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A COOPERATIVE PROJECT OF THE SANTA BARBARA NEWS-PRESS AND THE EDUCATORS' ROUNDTABLE, PUBLISHED MONTHLY TO PROMOTE LEARNING AMONG YOUNG READERS IN NATURAL SCIENCE, HISTORY, TECHNOLOGY, AND ART

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This Month's Theme: Rare, Threatened, and Endangered Species

Why Have The Numbers Become So Low?

Some species of plants and animals have declined due to the effects of urban development, and others have suffered due to the impact of agriculture. Water and air pollution, and the introduction of invasive species of animals and plants have also had far-reaching effects. Climate change would most likely affect the numbers and distribution of species, because with changes in global temperature and moisture patterns, areas of suitable habitat for particular species could decrease, increase, or shift in location.



"Encroachment" by Katherine R. Beck

Why Are Some Species Rare?

Some species are rare, because they have always been rare. These include special plants and animals that have a very small area of habitat and have always been present in small numbers. A number of species of plants and animals live only on one or more of our California Channel Islands. The island fox and the island barberry are examples of very rare species that are restricted to our islands. Some rare plants and animals live only around vernal pools. These are special pools that fill with water in winter and spring. In summer, the water evaporates and the pools dry up. Other rare plants grow only in a certain type of soil. For example, soils formed from Serpentine rocks are toxic to many plants, but some rare plants are specially adapted to growing on them. If numbers of individuals of species are low to begin with, these species are especially vulnerable to changes in the environment and are in danger of becoming extinct.



Island Barberry

Ursus arctos horribilis, the grizzly bear, a sub-species of the brown bear, is an example of a species that is now extinct in California. This large mammal was once common here and was wiped out by hunting. Grizzlies are still found in other states, including Alaska.



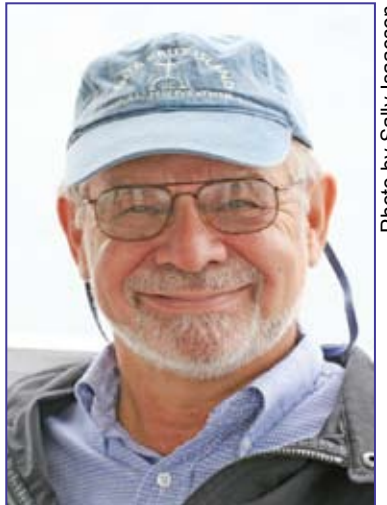
Grizzly Bears in Alaska

Is There Any Help?

Plant breeding and re-introduction programs and captive animal breeding programs are important in efforts to safeguard endangered species. Captive breeding programs for animals like the California condor, the island fox, and the black-footed ferret are well known. You may have learned about efforts to re-establish bald eagles on our offshore islands, and you might even have watched chicks in a bald eagle nest on Santa Cruz Island via a web cam.

Loss of plant species is very dangerous for ecosystems as plants form the base for food chains. Plants also provide shelter and nesting materials for animals and are sources of human foods and medicines. For every plant species that becomes extinct, an ecosystem is disrupted. We also risk forever losing unknown potential drugs and other resource materials.

The Center for Plant Conservation (CPC) has formed a network of botanical institutions across the nation in order to protect rare native plants. Botanists like Dr. Dieter Wilken at the Santa Barbara Botanic Garden are involved in efforts to save rare plant species of California's central coast area. We are proud of Dieter as he recently received the Star Award from CPC for his important work in plant conservation.



Dr. Dieter Wilken

Capturing Endangered Species with Art

Many wildlife artists face a difficult task when they want to paint, photograph, draw, or somehow capture the image of an endangered species. All endangered or threatened species are protected by law, which means you cannot harm them or remove them from their environment. Many endangered plants (flora) and animals (fauna) are so rare, they can only be found in zoos, wildlife refuges, or botanical gardens. To capture an endangered or threatened species with art, an artist must first do a lot of research to find where the species lives. Then the artist must be patient and observant, spending many hours trying to sketch their subject before it wanders off or the sun goes down and they lose the light.

