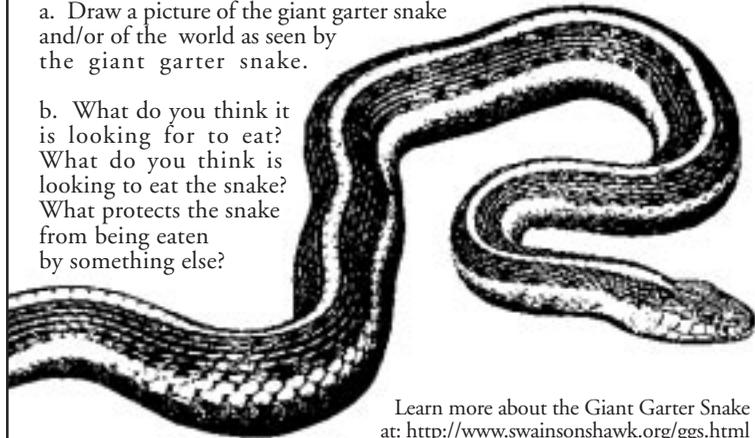


## DRAW A GIANT GARTER SNAKE

The giant garter snake is a shy, non-venomous snake about five feet long. Non-venomous means its bite is not poisonous. It lives in the ditches, canals and rice fields in Sacramento County. The giant garter snake does not hear. Instead, it feels vibrations in the ground. It also smells with its tongue.

a. Draw a picture of the giant garter snake and/or of the world as seen by the giant garter snake.

b. What do you think it is looking for to eat? What do you think is looking to eat the snake? What protects the snake from being eaten by something else?



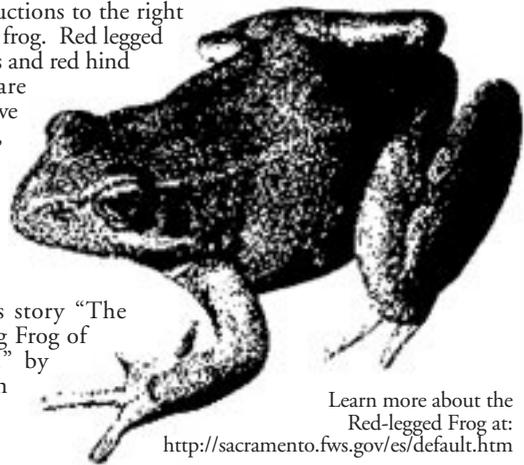
Learn more about the Giant Garter Snake at: <http://www.swainsonshawk.org/ggs.html>

## AN INTRODUCTION TO THE RED-LEGGED FROG

The endangered red legged frog once lived in the Sacramento Valley, but no more. In the 1800s, people ate red legged frogs, and they became rare. Bullfrogs were brought to California in 1896 and by 1960, they had replaced all the red legged frogs in our area. Many wetlands that could have been home for red legged frogs had been destroyed for agriculture. There are a few red legged frogs left in a few select places in California.

a. Follow the instructions to the right to create an origami frog. Red legged frogs have red bellies and red hind legs. Their backs are often brown, gray, olive or reddish brown, with small black flecks and larger dark blotches.

b. You can read about the red legged frog in the famous story "The Celebrated Jumping Frog of Calaveras County," by Mark Twain, written in 1865.

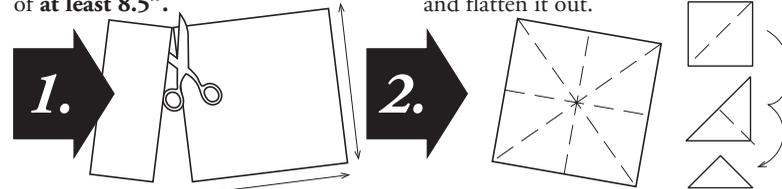


Learn more about the Red-legged Frog at: <http://sacramento.fws.gov/es/default.htm>

## MAKE YOUR OWN ORIGAMI RED-LEGGED FROG!

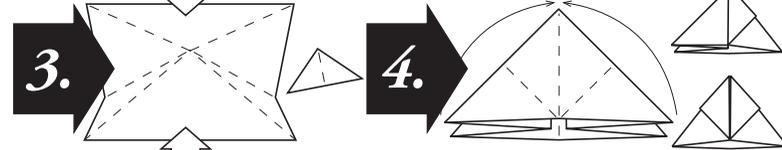
You'll need **square** paper with an edge of **at least 8.5"**.

