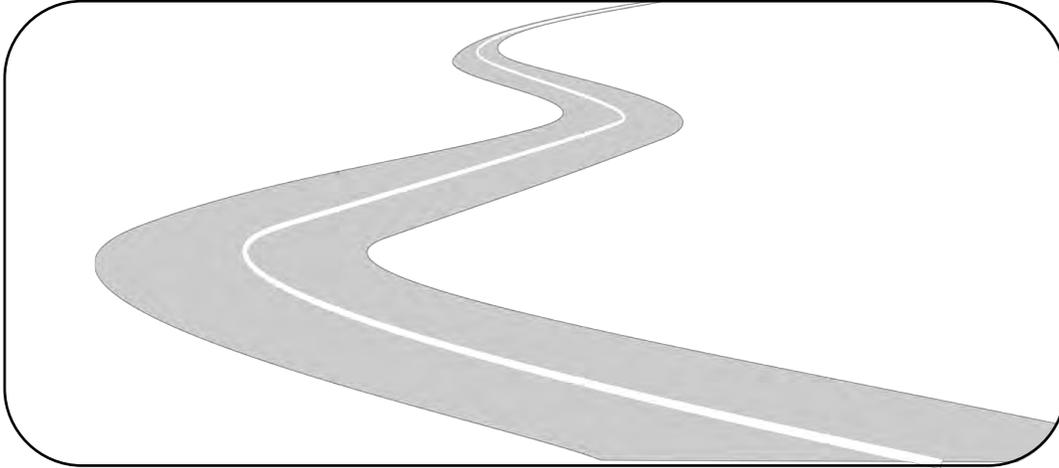


# Mammals Activity Page

1. Circle the mammals below that are no longer able to survive here on the peninsula now that their habitats have changed.

Raccoon   Grizzly Bear   Striped Skunk   Mountain Lion   Gray Fox   Deer

2. One challenge that mammals face is that their habitat has been broken up into smaller pieces by buildings and roads. In the model below, design a way to help our local mammals cross the road more safely.



3. Select and circle one of the following mammals that interests you.



- b) In your opinion, how well will the solution that you designed work for the animal that you circled? Why?

This solution will/won't work well because \_\_\_\_\_  
\_\_\_\_\_.

4. What can you do to help protect local mammals?

# Birds



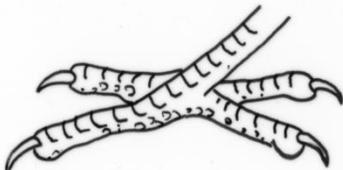
**Every bird hatches from an egg and grows feathers during its life cycle, but not all eggs or feathers are the same. Birds have different traits that help them survive in different habitats.**

We are fortunate that more than 300 species of birds are seen here on the Palos Verdes Peninsula. They range in size from the tiny Allen's Hummingbird, which is as light as a penny, to the huge Brown Pelican. Brown Pelicans can have a wingspan over six and a half feet wide! Some birds form large flocks that help the members survive while other birds spend more time alone. We can learn a lot about nature by studying birds.

**Different types of birds depend on different habitats for survival.**

Some local birds, like Mockingbirds, are able to thrive in a wide variety of **habitats** and may even be found in the **urban habitat** near your home or school.

Other birds have very specific needs. Pelicans have a huge beak that works like a fishing net. Pelicans can only survive if they can catch fish, so they depend on a healthy **ocean habitat** for food. Our local Brown Pelicans build their nests on the ground. To safely raise their chicks, they must nest on islands where there are no predators.



Woodpeckers rely on **woodland habitat** because they carve their nests into trees and eat insects that they peck from the wood. Their feet have two toes facing forward and two facing backward, which helps them climb up and down trees.

**Some birds are extremely rare and are threatened by changes to the environment.**

Both the California Gnatcatcher and Coastal Cactus Wren are threatened with **extinction** because the **scrubland habitat** that they rely on is vanishing. The Land Conservancy is working hard to restore their habitat, and both of these rare species nest in our nature preserves.



The Brown Pelican and the Peregrine Falcon are local birds that were both once listed as Endangered Species. Thankfully, scientists have worked to develop solutions to the environmental changes challenging these birds. Now, both Brown Pelicans and Peregrine Falcons can be commonly seen soaring along our coastline.

**What you can do to help birds**

**At home**

1. Keep cats indoors. Cats kill billions of birds annually.
2. Decorate your windows to prevent birds from crashing into the clear glass, which can be hard for them to see.
3. Make a bird bath.
4. Give nests space, don't get too close or you will scare the parents.

**In the Nature Preserves**

1. Keep your dog on a leash so it doesn't chase birds.
2. Stay on the trail so you don't disturb birds or their habitat.
3. Be a citizen scientist, share your bird observations at eBird.org and photos at iNaturalist.org.
4. Help us restore habitat – join our volunteer team!

**If you find a lost baby bird...**

1. If it is not injured and is too young to hop/walk, then put it back in the nest.
2. If it is not injured and is old enough to hop/walk, put it in a safe, leafy tree or shrub.
3. Watch from out of sight for at least an hour to see if a parent returns.
4. If the baby is sick, injured, or the parents do not return, place it in a safe box in a warm, dark, quiet location and call:

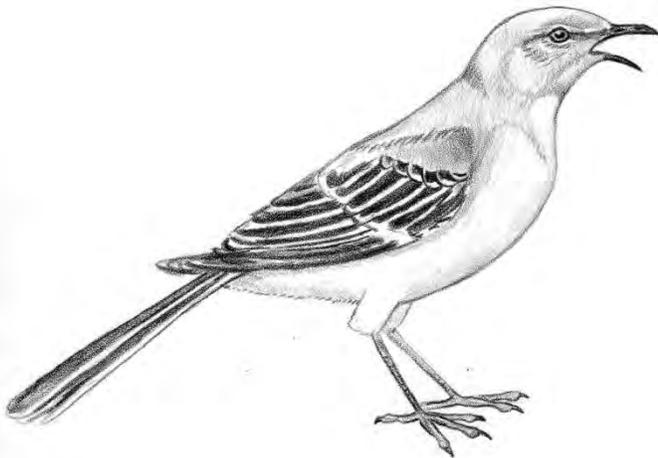
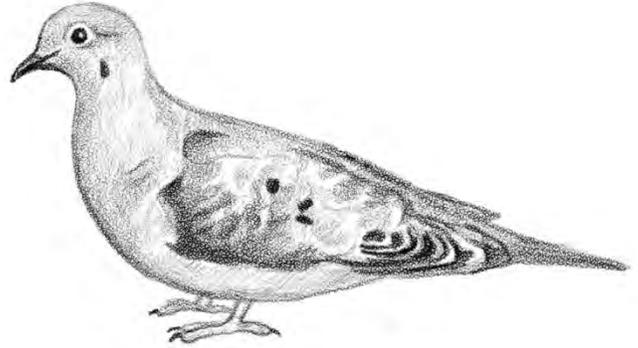
South Bay Wildlife Rehab  
(310) 378-9921  
Learn more at: [www.sbwr.org](http://www.sbwr.org)

## Local Birds

Let's take a closer look at some birds you may see living around you.