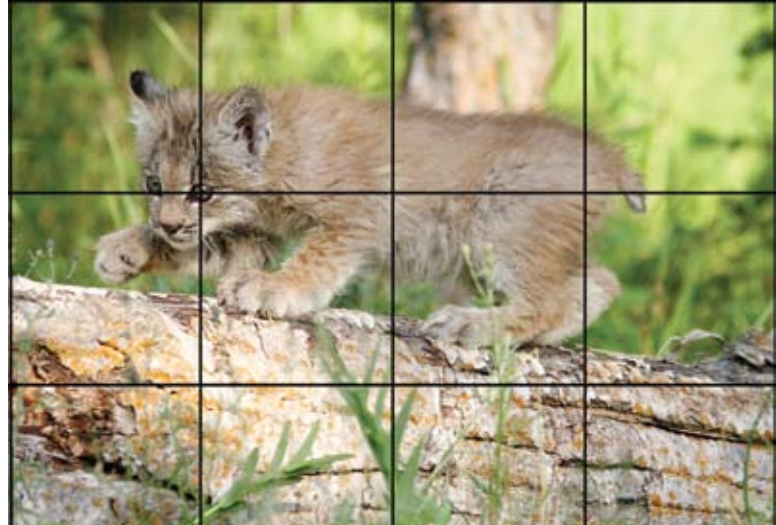
Many artists use photography to capture their subject in film, later to be used as a reference in their studios. Botanical artists long ago used to pull plants up, roots and all, and take them back to their studio to draw and sketch. Modern artists are not able to do this with endangered or threatened species, so to depict the roots, they must use historic specimens (plants that were dug up and preserved or drawn a long time ago.)

You can see artwork depicting endangered or threatened species at the Wildling Art Museum in Los Olivos. The exhibition, "Endangered Species: Flora and Fauna in Peril" runs through September 14th and has 50 examples of animals and plants depicted in many different media, including scratchboard, paintings, sculpture, watercolor, and photography.

Drawing Activity: Endangered Species

Many artists use photographs as references when sketching animals. For beginners, a good way to start is to lay a "grid" of horizontal and vertical lines on top of the photograph. Next, transfer the "grid" to a blank piece of paper. By drawing the outlines of what you see in each square of the grid on the photograph into each similar square on your paper, you can get a good sketch of your animal.

Try sketching the Canada lynx kitten into the grid below it. The first square is done to get you started. Once you finish the outlines, you can color and finish your artwork.



Canada Lynx Kitten

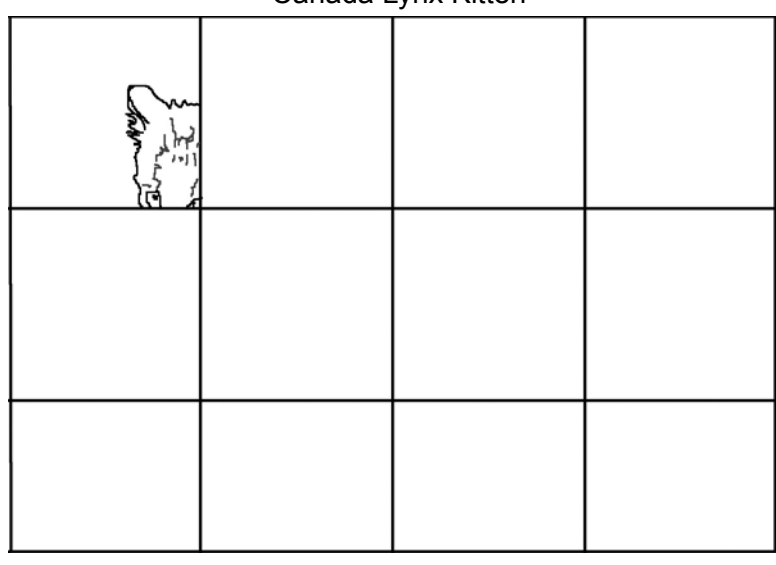



Photo by Janet Collins

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 **Wildling Art Museum**
805-688-1082 www.wildlingmuseum.org

 **The Outdoor School at Rancho Alegre**
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 **Kids do Ecology**
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 **Ty Warner Sea Center**
805-962-2526 www.sbnature.org

 **The Center for Urban Agriculture at Fairview Gardens**
805-967-7369 www.fairviewgardens.org

Page by Holly Cline, Wildling Art Museum, Los Olivos, and Sally Isaacson, Santa Barbara Botanic Garden.