

Mountain yellow-legged Frog (*Rana muscosa*)

Currently there are no official federal survey guidelines for mountain yellow-legged frog (*Rana muscosa*).

Phase 1: Habitat Assessment

Habitat assessments for the mountain yellow-legged frog shall be completed by a qualified biologist who is familiar with southern California amphibians and their associated habitats. The entire project area will be searched by foot for suitable habitat. Suitable habitat is defined as creeks or rivers which support water throughout the year (portions of the creek system may only support pooled water for portions of the year). Typically, suitable habitat consists of a series of pools and runs which receive abundant sun. Because this species typically requires two years to metamorphose larvae, intermittent creeks are not considered to be suitable habitat. In addition, this species is very susceptible to predation by non-native fishes, therefore, improved lakes and artificial ponds which support non-native predatory fishes (excludes mosquitofish) are considered to be not suitable.

Phase 2: Field surveys

A focused survey will be conducted in all areas found to be potentially suitable for mountain yellow-legged frog. Care should be taken to apply a level of effort and to use a style of surveying appropriate to the site. In addition, field work should be conducted according to the best professional judgment of the surveyor (e.g. dogs should not be brought on surveys as they disturb frogs). Surveyors must have field experience in the identification of California amphibians. Surveyors with specific needs not addressed by this field survey protocol and who may wish to propose alternative methods, may contact MSHCP biological resource staff.

Surveys should be conducted between May 1 and August 31. These sampling dates were selected because they allow surveys to be conducted with minimal disturbance of breeding frogs, eggs, or tadpoles during a period when frogs can be reliably detected.

All aquatic habitat identified during the site assessment should be surveyed three times during the day. Surveyors should wait at least seven (7) days, and meet the minimal environmental conditions described below, before repeating surveys at the same site.

Day-time surveys should be conducted on clear (less than 50% cloud cover), sunny days. Surveys should be conducted when temperatures are equal-to or greater than 65 degrees Fahrenheit and sustained winds are less than 10 miles per hour. Windy, rainy, and cold days should be avoided.

Surveyors should walk along the entire shore, while visually scanning all shoreline areas in all aquatic habitats identified during the site assessment. Mountain yellow-legged frogs are rarely more than two or three hops from water. If surveys must be conducted from the water, then surveyors should take maximum care to avoid disturbing sediments, vegetation, and any visible larvae. When walking on the bank, surveyors should take care to not crush rootballs, overhanging banks, and stream side vegetation that might provide shelter for frogs.

Although not required, photographs of frogs observed during field surveys may aid in verification of species identifications. Surveyors should limit photography to the extent necessary to document the presence of mountain yellow-legged frogs and should not attempt to photograph frogs if this is likely to disturb them.

Reporting the results of field surveys. Any information on mountain yellow-legged frog distribution resulting from field surveys should be sent to the California Natural Diversity Data Base (CNDDDB) administered by the Natural Heritage program of the California Department of Fish and Game with copies sent to both the MSHCP biological resource staff and the Carlsbad USFWS field office.

Surveyors should also prepare a final report that includes the following: copies of all field notes, data sheets, photographs of the project site and of frogs observed, and a typed summary providing survey dates and times (both begin and end times), names of surveyors, temperature (water and air), wind speed, a description of the methods used, numbers and size classes of all amphibians observed, a map of the site showing survey locations, habitat and frog sightings, a copy of the CNDDDB form, and a description of possible threats to mountain yellow-legged frogs observed at the site. The report should be provided to the MSHCP biological resource staff and the Carlsbad USFWS field office.

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