### Mourning Dove

If you think you hear an owl calling in the morning, you are probably listening to a Mourning Dove. It has a call similar to an owl's, but owls would be asleep in the daytime. You will hear a whistling sound from its wings when it takes off in flight. They build their nests in a variety of places and sometimes even nest right near houses in hanging flower pots or bushes. Mourning doves eat seeds.

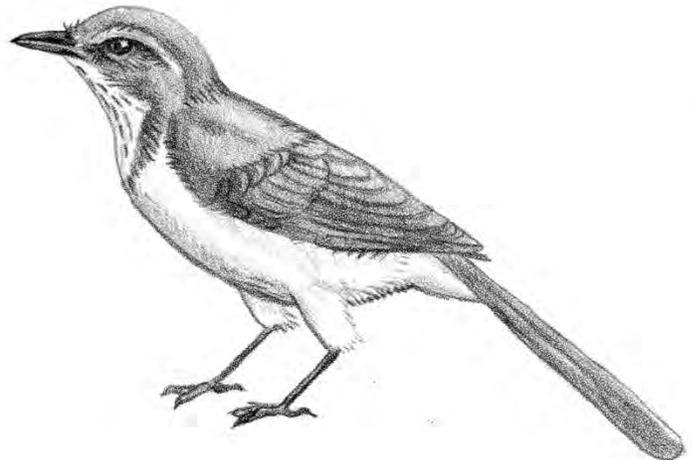


### Mockingbird

Mockingbirds copy the songs of other birds, as well as many other sounds. They will sing all night when they are nesting. They are mostly gray in color, but watch for a flash of white on each wing when they fly. They eat insects and fruit and can survive in a wide variety of habitats, including urban areas.

### Scrub Jay

The Scrub Jay has lovely blue feathers on its head, back and tail. As its name suggests, it lives in the scrubland habitat but can also be found in woodlands. They are clever birds that eat seeds, grains, berries, fruit and even small animals.

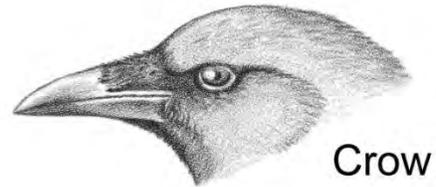


## Raven and Crow

Both the raven and the crow have a glossy black coloring. Many people find them difficult to tell apart. The raven is larger than the crow and has a wedge-shaped tail for soaring. Ravens and crows are not picky eaters. They will eat anything edible. Both ravens and crows are very intelligent. Crows often fly in large flocks which work together to get food and chase away predators. Ravens may join flocks when they are young but tend to travel in pairs when they are adults.



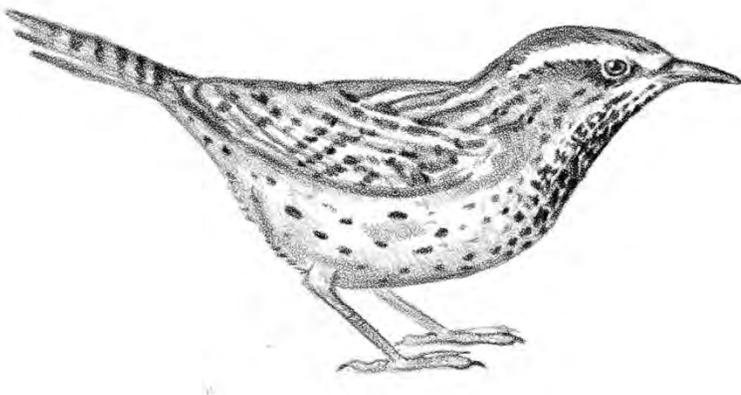
Raven



Crow

## Cactus Wren (Coastal)

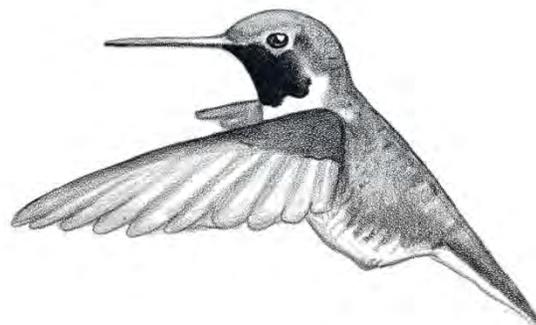
The Cactus Wren builds its nest in cactus patches, where its young will be protected from predators by the sharp spines. Cactus wrens eat mostly insects, but they also eat cactus fruit and seeds, along with an occasional lizard. The patterns on the cactus wrens' feathers help them camouflage in their scrubland habitat. As their



habitat has become rarer, so has the cactus wren. PVPLC works hard to protect and restore the cactus patches that this bird depends on for survival.

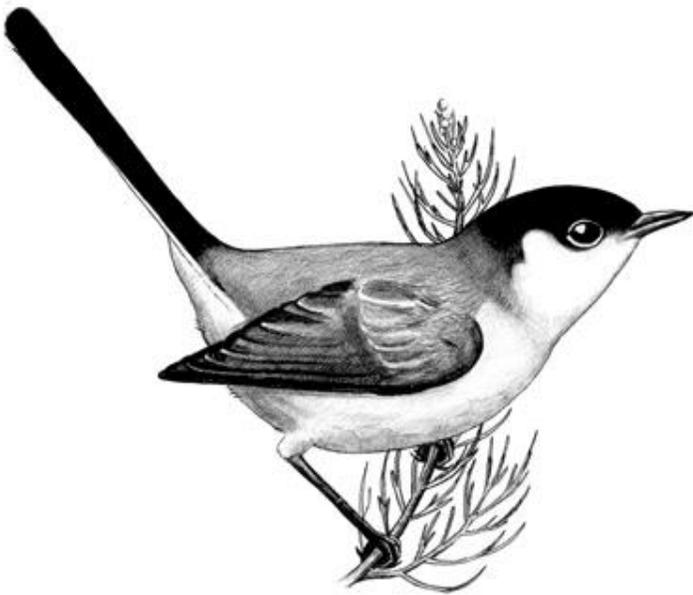
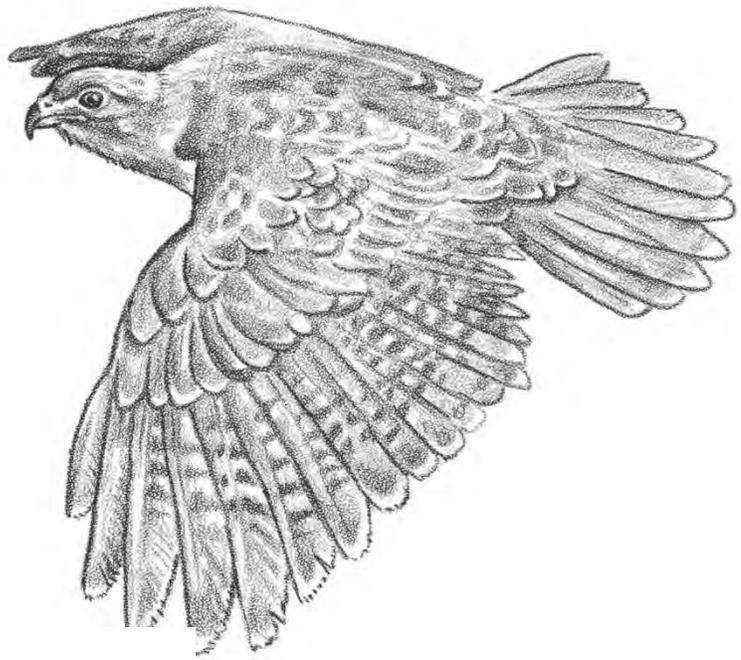
## Hummingbird