Fold your paper in half **three** times and flatten it out.



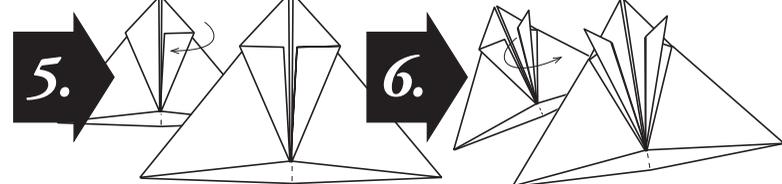
Fold like the picture below to make a flat **triangle**.

Fold the **bottom** corners to meet the at the **top**.



Fold the flaps on both sides to line up with the **center**.

Fold both flaps in half again towards the **outside** of your triangle.



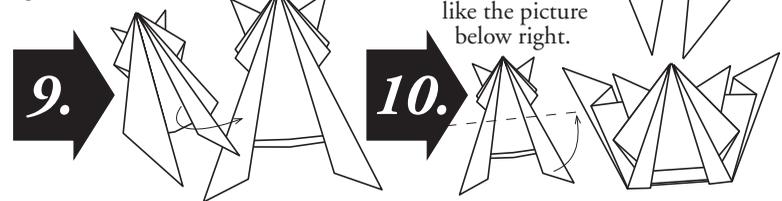
Turn your triangle around so the **back** is facing you like this.

Fold the **left** and **right** halves of the triangle inwards to meet in the middle.



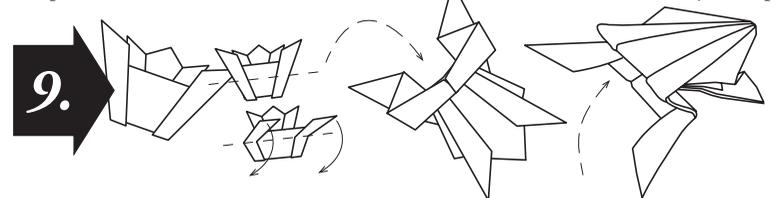
Fold the **left** and **right** flaps in half again outwards.

Fold in **half** to look like the picture below right.



Turn over your frog (it should look like the picture below) and fold over.

Now you're done! Your frog should look like this — all ready to hop.



## SANDHILL CRANE & SWAINSON'S HAWK

Sandhill Cranes and Swainson's Hawks sometimes share the same space, but not at the same time. Each September, Swainson's Hawks leave the Sacramento Valley and fly south for the winter. At the same time, Sandhill Cranes leave their nesting territories and many fly south into this region. The Cosumnes River Preserve protects habitat for them both.

a. Compare migration routes. Locate the positions (longitude and latitude) on a map or globe for the three locations in the table below. What is the closest city to each of these geographic locations?

	Hawk Nesting Location	Hawk Wintering Location
Longitude	122.5	105.25
Latitude	38	21.5
Closest City?	_____	_____

	Crane Nesting Location	Crane Wintering Location
Longitude	121	122.5
Latitude	40	38
Closest City?	_____	_____

