

# Endangered Species



## Cleveland National Forest

**Riddle:** What do three birds, a toad, and two butterflies have in common?

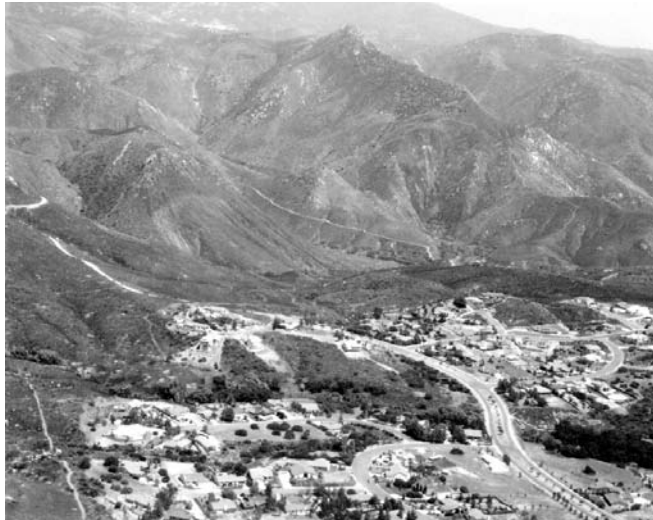
The wild shrub- and tree-covered mountains of southern California are remnants of a landscape that at one time covered most of southern California. With the settling of missions, towns, cities, and suburbs, populated areas now surround the mountains. Natural areas for plants and animals have become smaller and smaller and, in some cases, have disappeared. As a result, twenty-one species are federally listed as threatened or endangered. This insert to the Cleveland National Forest Visitor Guide spotlights six animals whose numbers have declined: the southwestern willow flycatcher, the arroyo toad, the least Bell's vireo, the California gnatcatcher, the Laguna Mountains skipper, and the quino checkerspot butterfly.

### Extinction is Forever

When the existence of a certain plant or animal is in peril, the species is officially listed by the federal government as endangered or threatened, or proposed for listing under the Endangered Species Act. Endangered species are in immediate danger of becoming extinct; threatened species are in danger of becoming endangered if not protected. Proposed species are species whose status is likely declining and may warrant listing as threatened or endangered. Under the federal law, any activity that can harm, kill, or harass the listed species is prohibited.

### Habitats Need Special Protection

The goal of land managers and employees of the Cleveland National Forest is to protect and improve the habitats of plants and animals, while allowing for other forest uses, when possible. Efforts include removing exotic species which compete with native ones, re-routing trails and roads to avoid certain habitats, closing areas (seasonally or permanently), maintaining healthy water flows in streams, and educating forest visitors.



For some listed species, "critical habitat" has been designated by the U.S. Fish and Wildlife Service. Critical habitat refers to specific areas that are essential to the conservation of federally listed species, and that may require special management. Nationwide, critical habitat has been designated for only about 10% of the listed species. Within the Cleveland National Forest, critical habitat has been designated for the California red-legged frog, the arroyo toad, the California gnatcatcher, the quino checkerspot butterfly and the Munz's onion.

