

# Invasive Bullfrog Population Explosion

by Parker Pringle

2010

To our great consternation and disappointment, year-old American bullfrog tadpoles, two-to five-inches long, were recently discovered in the creek. They are present from Pacheco Avenue in Fairfax all the way down to the Ross fish ladder, the first pool above tidewater. Judging by their size, they were born in the spring of 2009 and will metamorphose into frogs in the coming months. The sudden ubiquity of this highly invasive species is terrible news.

Native to the East Coast, the American bullfrog was introduced to California at the end of the 19<sup>th</sup> century by aficionados of frogs' legs. The species is now spread throughout the state. Bullfrogs are voracious predators, eating anything they can fit into their large mouths: birds, snakes, salamanders, mice, fish and many



*An adult bullfrog eats steelhead trout, western pond turtles, birds, mice, and anything else it can fit in its mouth. Photo by Dave Johnson*

other small animals. Of particular concern are the effects of bullfrog competition and predation on special-status species in the creek: western pond turtles, steelhead trout, and the red-legged frog. Bullfrogs are also extremely fecund, laying up to 20,000 eggs in a single clutch, and their young have few predators. This makes it nearly impossible to eliminate bullfrogs once they invade an area.

Adult bullfrogs are three to eight inches long. They are the largest frogs you will encounter in Marin County. Juvenile bullfrogs are one to three inches long after metamorphosis from tadpoles. Bullfrogs can be colored brown, olive, or green on their backs and white to grey on their undersides. They may have a mottled color scheme in these colors,

too. In mating season, the throats of male bullfrogs turn bright yellow. As with other frogs, behind the eyes of the bullfrog is a circular eardrum, which looks like a distinct flat circular shape on the skin, bigger than the eye in males and eye-sized in females.

Bullfrogs live in permanent water bodies such as ponds, lakes, and creeks. They are always found in or near water, except when they migrate overland during wet nights. They are widespread in Marin County.

Bullfrogs have a fold or ridge of skin that runs from eye to shoulder around each eardrum. This can help distinguish small bullfrogs from similar-sized red-legged frogs. Red-legged frogs have an additional fold running down their backs from eyes to hips. Juvenile bullfrogs often make a distinctive *ceep* sound as they leap into the water after being disturbed. If a frog makes this sound, it is definitely a bullfrog. But if it does not make this sound, it may still be a bullfrog. Adult male bullfrogs make a distinctive deep *bwaa*, *bwaa* sound in the spring and summer.



*Bullfrog tadpoles, two- to five-inches long, have recently been seen in our creeks. Photo by Gary Leo*

The bullfrog population explosion first came to our attention in the middle of June thanks to a creekside resident who spotted the

unusual tadpoles. We have reported their presence to the Department of Fish and Game and are consulting with frog experts on control options. Although we have not determined a plan yet, we are highly concerned about the effects this generation of bullfrogs will have on the creek in coming years. We want to get an idea of the historical and current distribution of bullfrogs in the watershed.

Please help us by letting us know if you see or hear bullfrogs in the creek or other water bodies like fish ponds and drainage ditches. We would also like to hear about your observations of bullfrogs in the watershed in past years. Finally, notify us if you see any other frogs, especially the endangered red-legged frog. The much smaller tree frog is the most common frog in Marin, but we would also like to learn where this species can be found in our watershed. Send your observations to [info@friendsofcortemaderacreek.org](mailto:info@friendsofcortemaderacreek.org). Here is a list of things you can do to prevent the spread of bullfrogs:

- Let us know if you hear or see frogs or tadpoles
- Never release bullfrogs into the wild or garden/fish ponds
- Never stock garden/fish ponds with bullfrog tadpoles. When they metamorphose into frogs they can leave the pond and migrate into the creek
- Never drain ponds that may contain bullfrogs—and thus their eggs or larvae—into the creek or storm drains

To hear bullfrog sounds visit:

<http://www.californiaherps.com/frogs/pages/r.catesbeiana.sounds.html>.

The California Herps website also has an excellent bullfrog photo gallery at

<http://www.californiaherps.com/frogs/pages/r.catesbeiana.html>

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