



WEST MARIN WILD

By Jeff Miller

Volume XI – Spring 2007



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Last weekend I ventured out to Carson Falls on Marin Municipal Water District watershed land above Kent Lake, having gotten a tip that foothill yellow-legged frogs (*Rana boylei*) and salamanders are breeding in several of the pools at the falls. Foothill yellow-legged frogs are federally and state listed as a Species of Concern due to severe population declines. Carson Falls is an idyllic series of pool-and-drop cascades in a small gorge on the rugged northwest flank of Mount Tamalpais, near Pine Mountain.

Once quite abundant in most Marin County streams, these frogs now only remain in Lagunitas Creek and its tributaries, Nicasio Creek and Walker Creek in West Marin. Formerly large populations in Redwood Creek in Muir Woods, other streams draining Mt. Tamalpais, and bayside creeks of eastern Marin County have disappeared. The species has been eliminated from half of its former localities throughout Oregon and California.

My reward for the three mile round-trip hike was viewing a dozen laid-back adult frogs soaking up the sun and snagging insects, and several egg masses, which look like clusters of hundreds of blueberries. Also in attendance were entwined pairs of amorous newts, their bright yellowish-orange bellies advertising their toxicity to would-be predators.

The frogs generally breed from late March through May, but I wasn't lucky enough to see any in amplexus, which is the way frogs mate. The smaller males ride around on the backs of the larger females and fertilize the eggs. The tadpoles hatch within one week to a month. The dorsal color of these frogs can be highly variable, but usually harmonizes with the nearby rocks and soil. Adults are lemon yellow on their abdomen and undersides of their rear legs.

Our native frog populations have tanked due to habitat loss and degradation, altered water flow patterns from dams, logging, livestock grazing, disease, pesticides, and the introduction of non-native predators like bullfrogs. Because of these threats, the Center for Biological Diversity (www.biologicaldiversity.org) will petition for Endangered Species Act protection for the foothill yellow-legged frog. Our local frogs are mostly on protected lands, but must contend with predation by garter snakes, the aforementioned newts, fish, and bullfrogs, as well as human disturbance and the deadly effects of climate change.

Because people and dogs have accidentally crushed eggs and disturbed mating frogs at Carson Falls, the water district has posted signs asking people to keep themselves and dogs out of the pools. Volunteers with SPAWN (www.spawnusa.org) are out on weekends through May 15, when the eggs and tadpoles are most vulnerable, counting frogs and educating hikers about the sensitive habitat.

The amphibian show will be going for a few more weeks and is well worth the hike to the falls. Along the way you can see soaring hawks, osprey carrying fish, scenic views of Mt. Tam and Mt. Diablo, and serpentine soil outcrops with unique native wildflowers. Take the Fairfax-Bolinas Road over the hill and down around Alpine Lake toward Fairfax. You can take Old Spool Trail directly to the falls or Pine Mountain fire road to Ot Hill fire road to the Spool Trail (download a watershed trail map at www.marinwater.org). Leashed dogs are permitted, but please keep them out of the frog breeding pools. You can volunteer for frog docent training with MMWD – call (415) 945-1169 or e-mail volunteerprogram@marinwater.org.

***West Marin Wild* is a sporadic column on the wildlife and natural world of West Marin. Contact me at Box 111, Bolinas.**