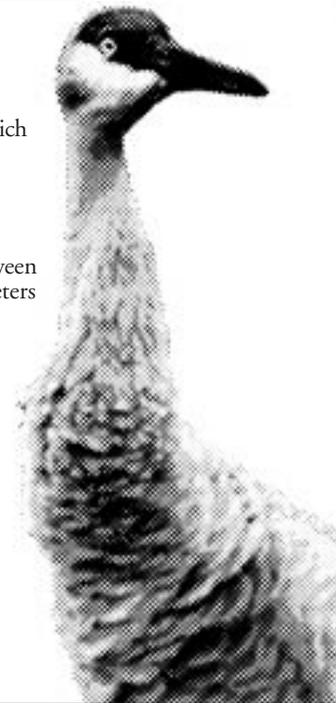
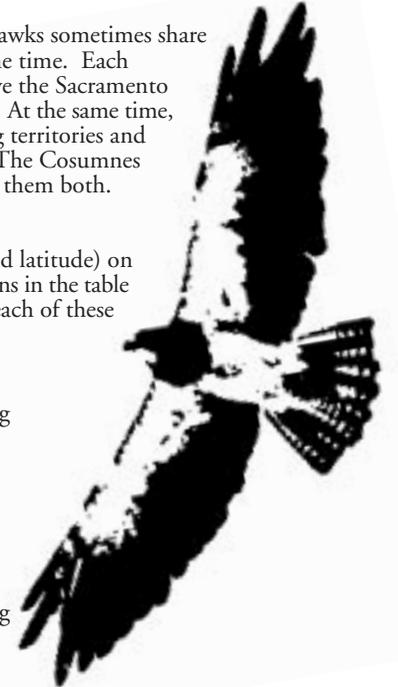
b. How many degrees of longitude and latitude combined does each bird fly? Which bird flies further in this migration?

c. About how many miles are there between these locations? About how many kilometers are there between these locations?

d. Draw your own map showing these two migration routes. Mark and write the names of the places along the migration route that you think are most interesting on your map.

Learn more about the Swainson's Hawk at: <http://www.swainsonshawk.org/who.html>

Learn more about the Sandhill Crane at: <http://www.dfg.ca.gov/hcpb/species>



## VIDEO QUIZ

After you've watched the video that accompanies this work sheet, answer the following questions and see how well you do.

1. The 70 species of plants that occur in California's vernal pools  
a. include trees and bushes  
b. occur nowhere else in the world  
c. can be found all over the world  
d. can be grown in your yard
2. Which of the following are endangered species in our area?  
a. Deer  
b. Bears  
c. Giant Garter snakes  
d. All of the above
3. In the video, what does "take" mean when talking about endangered species?  
a. To take a wild animal home  
b. To kill an endangered animal or destroy its habitat  
c. To take food to an endangered animal  
d. To take pictures of an endangered animal
4. Where can you see wildlife?  
a. Wildlife refuge  
b. Pet stores  
c. Circus  
d. None of the above
5. What can people do to help wildlife in our region?  
a. Decorate with wildlife pictures  
b. Buy clothes with wildlife designs  
c. Watch wildlife TV programs  
d. Volunteer at a nature preserve
6. Open land can  
a. provide homes for wildlife  
b. cool our region in the summer  
c. prevent flooding of cities  
d. all of the above

## WRITE A LETTER TO THE EDITOR

Responsible citizens participate in decisions made by government and speak their views on public issues. Voting is one way to participate. Another way is to write a letter to the editor of your local newspaper. In this activity, you write to the **Sacramento Bee** about wildlife in our region.

The **Sacramento Bee** invites letters and publishes about one-third of the letters it receives. To have a letter considered for publication you must include your:

- Real Name
- Postal Address
- Daytime phone number

Address your letter "Dear Editor". Make the letter no more than 200 words long. Make it timely, if you can, by writing about some recent event or **Bee** story about wildlife. Express your own views about wildlife protection in our region.

Mail or email the letter to:  
Letters to the Editor  
P.O.Box 15779  
Sacramento, CA 95852

E-mail: [opinion@sacbee.com](mailto:opinion@sacbee.com)

You can review the **Bee's** Tips and Tricks for getting a letter published in **The Bee** at [www.sacbee.com/static/live/opinion/tips.html](http://www.sacbee.com/static/live/opinion/tips.html). Or you can phone with any questions: (916)-321-1903

## ABOUT THIS ACTIVITY SHEET

This activity sheet is intended to be used by students after watching the endangered species education video for the Sacramento Region, entitled "America the Beautiful." It is designed to be photocopied for each student. Further copies of the worksheet can be downloaded in PDF format from: [www.swainsonshawk.org](http://www.swainsonshawk.org). The activities provide a variety of ways to engage in further study of wildlife in our region with regard to the following subjects:



### MATH / GEOGRAPHY

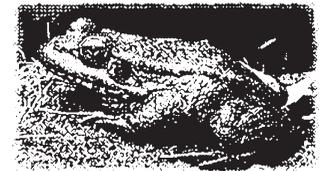
Students investigate the migratory patterns of the Swainson's Hawk and the Sandhill Crane.

