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Tan riffleshell

Photo by Richard Biggins/USFWS

What's in a name?

The common names for many critically imperiled species identify the areas that sustain them: **Tumbling Creek cave snail, Alabama sturgeon, Laguna Mountains skipper, Shasta crayfish, Rio Grande silvery minnow, Sonoran pronghorn, Chittenango ovate amber snail, and Wyoming toad.** Other names describe the beauty of the species, such as **slender chub, autumn buttercup, and winged mapleleaf mussel.**



Rio Grande silvery minnow

USFWS photo

Saving Species on the Brink of Extinction

According to paleontologist Niles Eldredge, Earth is experiencing its sixth major wave of extinction.¹ Our nation has not escaped the forces threatening plant and animal species. Of the more than 1,200 species in the United States currently protected by the Endangered Species Act, 417 are declining in number and 28 others are now believed to be extinct. Many critically endangered species are geographically concentrated in “hot spots.”

Aquatic species in the Southern Appalachian and Lower Tennessee Cumberland ecosystems. The southeastern U.S. has the greatest diversity of freshwater mussels and crayfishes in the world, and the highest diversity of freshwater fishes and snails in the country. Conservatively, we estimate that nearly 40 of these species have reached such low population numbers that a single isolated event could cause their extinction. Because many of these species survive in only a fragment of their former range, a single catastrophic event could cause their extinction. Among the southeastern aquatic species that are critically endangered are the tan riffleshell (*Epioblasma florentina walkeri*), with only one reproducing population in Indian Creek, Virginia; the plicate rocksnail (*Leptoxis plicata*), currently found only in the Locust Fork, Alabama; and the boulder darter (*Etheostoma wapiti*), found only in the Elk River in Tennessee and Alabama. Recovery actions needed to save these species include developing propagation technology, restoring habitat, reintroducing the species into restored habitat,

and supporting sustainable development and resource use that also conserves the species.

Endemic Hawaiian plants and animals. Hawaii has more critically endangered species than any other state. As of October 24, 2003, there are 312 listed species, 106 candidate species, and over 1,000 species of concern. Of these, there are 102 endangered species, including 11 birds, four tree snails, and 87 plants, in such low numbers that could be rendered extinct by a single isolated incident, such as a fire or hurricane. The most serious threats to these species include the continued influx of competitive and predatory nonnative species, and the fragmentation and degradation of habitats. Efforts needed to save these species include removing or controlling destructive invasive species (for more information, see the article on the Hawaii's Plant Conservation Strategy in this issue). Emergency management needed to protect Hawaii's critically endangered species will also benefit other listed species and at least 30 candidate species.

¹ (see <http://www.actionbioscience.org/newfrontiers/eldredge2.html>)

While the Southern Appalachians and Hawaii host groupings of critically endangered species, there are many other such species across the Nation. Some examples follow:

The **Carson wandering skipper** (*Pseudocopaeodes eunus obscurus*) is a butterfly currently known from only two populations, one in Washoe County, Nevada, and one in Lassen County, California. It needs grassland habitats on alkaline substrates to survive, and this habitat type has been reduced by activities associated with development, certain agricultural practices, collection, and nonnative plant invasions. This rare butterfly is also threatened by unscrupulous collectors.

The **pallid sturgeon** (*Scaphirhynchus albus*) is a fish that has survived for over 200 million years but it is now on the verge of extinction. After the construction of dams on the Missouri River, the ecosystem inhabited by pallid sturgeon was almost completely altered. There is limited evidence that reproduction is still occurring in the wild. Most of the pallid sturgeon in the wild are 40 to 50 years old. The window of opportunity for obtaining reproduction from these individuals is close to the end. Retrofitting Missouri River fish hatcheries to accommodate the needs of this unusual species is critical to aug-

menting the wild populations. The efforts the Service and our partners make during the next five years will be crucial for preventing this species' extinction.

The **Mississippi gopher frog** (*Rana capito sevosa*) was once found in suitable habitat within the Lower Coastal Plain from Florida to eastern Louisiana. Today, however, the frog is known from only one small pond in extreme south-central Mississippi. It spends most of the year underground, often using the burrows of the threatened gopher tortoise (*Gopherus polyphemus*). In spring, the frogs travel overland to reach small ephemeral ponds, where they mate and lay eggs. Most of these ephemeral ponds have been lost to forestry practices, agriculture, and, in some cases, conversion to permanent ponds stocked with game fish. Surrounding habitats with gopher tortoise burrows have likewise been lost to development and land use changes. Preventing the extinction of this unique frog will require the restoration of ponds and surrounding habitats and the reintroduction of frogs from the surviving population.

The emergency-listed **Columbia Basin pygmy rabbit** (*Brachylagus idahoensis*) has fewer than 50 individuals in the wild, all in Douglas County,

Washington. Its faces imminent extinction resulting from disturbances to its sagebrush habitat, disease, predation, and loss of genetic diversity. We need to develop a program to breed the rabbits in captivity for release into the wild. Its survival will depend on working with our partners and stakeholders to implement conservation actions and to integrate these actions with agricultural practices.

Attwater's greater prairie-chicken (*Tympanuchus cupido attwateri*) may be North America's most endangered bird. Since 1996, captive-bred birds have been released on the Attwater's Prairie-Chicken National Wildlife Refuge and the Texas City Prairie Preserve. However, these sites can support only a small number of prairie-chickens. Saving this species will require strong partnerships with private landowners. Prescribed burns, brush control, conversion of land back to native grasses and forbs, and grazing regimes that will foster native species are needed.

Halting the loss of these and other species will require continued collaboration between the Service and our many partners. By working together, we can conserve the remaining habitats and restore others, while at the same time supporting sustainable development and land use.



Above: pallid sturgeon
USFWS photo

Left: Carson wandering skipper
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