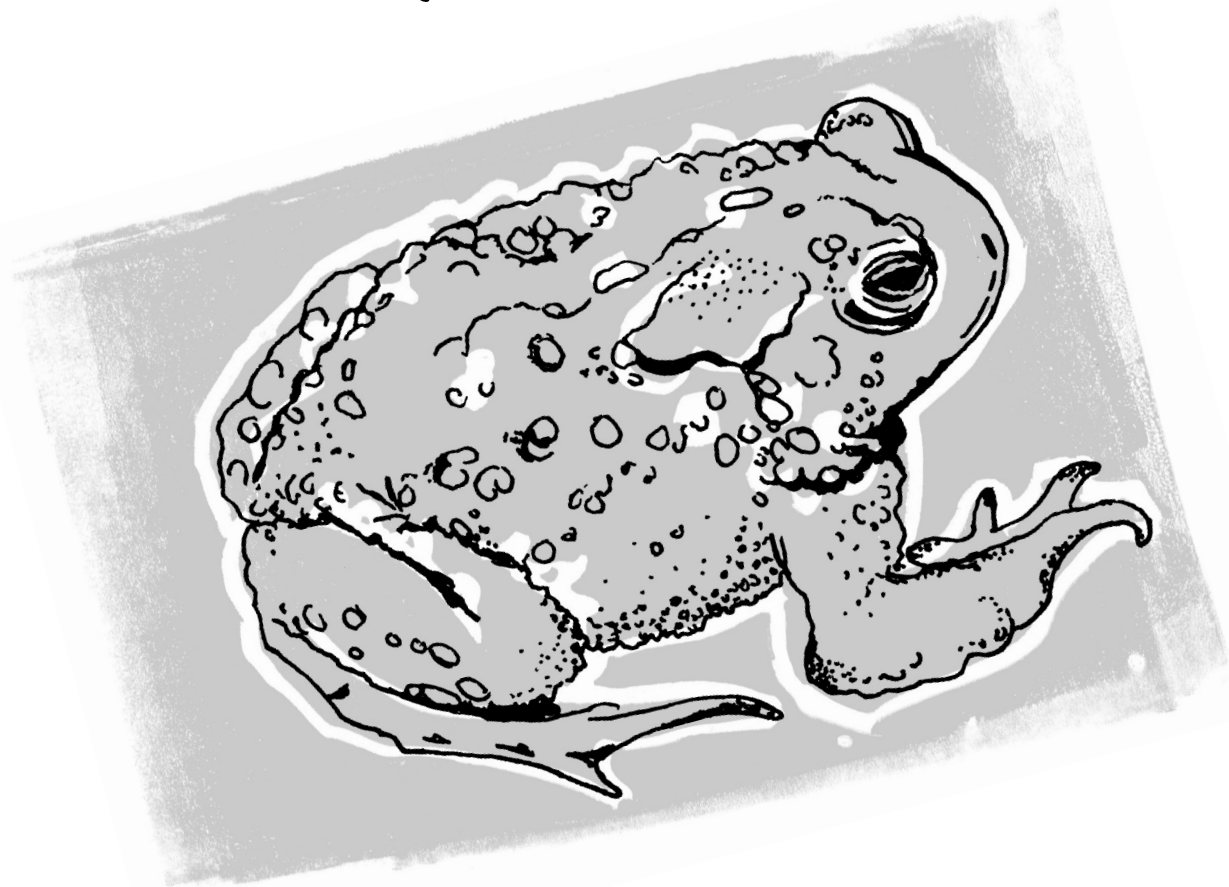
Three of the listed species described here depend on riparian habitats (streams or rivers). With water in short supply in southern California, riparian protection is a political as well as a biological problem. Changing the water flow in any stream can cause a radical change to the habitat of the toad, vireo, and flycatcher. Riparian protection is also a recreation problem — people love to play in streams. With so few riparian areas, a little damage by humans can cause a lot of problems for the wildlife.

Coastal scrub is another important habitat to the California gnatcatcher. This plant community has been broken up by home, business, and road construction, and changed by human-caused wildfires.

Lastly, two of the listed species migrate to Central and South America every winter. The Bell's vireo and willow flycatcher spend almost one half of the year in other countries. Cooperation from those countries to preserve their habitat is essential.

**Answer:** Disappearing homes.

# Meet the Animals



## In the riparian neighborhood...

### Arroyo Toad *Bufo californicus*

This rare amphibian is about three inches long, and has a light olive green or gray back with dark spots and a white belly. It spends its entire life in and around intermittent streams, or arroyos. On spring nights (usually March-June) the males sing a musical trill. The female lays her eggs in sandy, shallow areas of stream. The adults feed on ants, crickets and other small insects that live along the banks. In the fall and winter, the adults burrow into the ground and wait for the spring rains to become active again.

At one time, these toads were common throughout southern California. Today, they are known to survive in only 22 major drainages. There are many threats to the toad's survival. The shallow streams—and the toads themselves because of their shallow burrows—are easily harmed by people walking through them, vehicle traffic, or overgrazing by livestock. The construction of dams and mining activity changes the water flow and can destroy toad habitat. Exotic fish and bullfrogs (introduced, non-native species) eat the arroyo toad tadpoles. Introduced plants, such as tamarisk, also change the stream habitat.

Some areas of the Cleveland National Forest are closed seasonally to protect toad habitat. Upper San Juan Campground, Dripping Springs Campground, Indian Flats Campground, and Boulder Oaks Campground are closed between March 1 and May 30. Watch for signs explaining closures. Some of

these signs may be in dry streambeds. Toads, unlike frogs, don't need water all year, and many of the streams where the toads live dry up in fall and winter.

When you are exploring streams, please stay on existing trails and avoid walking through the shallow water stream bottoms. If you are lucky enough to see one of these toads—please observe it from a distance and leave it to enjoy its special home.

