



U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account
Sierra Populations
MT. YELLOW-LEGGED FROG
Rana muscosa



CLASSIFICATION: Candidate (Sierra populations only)

Federal Register 68:2283; January 16, 2003.
http://ecos.fws.gov/docs/federal_register/fr4095.pdf.

We determined that listing yellow-legged frogs in the Sierra Nevada is warranted but precluded by higher priority actions.

On June 25, 2007, we published an amended finding. [Federal Register 72:34657](#). See sidebar to right.

See References below for additional Federal Register notices concerning this species.

The Southern California population of *Rana muscosa* is listed as endangered. We have designated critical habitat for it. The population occurs in the San Gabriel, San Bernardino and San Jacinto mountain ranges.

For more information about the Southern population, see the Carlsbad Fish & Wildlife Office's Mt Yellow-Legged Frog web page http://www.fws.gov/carlsbad/mylf_docs.htm

CRITICAL HABITAT:

We will address critical habitat when we propose listing the species.

RECOVERY PLAN: none

Fish & Wildlife Service Explains Listing Process in Response to Court Order

On June 25, 2007, the Service published an [amended finding](#) that more fully explains its previous action on a petition to list the mountain yellow-legged frog.

The notice did not change the 2003 finding by the Service (See References). In that 2003 finding, we determined that listing of the Sierra Nevada distinct population segment (DPS) under the Endangered Species Act was warranted but precluded by higher priorities.

The June 25, 2007 notice responds to a ruling by the 9th Circuit Court of Appeals on October 18, 2006. That ruling directed the Service to demonstrate how further action on the species had been precluded by pending proposals. The ruling also directed us to demonstrate how we are making progress on adding species to the protected list.

In the June 25, 2007 notice, we outlined in detail the Congressionally-established appropriation levels on the listing program, the process we follow to prioritize listing considerations, and the actions taken on within those constraints. The notice further identified 62 species on which we were working at the time we considered the petition to list the frog.

Subsequent to our 2003 finding, we published additional information regarding the species in 2004, 2005 and 2006. (See References below)

DESCRIPTION:

Mountain yellow-legged frogs are members of the family of "true frogs" - *Ranidae*. True frogs are semi-aquatic and carnivorous, feeding primarily on insects, spiders, and crustaceans. Species in this genus typically live along the edge of watercourses and rely heavily on an aquatic environment for foraging, shelter, breeding and protection from predators.



Adults are 40 to 80 millimeters long. (1.5 to 3.25 inches) Females are slightly larger than males and males have a swollen, darkened thumb base.

Mountain yellow-legged frogs have highly variable skin patterns and coloration ranging from large, discrete dark spots to numerous, smaller spots. Coloration may be a mix of brown or yellow, but can often include hues of gray, red or greenish-brown. There can be moss-like patches. (*Muscosa* is Latin for "mossy.")

Tadpoles are mottled brown with a golden tint and a faintly yellow underside. They take 2 to 4 years or more to develop into frogs.

Mountain yellow-legged frogs are diurnal (meaning active during the day).

The mountain yellow-legged frog inhabits the high elevation lakes, ponds, and streams in the Sierra Nevada Mountains of California, from near 1,370 to 3,650 meters (4,500 to 12,000 feet).

ARE THERE TWO SPECIES OF MT. YELLOW-LEGGED FROG?

V. T. Vredenburg et al. have suggested that there are two separate species of mt. yellow-legged frog. See reference below.

The biologists identified a northern species they call *Rana sierrae*. They say that it occurs in the northern and central Sierra Nevada. They have chosen not to give it a separate common name.

They continue to use the scientific name *Rana muscosa* for frogs in the southern Sierra Nevada and Southern California. They say that there is no range overlap between the species.

The suggested differences between *R. muscosa* and *R. sierrae* may not be obvious to the casual observer. *R. muscosa* has longer legs. Mating calls are different. Of course, Vredenburg et al. identify genetic differences to support the proposed split.

NOTE: Our determination that listing is warranted applies to all of the mt. yellow-legged frogs in the Sierra. When we write a proposed rule, we will take into consideration the proposed species split.

RANGE IN THE SIERRA:

In the Sierra Nevada, the historic distribution of mountain yellow-legged frogs was more or less continuous from La Porte in southern Plumas County south to southern Tulare County.