Hummingbirds have long, pointed bills for feeding on the nectar of flowers, but they will also eat some insects and spiders. Hummingbirds beat their wings very fast, about 90 times per second. This allows them to hover in front of a flower. Hummingbirds can also fly backwards and upside down, something very few other birds can do.



### **Red-tailed Hawk**

This hawk hunts for rodents, snakes, rabbits and insects while soaring high overhead. It builds a large nest two or three feet across, high in a tree or on a cliff face.



### **California Gnatcatcher**

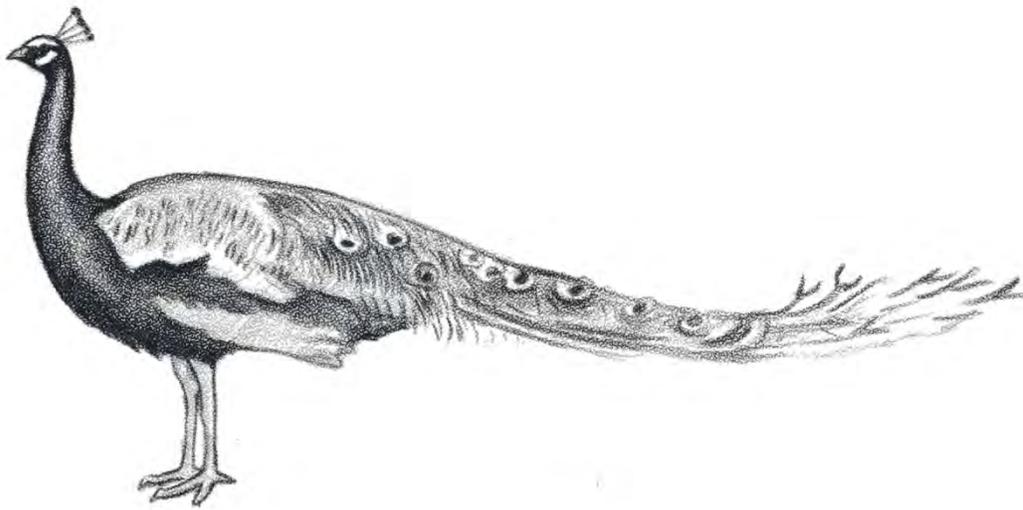
The California Gnatcatcher builds a nest deep in sagebrush to protect its tiny eggs. Both the parents work together to raise their young. Young gnatcatchers are ready to fly just 15 days after hatching! Like their parents, they have charcoal gray feathers to help them camouflage. Gnatcatchers only hunt in the **scrubland habitat**, where they catch insects with their tweezer-

like beaks. California Gnatcatchers are threatened with extinction because so much of their scrubland habitat has vanished. If you are visiting the scrubland, listen for their kitten-like calls!



### **Great Horned Owl**

The Great Horned Owl has large, forward-facing eyes for keen eyesight and very good hearing for hunting at night. It is the largest owl in North America. Owls mostly eat small mammals and birds, though sometimes they will even eat scorpions and skunks! Owls usually use nests that were made by other birds.



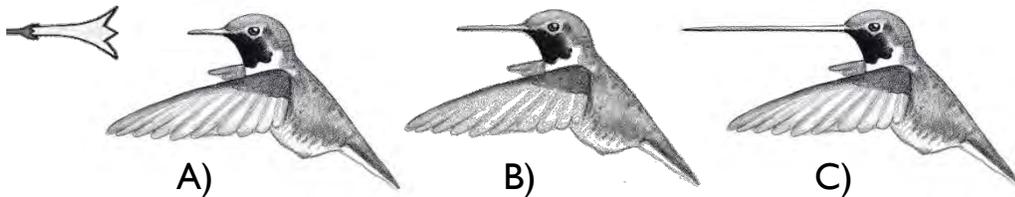
### **Peacock**

The male peacock grows a long, showy tail to impress the peahens. You may have seen their fancy tail feathers, which they drop each year. Peacocks were brought to the peninsula by people and now live in many neighborhoods in the area. They are originally from the forests in Asia.

# Birds Activity Page

1. How can traveling in a group (flock) help crows to survive?

2. Individual birds of the same species can have differences. Imagine a habitat where many flowers have nectar stored at the end of tubes that are the size shown in the picture below. Which of these hummingbirds do you think would have an advantage in surviving? Explain.



3. Draw a line to match each bird with the description of how it nests in its habitat.



- Sounds like a kitten and likes to build its nest in the sagebrush.
- Has large eyes and good hearing to hunt at night and uses nests made by other birds.
- Relies on finding cactus patches to build its nest and raise its young.
- Builds a large nest two or three feet across, high in a tree or on a cliff face.

# Reptiles

Reptiles are amazing animals and are an important part of the **ecosystem**. Reptiles have scales to protect their skin. Lizards and snakes are two types of reptiles found here on the peninsula. Occasionally, sea turtles are also seen swimming in the ocean nearby.