### ART / DESIGN

An introduction to the Red-legged Frog and the Giant Garter Snake with accompanying origami and drawing projects.

### ENGLISH / SOCIAL STUDIES

An invitation for students to write a letter to the Editor of the Sacramento Bee about wildlife in our region.

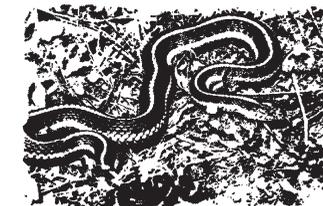


### BIOLOGY / CREATIVE WRITING

An introduction to the Tadpole shrimp and the Vernal Pool Fairy shrimp.

This activity sheet also includes a quiz with multiple choice answers that relate to the video. For correct answers, e-mail [contact@swainsonshawk.org](mailto:contact@swainsonshawk.org) or visit [www.swainsonshawk.org](http://www.swainsonshawk.org).

Web links are also provided for further study.



**FOSH/Sierra Club Endangered Species Education**  
817 14th Street, Suite 100, Sacramento, CA 95814

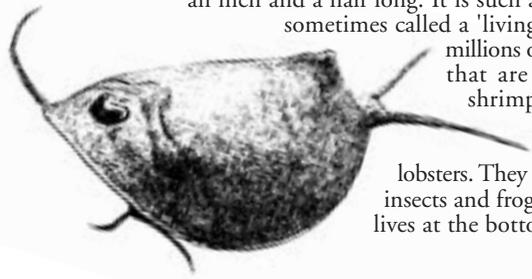
916-447-4956 - phone  
[www.swainsonshawk.org](http://www.swainsonshawk.org)  
[www.motherlode.sierraclub.org](http://www.motherlode.sierraclub.org)



## THE TADPOLE SHRIMP & THE CONSERVANCY FAIRY SHRIMP — OUR REGION'S LIVING FOSSILS!

Vernal (or spring) pools are a rich habitat for our region's wildlife. Pools form in wet weather but are dry for most of the year. A lot of animals — such as frogs, insects and wading birds — depend on them as places to feed, live and breed. But the pools are threatened as the human population of the Sacramento region expands into undeveloped areas. Two species in our region are the Tadpole Shrimp (*Lepidurus packardii*) and the Vernal Pool Fairy Shrimp (*Branchinecta lynchi*). Both species are classified as threatened because they cannot live outside of vernal pools — many of which have been paved over or plowed under.

The **Tadpole shrimp** gets its name because it has long tail filaments that make it look a little like a tadpole. It is grey/green in color and can grow up to an inch and a half long. It is such an ancient species that it is sometimes called a 'living fossil'. Fossils from many millions of years ago have been found that are identical to the Tadpole shrimps alive today. Shrimps are crustaceans whose relatives include crabs, crayfish and lobsters. They eat algae, bacteria, protozoa, insects and frog eggs. The Tadpole Shrimp lives at the bottom of vernal pools, but the



smaller **Fairy Shrimp** prefers to swim on its back near to the surface. That can make it an easy lunch for wading birds and frogs. If Fairy shrimps ever stop moving, they sink! Because they were around a long time before fish ever appeared, these species never evolved ways of protecting themselves against predation by fish and, so, can only survive in the temporary pools where fish can't live.

They lay special eggs that are able to survive the dry months and hatch when the pool forms again — they can last up to 20 years without water and still hatch! The eggs are protected by a tough outer coating that stops the baby shrimp from drying out and, also, means the eggs can't be digested by predators. Sometimes the eggs get stuck to wading birds' legs and can be carried to other ponds to hatch. This way, the shrimp population can spread to new pools.

Would you want to be a friendly Fairy Shrimp swimming around on your back all day? Or would you be a scary tadpole shrimp hiding out at the bottom of the pool waiting to pounce? It's springtime in the vernal pool — write a short story describing a day in your life.

Visit vernal pools locally at Mather Regional Park or go to: [www.sacsplash.org](http://www.sacsplash.org)