### Least Bell's Vireo *Vireo olivaceus*

The least Bell's vireo is one of four recognized subspecies of Bell's vireo. The male and female look alike, with olive gray on their crown and back, and slightly darker shade on their wings and tail. The two wingbars are difficult to see, but the dark eye encircled with a faint white ring is more noticeable. Other vireos you may see include Hutton's vireo, which lives in oak woodlands,



and warbling vireo and solitary vireo, which migrate through the area in the spring and fall.

The least Bell's vireo nest hangs in a fork of a small tree or shrub branch usually only 2-3 feet off the ground. Vireos prefer to build nests in willow thickets along streams with an overstory of cottonwoods, but will nest in a variety of shrubs, including exotic species. After raising one or two broods, the vireos migrate to the southern tip of Baja California (Mexico), where they spend the winter. Very little is known about their winter habits.

Numbers of this vireo declined drastically during the mid-1900s. Once common from Baja to Northern California, a survey in 1985 counted only 275 nesting pairs, mostly in San Diego County. In 1986, the bird was listed as endangered. Two main causes for this decline have been identified: a decline in the streamside habitat, due to water use by farms and homes; and the behavior of cowbirds, which interfere with the vireo's reproduction.

The brown-headed cowbird lays eggs in the vireo's nest and pecks holes in the nest and discards the vireo eggs. The cowbird does not recognize the alien eggs, and raises the cowbirds as its own. The young cowbirds are bigger and take the food from the young vireos that do manage to hatch. The result is more cowbirds and fewer vireos.

Vireo habitat is closely monitored by national forest biologists. Grazing is not allowed in the breeding areas, and restoration of riparian habitat is ongoing. One area that was successfully restored is the portion of Pine Creek near the Pine Creek trailhead, west of Pine Valley on the Descanso Ranger District. In 1990, this area was a muddy stream with no plants growing along the channel. After the area was fenced, willow cuttings were planted. Now, the stream is clear, and there is a thicket of tall willow saplings along the banks.

All of these efforts to protect the vireo are paying off. Vireo numbers are on the increase—a survey in 2001 counted 1,500 breeding pairs. Creating and protecting nesting habitat will continue to be the most important thing we can do to keep these songbirds in the world.

## Southwestern Willow Flycatcher

### *Empidonax traillii cafer*

The willow flycatcher is another little gray bird, a little bigger than the vireo, but with very different behavior. Flycatchers catch insects while in flight, an activity easily seen by anyone who takes time to watch. While perched on a branch or a telephone wire, this bird flips its tail up and down while watching for flying insects. Then they swoop down, catch their meal, and return to their perch to eat it.

The southwestern willow flycatcher is one of three recognized subspecies of the willow flycatcher in the western United States. This bird has a grayish-green back and wings, whitish throat, light gray olive breast, and pale yellow belly; the male and female look similar. The song is a "fitz-bew," and the call is a repeated "whit." Other species of flycatchers in the Cleveland National Forest include the Western flycatcher, found along most forest streams, and the olive-

sided flycatcher, which nests in coniferous forests at higher elevations.