The only dangerously venomous reptiles found here are rattlesnakes. Rattlesnakes rarely bite humans, and when they do, it is only in self-defense. You should always keep a respectful distance when you see a snake. Rattlesnakes feel threatened when they are stepped on, teased or when someone gets too close to them. **When hiking, you can protect yourself by staying on the trail** so you can see where you are stepping. **Never disturb or harm a snake. Instead, watch from a safe distance and consider yourself lucky for the special wildlife encounter!**

## What you can do to help reptiles:

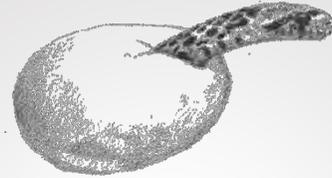
### At home

1. Never release pet reptiles into the wild; they can be harmful to wild reptiles.
2. Keep your pet cat indoors – cats hunt lizards and small snakes.
3. Create habitat for wild reptiles around your home. Lizards especially appreciate loose leaf litter, stacks of logs or rocks and other cover to hide or hunt around. Planting native plants can provide them with food by attracting other wildlife such as insects.

### In the Nature Preserves

1. Always stay on the trail. This helps both you and the habitat stay safe as you explore.
2. Never disturb, capture or harm wild reptiles. They are an important part of the habitat, and it is illegal to disturb them without a permit.
3. Be a citizen scientist, share your reptile observations at [iNaturalist.org](https://www.inaturalist.org).
4. Help us restore habitat – join our volunteer team!

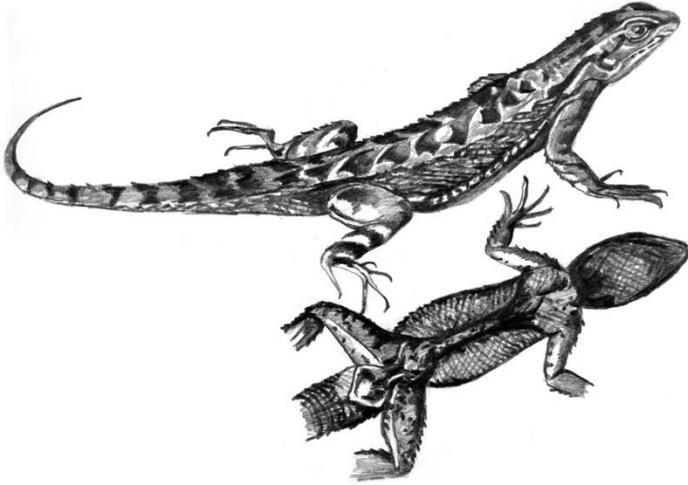
### Life Cycles for Survival



Most reptiles are **oviparous**, which means that they lay eggs during their **life cycle**. Unlike the hard eggs of birds, most reptile eggs have soft, leathery shells. Some reptiles do not lay eggs at all. The eggs of **ovoviviparous** reptiles hatch inside the mother's body, and the young are born ready to crawl or slither away. *How might this help them to survive?*

## LIZARDS

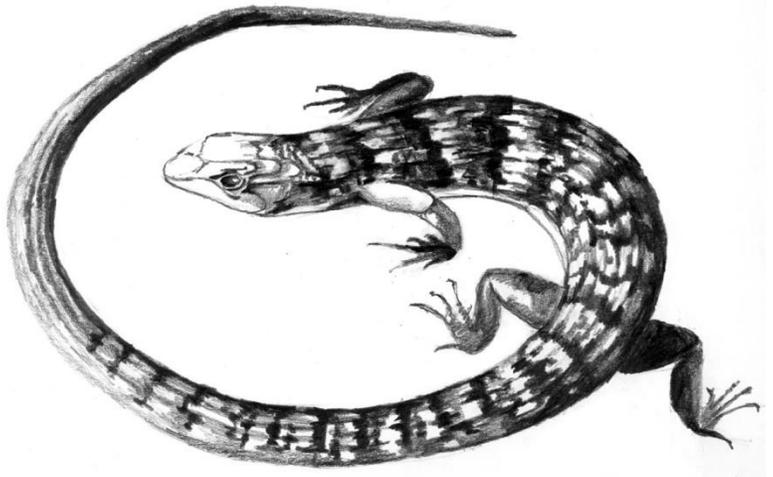
### Western Fence Lizard



Most of the lizards you see will be Fence Lizards, the most common lizard in this area. This lizard has a gray body with blue patches on the throat and belly. It has good eyesight, which helps it catch the insects and spiders it eats. You may sometimes see it doing “push ups” to warn others away from its territory. If caught by the tail, the tail detaches so the lizard can escape. Fence Lizards lay eggs.

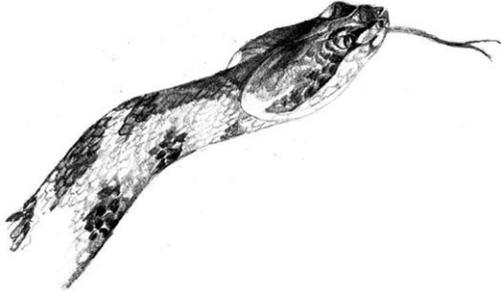
### Alligator Lizard

Occasionally, you may see the larger Alligator Lizard. You will know this lizard by the snakelike way it moves. Even though it has legs, its body wiggles back and forth like a snake as it runs. This lizard also can detach its tail if caught. Alligator lizards lay eggs.



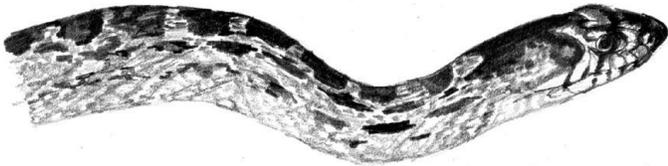
## SNAKES

### Rattlesnake (Southern Pacific)



It is nice that our only dangerously venomous snake comes with an alarm system. You will recognize the Rattlesnake by its triangular head, narrow neck and, of course, the rattles on its tail. As the Rattlesnake grows, it sheds its skin and adds another rattle to its tail. This can happen multiple times a year. Rattlesnakes are **ovoviviparous**, which means that they produce eggs that hatch inside the mother's body, and then the young are born ready to defend themselves with venom. Rattlesnakes are good mothers and care for their young for the first couple of weeks after they are born.

### Gopher Snake (San Diego)



The Gopher Snake has the same coloring as the rattlesnake – brown with darker blotches. It will sometimes even imitate a rattlesnake by coiling and vibrating its tail. Unlike the Rattlesnake, the Gopher Snake lays eggs. The Gopher Snake grows three to four feet long, with a rounded head and pointed tail. It eats rodents, birds and lizards. All of the snakes we have talked about play an important part in keeping the number of rodents under control.

