

NEWS_WEEK2

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"Disappearance of toads, frogs has some scientists worried"

By Charles Petit

Chronicle Science Writer

Gary Fellers, a biologist at Point Reyes National Seashore, hiked into the back country around Mount Lassen recently to scour the ponds and streams for the small, brown Cascades frog that he used to find there by the thousands.

"We looked at 50 localities, including 15 where historically the frogs were always found," he said. "We found two. Not frogs in two places. Two frogs total."

For several years in a row now, similar news of vanishing frogs and toads has come from Australia, Canada, India, Europe, what used to be the Soviet Union, the mountain-hugging rain forest of Central and South America, and most of the western United States.

Now, after a series of meetings to compare fragmentary but worrisome notes, hundreds of scientists and amateur naturalists have joined in an international attempt to find out whether, as so many fear, frog and toad populations are in simultaneous decline around the world.

The task, the scientists say, should take three to five years.

The International Union for the Conservation of Nature set up the Declining Amphibian Populations Task Force with backing from many governments, including that of the United States. Private grants have helped--St. Helena-based Frog's Leap Vineyards pays for the newsletter, Froglog.

"A whole series of biologists have been very hard at work, and many if not all of us are convinced there is a problem," said David Wake, a University of California herpetologist and chairman of the new task force.

So far, "We are not getting any good news," said James Vial, professor of wildlife biology at Oregon State University in Corvallis, where the task force set up its headquarters in January with him as its coordinator.

CALIFORNIA SPECIES

In California, the mountain yellow-legged frog and the Yosemite toad are missing from most of the Sierra Nevada. The arroyo toad of Southern California has vanished from three-fourths of its range. The red-legged frog that once lived throughout Southern California is down to one remote area of Riverside County.

A few frogs and toads may be gone entirely.

In Australia, a strange frog that incubated its young in its stomach was last seen 13 years ago. The brilliant golden toad of Costa Rica's mountainous rain forest that seemed well-protected in the

Monteverde Cloud Forest Reserve has not been known to breed since 1987 and the last two individuals were spotted two years ago. The harlequin frog has nearly vanished from the same range.

In light of such disappearances around the globe, "the situation is pretty scary," said Alan Pounds, a staff scientist at the reserve.

Getting a handle on the overall picture is proving difficult.

In many cases a local decline may have a ready explanation, such as the drought in California, pesticides from nearby farms or the introduction of fish or predatory non-native frogs. It is the sheer number of reported declines, many in well-protected wild areas, that stuns the experts and leads to fear that something more basic is going on.

Some scientists blame acid rain. Others think the thinning ozone layer has increased ultraviolet radiation at the ground enough to devastate amphibians that are typically thin-skinned and often bask in the sun and whose eggs and larvae live in shallow, sunlit waters. Trace amounts of toxic compounds carried by the wind might conceivably deal fatal blows to animals that tend to breathe through their moist skins.

But nobody claims to know for sure. Scientists are hard pressed to understand how a diverse order of animals that has been on Earth for 200 million years should be highly vulnerable to an environmental change so subtle that experts can not agree what it is.

Most scientists still hope and a few believe that the wave of fear over amphibians is merely due to a weird coincidence of natural fluctuations, along with a few declines attributable to purely local causes.

One of the rare studies that has kept track of frog and toad populations over an extended period is at the federal government's Savannah River Site in South Carolina where nuclear reactors make plutonium and tritium for atom bombs. Most of the site is off-limits and is home to many species of toads, frogs and salamanders.

NATURAL VARIATIONS

A report in August in the journal SCIENCE by Joseph H. K. Pechmann of Georgia University, which runs a biology station at the site, showed that the number of amphibians at one pond often went up and down wildly from year to year. Years with thousands of animals were followed by years with few or none. But, Pechmann said, "there was no long-term trend." He warned that such natural variation may make it hard to recognize a real, long-term decline.

One doubter, Peter Morin of Rutgers University, said the apparent worldwide amphibian decline "is a phenomenon without much empirical support, not much data." If today's herpetologists all started studying places that were hopping with frogs 15 years ago, he said, a large portion today would inevitably be at a low point. "Maybe there are places right around the corner that are full of frogs," he said.

But most of the experts think that, even accounting for such random fluctuations and obvious losses of habitat, something broader is under way.

"It has always struck me as absurd that many populations around the world would fall 'in phase' more or less simultaneously, and I am perplexed at the views of colleagues who make such claims," Wake said.

"There is a series of declines among the amphibians that cannot be explained by the usual means," said John Wright, curator of herpetology at the Los Angeles Museum of Natural History. "These are not just declines but appear to be absolute losses. They are not just dropping down, they are in a catastrophe."

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