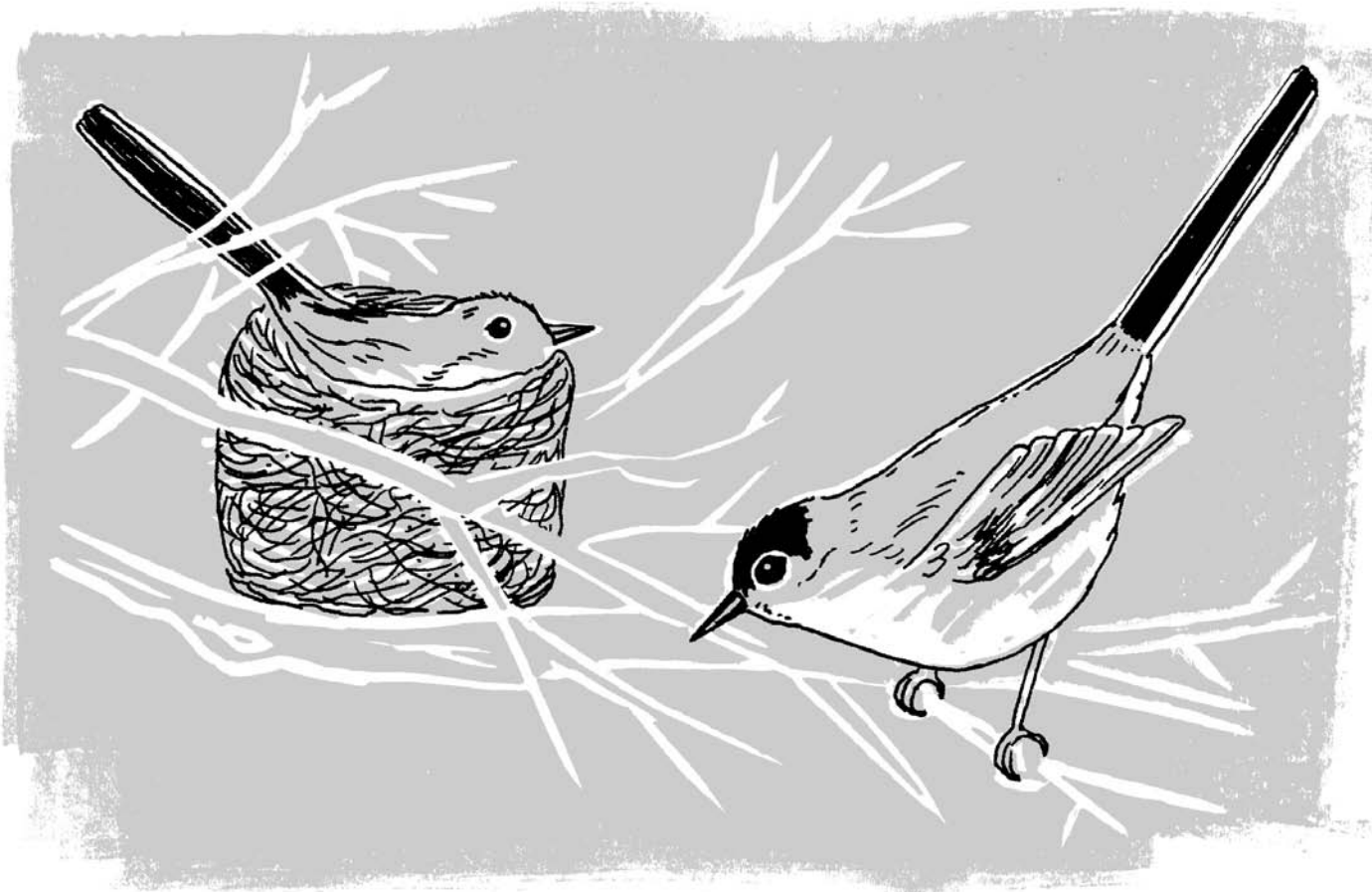
The male willow flycatcher builds a cup-like nest for the female to push or nudge, in thickets of willows, cottonwoods, and alders along streams or wet areas. Throughout the summer they feed above and adjacent to the thick riparian bushes. As early as August, willow flycatchers start migrating to Mexico and Central America, usually flying at night. They spend 8-9 months on their wintering grounds, not returning until the following May.

Like the least Bell's vireo, the primary cause for the decline of numbers of this bird is loss of riparian habitat, especially at lower elevations near cities and suburbs. Other threats include livestock grazing or recreational activity near streams, pesticides and some cowbird parasitism. Another major factor may be loss of habitat in their wintering grounds in other countries.

The southwestern willow flycatcher was listed as endangered in 1995, when less than 1000 breeding pairs were counted in their range (5 southwestern states). Fewer than 100 breeding pairs were known in California. It is too soon to tell whether conservation measures are having an effect but, again, the main focus is on increasing the amount of habitat available for nesting.



## In the coastal shrub community...



## Coastal California Gnatcatcher

### *Poliioptila californica californica*

The coastal California gnatcatcher was first proposed as endangered in 1991, but its status became listed threatened in 1993. At that time was estimated that there were 2,000- 3,000 nesting pairs in the United States. This bird is often in the news because much of its remaining habitat is some of the most expensive privately-owned real estate in the United States!

The gnatcatcher's primary habitat is coastal (less than 2,500 feet) sage

scrub, which includes low-growing plants such as California sagebrush, California buckwheat, laurel sumac, cacti, and various shrubs. The nest is usually built in a shrub about 3 feet off the ground. Gnatcatchers also fly to nearby plant communities, such as riparian, grassland, and chaparral, to look for food.

The gnatcatchers search through the branches of shrubs looking for beetles, wasps, bugs, flies, grasshoppers, and spiders. They don't seem to seek out water, and most of the year can best be seen within the few acres of their territories.

The gnatcatcher is another little gray bird, but with some distinctive markings. Both male and female have a two toned plumage, dark blue-gray on the upper portion and grayish white on the lower. The tail is black with white outer tail feathers. During breeding season, the male has a black cap.