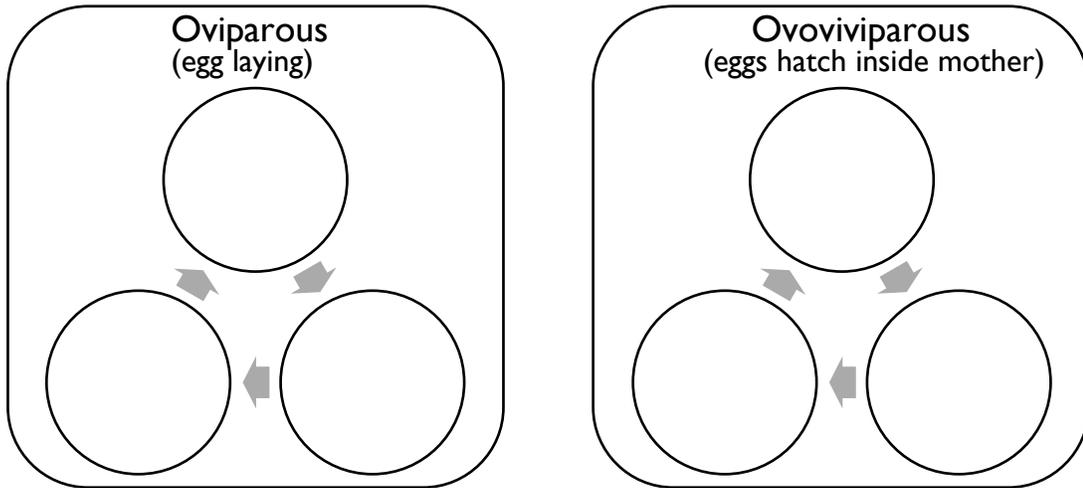
### King Snake (California)



The King Snake's body has alternating rings of dark (brown or black) and light (yellow or white) color. It grows two to three feet long, with a rounded head and pointed tail. The King Snake eats rodents, lizards, birds and other snakes, including Rattlesnakes. The venom of the rattlesnake does not affect the King Snake. King Snakes lay eggs.

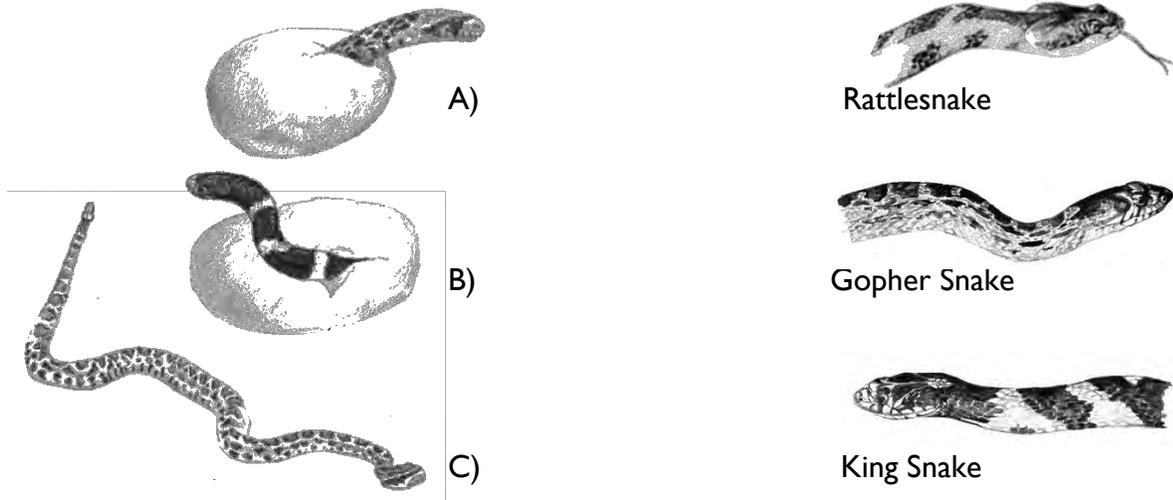
# Reptiles Activity Page

1. Draw a diagram showing 3 stages of each type of life cycle below.



2. How might having an ovoviviparous life cycle help young Rattlesnakes to survive?

3. Young reptiles have many characteristics similar to their parents. Use these similarities to match these young snakes with their parents.



4. What can you do as a Naturalist to help protect reptiles?

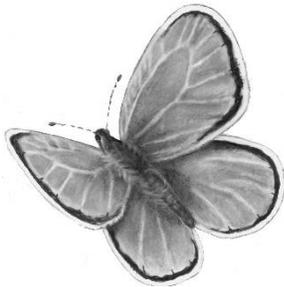


# Insects



Insects are animals with six legs and an exoskeleton covering their three-part body. The world has more than a million kinds of insects, and there are many fascinating insects that live in our area. In fact, one of the rarest butterflies in the world lives right here on the peninsula!

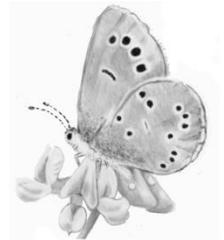
## Palos Verdes Blue Butterfly



Although you may have seen other blue butterflies, the Palos Verdes blue butterfly is one you probably have not seen. It only lives on the Palos Verdes Peninsula and, from 1983 until 1994, no one could find this butterfly here. Scientists thought that it had gone **extinct**. Fortunately, in 1994, a few of these butterflies were spotted again by scientists who started an effort to save this **endangered**

**species.**

The Palos Verdes Blue Caterpillar only eats two kinds of native plants, rattlepod and deerweed. There is not as much rattlepod or deerweed growing here as there used to be, so it is difficult for the mother butterfly to find the plants that she needs to lay her eggs on.



After hatching from the egg, the caterpillars grow strong eating the plants. Next, the caterpillar searches for a safe place to hide in the ground to make a chrysalis. It will stay protected inside its chrysalis through the dry season, only emerging as a butterfly after the rain causes the plants to grow again.

If the Palos Verdes blue butterfly does not have the habitat that it needs to survive, then it will go extinct. PVPLC works hard to grow these plants and restore the habitat so this butterfly can survive.

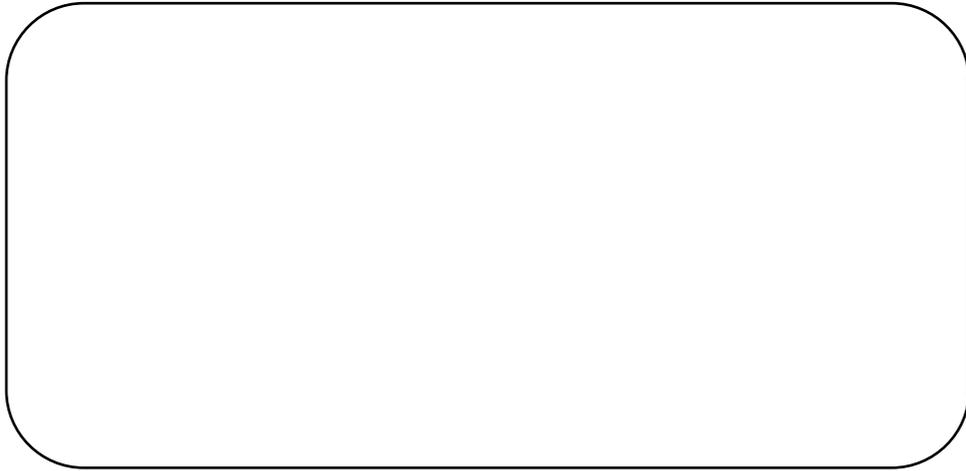
**Chrysalis** – The shell that a caterpillar makes for protection while it changes into a butterfly.

