

# Amphibian Monitoring Project

Since 1990 Park District biologists have been conducting amphibian surveys as part of a long-term monitoring study. Their objective is to document the distribution of these species, determine and evaluate aquatic and terrestrial habitat suitability, estimate population size and densities, and identify and minimize threats to their survivorship. The biologists are especially interested in the California red-legged frog, a species listed as threatened by the US Fish and Wildlife Service, the foothill yellow-legged frog, a federal and California state species of concern, and California tiger salamander, a federal candidate and state species of concern.



© S. BOBZIEN

*California tiger salamander*



© J. DIDONATO

*Foothill yellow-legged frog*



© S. BOBZIEN

*California red-legged frog*

To analyze aquatic habitat suitability District biologists have systematically surveyed over 275 freshwater ponds and 42 drainages.

They use spot-lights, seines, dip-nets, and their hands to capture, measure, weigh and then release individuals. To study California red-legged frog movements and dispersal, the biologists have inserted intra-dermal microchips (pit-tags), placed small radio transmitters on frogs, and used telemetry to track individual movements.

The California red-legged frog and California tiger salamander are relatively widespread throughout Eastern Alameda and Contra Costa Counties.



© S. BOBZIEN

*A California red-legged frog about to be released after being fitted with a radio transmitter.*

# Amphibian Monitoring Project



© J.DIDONATO

*Surveying a pond at Ohlone Regional Wilderness Preserve*

California red-legged frogs occur and breed in a variety of habitats including intermittent and perennial streams, seasonal and permanent ponds. California tiger salamanders breed exclusively in ponds. In contrast, the foothill yellow-legged frog only occurs and breeds in the pristine streams of the Alameda Creek watershed.

These species spend significant amounts of time in terrestrial (upland) habitats. These surrounding uplands are critical for the species and there is a strong positive correlation between ground squirrel burrows, livestock grazing, and the occurrence of California red-legged frog and California tiger salamander.

Threats to their continued survival include the loss of wetland, riparian, and adjacent upland habitat caused by development, introduction of non-native aquatic predators such as bullfrog and warm-water fish, and exposure to pathogens and contaminants. Working with USGS and USFWS, District biologists are investigating many of these adverse impacts. These long-term studies provide essential information to assist in protecting, preserving and recovering these species.



© S.BOBZIEN

*Gary Fellers of the USGS places a radio transmitter on a frog.*



© J.DIDONATO

*Alameda Creek.*