This bird was originally classified as a subspecies of the black-tailed gnatcatcher, but in 1989 it was classified as its own species, based on its behavior, ecology, and DNA analysis. The California gnatcatcher is a coastal species, occurring on the west side of the mountains of southern California, while the black-tailed gnatcatcher is a

desert species found on the inland side of the mountains. Another way a birdwatcher can distinguish the California from the black-tailed is by its call. The former has a cat-like call; the latter has a harsh wren-like call.

On private lands the main threat to gnatcatchers is development. In the Cleveland National Forest, human-caused fires have decreased the numbers of gnatcatchers in the San Diego River area. Several wildfires here in the early 1990s reduced the amount of habitat, and areas that burned twice have become non-native grasslands.

# In the mountain meadow community...



## Quino Checkerspot Butterfly *Euphydryas editha quino*

The checkerspot is similar in size to the skipper, and has a checkered pattern of dark brown, reddish, and yellowish spots on its wings. Its family, the *Nymphalidae*, or brush-footed butterflies, is huge and diverse. Identification of individual species is difficult. Within its range, there are quite a few species which look similar to the quino checkerspot.

The quino checkerspot's habitat is the upland sage/scrub habitat in the foothills of southwestern California and northwestern Baja California. It especially likes sunny grasslands or open areas. The caterpillars feed on the leaves of dwarf plantain, *Plantago erecta*, but will also use other annual plants. The caterpillars and the first adults emerge as early as mid-January, with the peak flight in March and April. The adults live from 4 to 8 weeks.

The checkerspot habitat is also the favored habitat of cities, subdivisions, businesses, and roads. Since the 1950's, this butterfly's numbers have drastically declined, mainly as a result of the direct loss of land and breaking up of its habitat. Today, only eight populations of the quino checkerspot are known, with at least one in Baja California. Most of the known populations are so small that it is unlikely they can recover from natural disturbances, such as fire and drought.

The butterflies feed on specific plants during their life cycle, and any change of those plants can affect their survival. Soil disturbance (from grazing, off-highway vehicles) may allow the growth of non-native grasses and flowers, which can crowd out the plantain and other plants the butterflies depend on.

Of course, butterfly collection by people can have a drastic effect on these small populations. **Collection of any wildlife or plant in a national forest requires a permit.** Most butterflies are extremely difficult to identify. Because of the risk of collecting a protected species by mistake, please leave collecting to experts only.

## Laguna Mountains Skipper *Pyrgus ruralis lagunae*

The Laguna Mountains skipper is a butterfly found only in the high mountain meadows of the Cleveland National Forest. Of all the species listed here, it has the most restricted range. Small populations have been sighted on Mt. Palomar and in the Laguna Mountains.

The skipper is a medium-sized butterfly (3 cm wingspan) of the family *Hesperiidae*. To the casual observer, the wing pattern looks similar to many other butterfly species, with checkered patterns of black, brown, and white. Viewed close-up, skippers have a stout body and slightly bent club antennae. They are called skippers because of their powerful flight—short, fast bursts of energy take them from flower to flower.

The Laguna Mountains skipper depends on only one plant for survival—a perennial herb that grows in the meadows between the pine trees. The eggs are laid on the leaves or flowers of *Horkelia clevelandii*, a member of the rose family. The caterpillars make silk nests out of the leaves, feed, and pupate on this plant exclusively. In the late summer, the caterpillars go into a kind of sleep (diapause) when they

do not feed. In the early spring, the caterpillars begin feeding again, and then go into the pupa, or chrysalis phase. Within weeks they emerge as flying adults.

The adults do not migrate, but stay in the same area, sipping nectar from *Horkelia* and other flowers. The Laguna Mountains skippers start emerging from the pupal stage in mid-April and continue to the end of June. The males patrol all day near the ground in search of females. The adults only live 10-20 days. The first generation, or flight, is flying from mid-April to the end of June. A second flight sometimes occurs between late June and mid July.

In San Diego County, there are three other closely related species of skipper, all members of the genus *Pyrgus*. The other skippers have a slightly darker wing pattern and depend on a wider variety of plants for survival.

The decline in the numbers of the Laguna Mountains skippers is not well understood, but seems to be linked to drought. The forest is protecting its host plant, *Horkelia clevelandii*. Cattle apparently love to eat it. People love to camp in or near the meadows where it grows. Fencing and other management practices are necessary to protect the plant and the skipper.

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2005. Printed on recycled paper.  
Illustrations by Anne Austin Design.

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