**Endangered Species** – A species that is threatened with extinction.

**Extinct** - No longer found on Earth today.

# Insects Activity Page

1. Use what you learned about the Palos Verdes Blue Butterfly on Page 30 to draw a diagram of its life cycle.



2. The Palos Verdes Blue Butterfly stays hidden in the ground for most of the year in a chrysalis. How might this help it to survive in its habitat?
  
  
  
  
  
  
  
  
  
  
3. How can we restore the habitat so that the Palos Verdes Blue Butterfly is better able to survive?

## What you can do to help insects:

### At home

4. Avoid using poisons like insecticides, which can be harmful to many types of insects.
5. Create habitat for insects around your home. Grow native plants, which provide food and shelter for insects.

### In the Nature Preserves

5. Always stay on the trail so you do not harm the habitat that insects depend on.
6. Be a citizen scientist, share your insect observations at [iNaturalist.org](https://www.inaturalist.org).
7. Help us restore habitat – join our volunteer team!

# Plants



**We all rely on plants for survival.** Plants give us oxygen to breathe, the food we eat and are critical to a healthy environment. **Native plants** play a key role in our local habitats. The animals that live here have adapted to the food and shelter that they provide. We are lucky that so many unique and amazing plants grow here on the Peninsula. Many of these plants are rare and only grow in this part of the world!

Many plants are best able to survive in certain habitats. Plants of the **scrubland habitat**, like sages and sagebrush, can grow on the steepest, driest hillsides here on the peninsula. The native bunchgrasses of the **grassland habitat** have deep roots that help them find water. Larger trees on the peninsula are only able to grow naturally in **streamside woodland** and **wetland habitats** where they are able to find enough water to grow tall. Only a few plants are able to grow in the salty water of the **ocean habitat**. Instead, algae play a similar role in the ocean.

Over time, there have been many changes to the environment here that have impacted our local plants. Much of the area where plants once grew has now been developed. People have also brought many **invasive plants** from other parts of the world. These plants compete with our **native plants** and make it difficult for them to survive. Some of our **native plants** are now extremely rare.

## Variation in Traits



Why do these toyons look so different? Some plants can survive in different habitats but might look different depending on the amount of water they receive. A toyon growing in dry scrubland habitat might only be a small bush. A toyon growing in a wet streamside woodland habitat can become a very tall tree.

**Could this be evidence that a plant's traits can be influenced by the environment? How could you test this with an experiment?**

The Land Conservancy is working hard to bring back our beautiful native plants. To do this, we study each plant's **life cycle** to learn what they need to be able to grow. We collect seeds from plants in the nature preserves and grow them in our nursery. We then plant the young seedlings into areas of the nature preserves where the native plants had been lost. It takes a lot of time and care to help these special plants thrive once again in their home here on the peninsula.

### Plants and Weather-Related Hazards

One common **weather-related hazard** here in Southern California is **drought**. Since we normally don't see much rain in summer or fall, our local plants are already adapted to conserve water through these dry months. Some of our plants have fuzzy or waxy leaves to help them trap water. Other plants grow smaller leaves or drop their leaves completely during dry times. Cactus plants store water in their stems, which they defend with sharp spines.

**We can use our local plants to help us reduce the impacts of drought on our area.** Many of the plants that we plant around our homes and schools come from different parts of the world with damper climates. We have to water these plants a lot because they can't survive on our small amount of winter rain. By planting local plants instead, we can conserve water and be better prepared for times of drought.

## What you can do to help plants

### At home

1. Plant native plants around your home or neighborhood. This will give them a place to live and provide habitat for other wildlife! Check [www.pvplc.org](http://www.pvplc.org) to see when there is a native plant sale near you!
2. Be careful not to grow invasive plants from other parts of the world that can spread into protected areas.

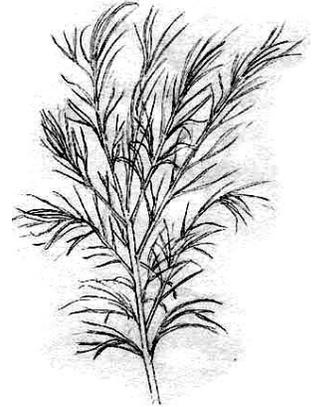
### In the Nature Preserves

1. Always stay on the trail to help keep both you and the plants safe as you explore.
2. Never pick flowers; they are a plant's way of making seeds!
3. Be a citizen scientist; share your plant observations at [iNaturalist.org](http://iNaturalist.org).
4. Help us plant and care for our native plants – join our volunteer team!

## Native Plants of the Scrubland Habitat

Here are a few of the cool plants that grow in scrubland habitat!

<sup>1</sup> **Sagebrush** has a wonderful smell and has been used by many cultures over time as a medicine and deodorant. One nickname for sagebrush is “cowboy cologne,” because the smell of the soft, grayish leaves rubs off on passersby. The California gnatcatcher, an endangered bird, makes its nest in the branches of the sagebrush plant.



<sup>2</sup> **Purple Sage** and <sup>3</sup> **Black Sage** also have a wonderful smell and are sometimes used in <sup>3</sup> cooking. Bees, butterflies and hummingbirds love to drink nectar from the flowers. Birds enjoy eating the seeds. Purple sage has grayish leaves, and black sage has darker green leaves.

<sup>4</sup> The **Lemonade Berry**, named for its sour fruit, stays green year-round. Its small, pink flowers turn into orange-red berries with a sticky, sour coating, which Native Americans used to make a refreshing summertime lemonade-like drink.



<sup>5</sup> **Prickly Pear Cactus** is covered with sharp spines. The flowers are yellow, and the fruit is red. Both the pads and fruit are edible (once you remove all the spines). Cactus wrens build their nests in the prickly pear cactus. Can you think why they would do this?



\_\_\_\_\_ <sup>6</sup> The **California Bush Sunflower** is named for its lovely yellow flowers, which provide an important feast for wildlife. Butterflies sip the nectar, and birds love the sunflower seeds. This plant can also be used as a rain gauge. It appears brown and dead during the dry months but springs back to life as soon as there is rain!



\_\_\_\_\_ <sup>7</sup> **Wild Cucumber**, also called Manroot, is a vine that grows from a root so big it can weigh as much as a person! Though it is related to the cucumbers we eat, the wild cucumber is definitely not edible. The seeds are poisonous and have been used to catch fish by stunning them. You may recognize the seedpod, which looks like a green tennis ball covered with spikes!