Records for the species in the Sierra Nevada document it on both sides of the crest in all major drainages from Plumas to Tulare counties, with a single record from Kern County.

Except for historic populations in extreme western Nevada in Washoe and Douglas counties, on Mt. Rose near Lake Tahoe, possibly Edgewood Creek, and elsewhere around Lake Tahoe, the species is confined to California.

According to Vredenburg et al., *R. sierrae* ranges from Plumas County south to Inyo County. On the western slope of the Sierra Nevada, the southern boundary is the division between the Middle and South forks of the Kings River.

On the eastern side of the Sierra, the authors show *R. sierrae* in the Glass Mountains just south of Mono Lake in Mono County and, on the eastern slope of the Sierra Nevada, south to Matlock Lake in Inyo County.

Per Vredenburg et al., the distribution of *R. muscosa* occurs only on the western slope of the Sierra and in Southern California.

PREDATORS:

Native predators include garter snakes, birds, coyotes and black bears. Predation by introduced trout is a best-documented cause of the decline of the Sierra Nevada mountain yellow-legged frog. To help reverse the decline of the mountain yellow-legged frog, the Sequoia and Kings Canyon National Parks have been removing introduced trout since 2001.

REPRODUCTION:

Mt. yellow-legged frogs breed in the shallows of ponds or in inlet streams. Adults emerge from overwintering sites immediately following snowmelt. They will move over ice to get to breeding sites. Eggs are deposited underwater in clusters. These are attached to rocks, gravel, and vegetation or under banks. There are from 15 to 350 eggs per egg mass. Hatching times range from 18 to 21 days at temperatures from 5° to 13.5° Celsius. (41° to 56° Fahrenheit.)

THREATS:

Up until the 1960s, the mountain yellow-legged frog was widely distributed and abundant across the Sierra Nevada. Biologists have estimated that since then the population of the mountain yellow-legged frog has declined 50-80 percent. The reasons for this decline include such activities as non-native fish stocking, disease, pollution and livestock grazing.

In California, chytridiomycosis, more commonly known as chytrid fungus, has been detected in many amphibian species, including the mountain yellow-legged frog within the Sierra Nevada. Recent research has shown that this pathogenic fungus is widely distributed throughout the Sierra Nevada, and that infected mountain yellow-legged frogs die soon after metamorphosis. Several infected and uninfected populations were monitored in Sequoia and Kings Canyon National Parks over multiple years, documenting dramatic declines and extirpations in infected but not in uninfected populations. In the summer of 2005, 39 of 43 populations assayed in Yosemite National Park were positive for chytrid fungus.

REFERENCES FOR ADDITIONAL INFORMATION:

Stebbins, R.C. 1985. A field guide of western reptiles and amphibians. Second edition, revised. Houghton Mifflin Company, Boston, Massachusetts.

U.S. Fish and Wildlife Service. 2003. Endangered and Threatened Wildlife and Plants; 12-Month Finding for a Petition to List the Sierra Nevada Distinct Population Segment of the Mountain Yellow-Legged Frog (*Rana muscosa*). Federal Register 68:2283-2303.
http://ecos.fws.gov/docs/federal_register/fr4095.pdf

U.S. Fish and Wildlife Service. 2004. Review of Species That Are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions. Federal Register 69:24875.
http://ecos.fws.gov/docs/federal_register/fr4246.pdf

U.S. Fish and Wildlife Service. 2005. Endangered and Threatened Wildlife and Plants; Review of Native Species That Are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions; Proposed Rule. Federal Register 70-24869.
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U.S. Fish and Wildlife Service. 2006. [Review of Native Species That Are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions](#). 71-53755.

U.S. Fish and Wildlife Service. 2007. [Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Sierra Nevada Distinct Population Segment of the Mountain Yellow-Legged Frog \(*Rana muscosa*\)](#). 72:34657.

U.S. Geological Survey. Amphibian declines and deformities web page
<http://www.usgs.gov/amphibians.html>.

Vredenburg, V. T., R. Bingham, R. Knapp, J. A. T. Morgan, C. Moritz & D. Wake. 2007. Concordant molecular and phenotypic data delineate new taxonomy and conservation priorities for the endangered mountain yellow-legged frog. *Journal of Zoology*, 271:361-374.
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Credits: Photograph of mt. yellow-legged frog by Peter Epanchin, U.S. Fish & Wildlife Service

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Last updated: December 7, 2007