\_\_\_\_\_ <sup>8</sup> **Toyon** has bright red berries in the wintertime. It is sometimes called Christmas Berry or California Holly. Some say that Hollywood was named for this plant since it grows all over the Hollywood hills. The berries provide an important source of food for wildlife but must be cooked to be eaten by people.



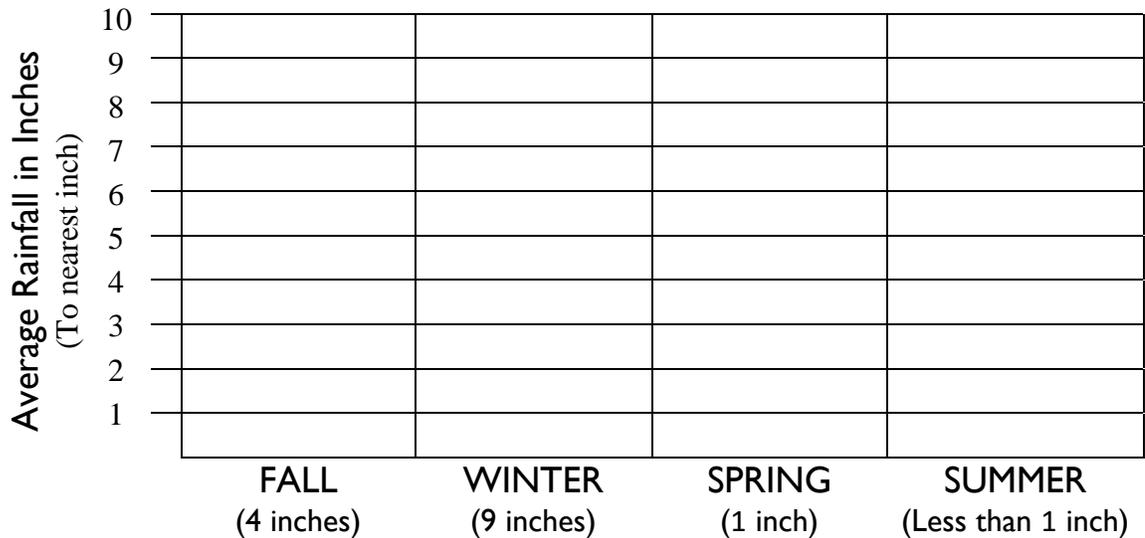
## What do all plants and animals rely on for survival?

\_\_\_\_\_

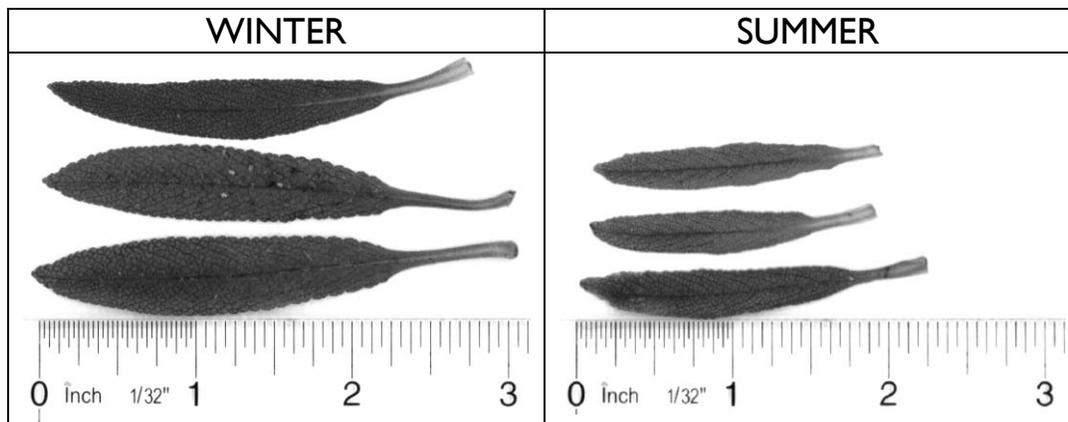
1                      2                      3                      4                      5                      6                      7                      8

# Plants Activity Page

1. The plants that grow here are plants that can survive in habitats where there is very little rain. Fill in the bar graph below to show how much rain typically falls here in each season.



2. The leaves pictured below were collected from the same kind of plant during different seasons. Use evidence from the graph above to write one possible explanation of how the environment might influence the plant's growth.



3. What type of leaves are pictured above. Hint: The leaves have a strong smell and are dark green. The flowers are loved by bees, butterflies and hummingbirds. (Circle one)

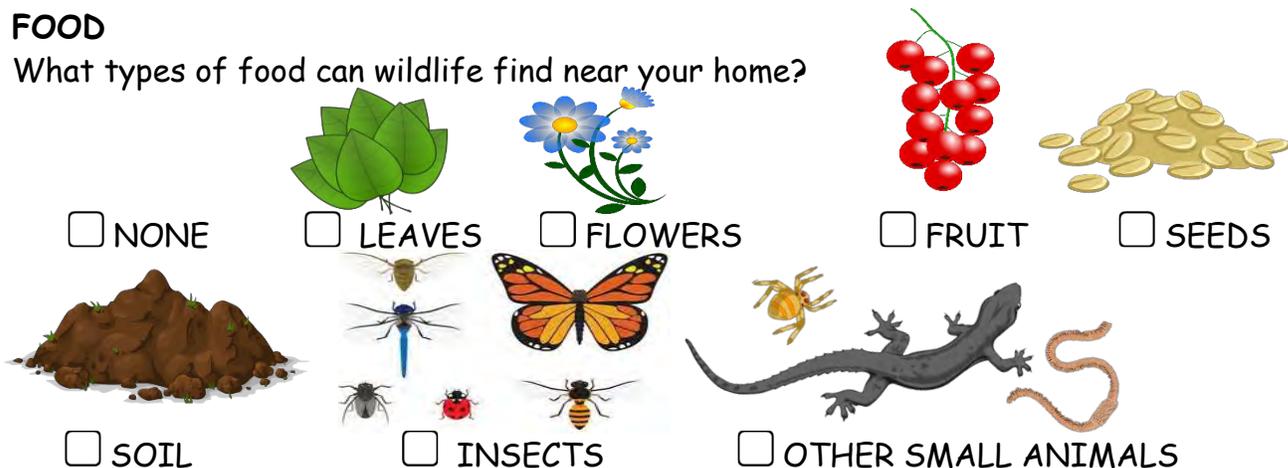
Black Sage   Wild Cucumber   Lemonade Berry   Prickly Pear Cactus

## HABITAT SURVEY

PVPLC works hard monitoring the habitat in our local nature preserves. You can do the same at home! This habitat survey can be completed during an adventure into your yard, while looking out a window or by exploring inside your house. Record what you see by checking the boxes below. Remember scientists, recording what you don't see is also valuable information!

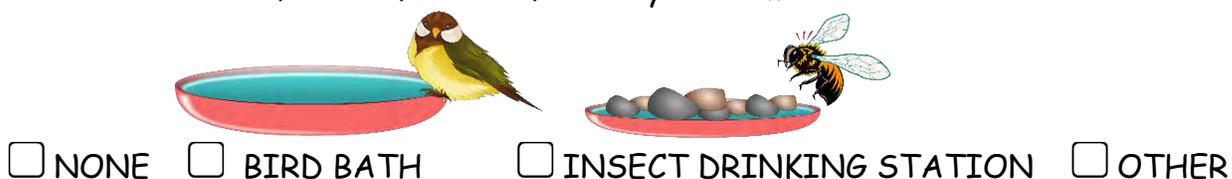
### FOOD

What types of food can wildlife find near your home?



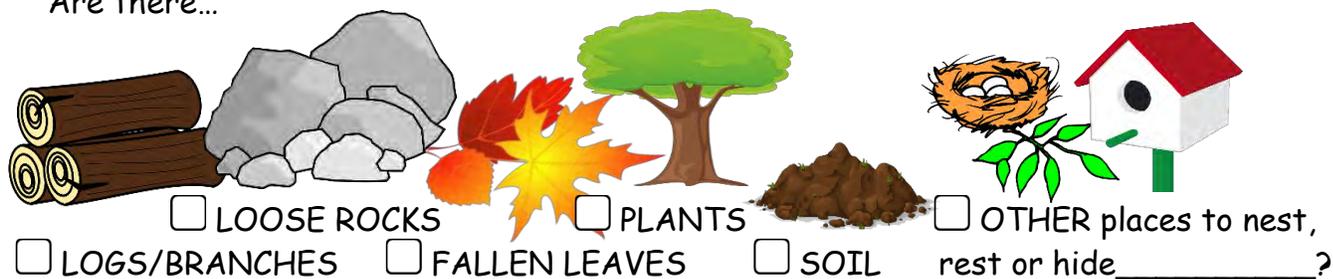
### WATER

Is there a source of water for wildlife near your home?



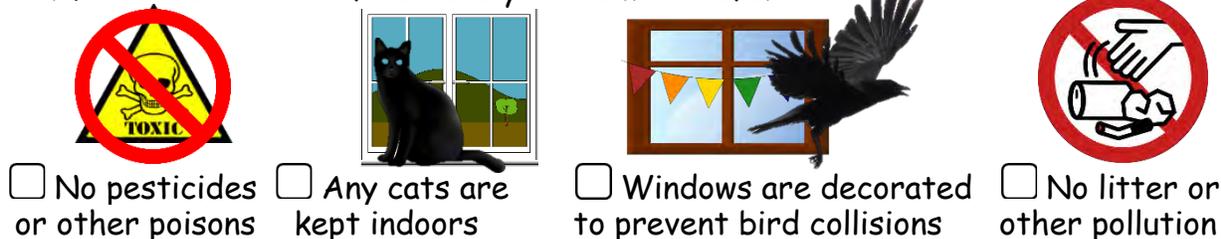
### SHELTER

Are there...



### SAFETY

Make sure the wildlife around your home is safe.



**NEXT STEP - Learn what you can do around your home to improve the habitat for wildlife!**



## WILDLIFE SURVEY

This wildlife survey can be completed during an adventure into your yard, while looking out a window or by exploring inside your house. Record what you see by checking the boxes below. Remember scientists, recording what you don't see is also valuable information!

### PLANTS

What type of plants can you see?

NONE



GRASS



FLOWERS



SHRUBS



TREES

### BIRDS

Are there birds in near your home? See if you can...



hear birds singing



see birds



find other evidence of birds

If so, how many? \_\_\_\_\_

No, I can't find evidence that there are birds near my home.

### MAMMALS

Check any mammals you have seen near your house before:

SQUIRREL  RACCOON  OPOSSUM  FOX  COYOTE  SKUNK

GOPHER

### REPTILES

Do you see any...



SNAKES



LIZARDS

NO, I don't see any snakes or lizards.

### INVERTEBRATES

What types of invertebrates can you find?



SLUGS/SNAILS



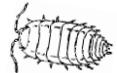
INSECTS (6 legs)



SPIDERS (8 legs)



WORMS



OTHER \_\_\_\_\_

# Stay Involved!

Graduating from the Student Naturalist Program is just the beginning. Now that you are an official Student Naturalist there are many opportunities for you to get involved in protecting nature in your community. Every month the Conservancy holds nature walks, volunteer events and other activities that you and your family are invited to join. Check out our website to see all the exciting ways you can stay involved.

[WWW.PVPLC.ORG](http://WWW.PVPLC.ORG)

## Come pick up your official Student Naturalist Patch!

As a graduate of the Student Naturalist Program you have earned your official Student Naturalist Patch. Come by either of our nature centers during open hours to claim your free patch. Show the staff at the nature center the coupon below, or just let them know which school you are from and they will present you with your patch!

### COUPON - Free Student Naturalist Patch

Pick your Naturalist Patch up any time during open hours at either of the 2 nature centers listed below. Just show the staff this page in your book or let them know that you are a graduate of the program!

#### White Point Nature Center

White Point Nature Center is located at 1600 W. Paseo del Mar, San Pedro, CA 90731 on the north side of Paseo del Mar off of Western Avenue. The Nature Center is open from 10am-3:30pm on Saturday and Sunday.  
310-561-0917



#### George F Canyon Nature Center

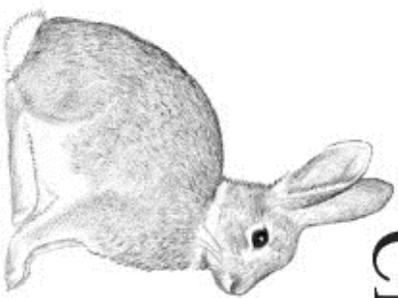
George F Canyon is located at 27305 Palos Verdes Drive East, Rolling Hills Estates CA 90274 at the southwest corner of Palos Verdes Drive East and Palos Verdes Drive North. The Nature Center is open 1pm-4pm on Fri, and 10am-3:30pm Sat and Sun.  
310-547-0862





PALOS VERDES PENINSULA LAND CONSERVANCY  
**CERTIFICATE of ACHIEVEMENT**

THIS ACKNOWLEDGES THAT



HAS SUCCESSFULLY COMPLETED THE

**STUDENT NATURALIST PROGRAM**



*Holly Gray*

SIGNED, *Holly Gray*, Education Program Manager

~ For more information visit [www.pvplc.org](http://www.pvplc.org) ~

