

## REPORT – Pond Restoration to Benefit the Red-Legged Frog



The California Red-legged Frog (*Rana draytonii*) is the largest native frog in California but has disappeared from over 70% of its historical range (Fisher & Shaffer, 1996; Hayes & Jennings, 1986). It was once abundant in central California, ranging from the coast to the Sierra Nevada foothills, but is now considered a threatened species by the U.S Fish and Wildlife Service (1996) and is also a species of special concern in California. Many factors have contributed to this decline, including habitat loss, fragmentation, and alteration, along with the introduction of the invasive American Bullfrog (*Lithobates catesbeiana*) (Hayes & Jennings) (Lawler, Dritz, Strange, & Holyoak, 1999).

Within the East Bay Regional Park District's holdings, Certified Wildlife Biologist David Riensche (aka Doc Quack) is finding that the conditions at many seasonal ponds, that were once prime habitat for the Red-Legged Frog, no longer support them year-round. Research done at Garin Regional Park in Hayward (and others) shows that many of the ponds in the East Bay are: too shallow, dry up too quickly in the spring, and choked off by excess vegetation to the point that they no longer support Red-Legged Frogs (Riensche, Tutino, & Koenig, 2019).

Therefore in 2020, the Alameda County Fish and Game Commission awarded the Regional Parks Foundation \$25,000 to restore additional habitat for the California Red-Legged Frog at Pleasanton Ridge Regional Park to support the recovery efforts of the species population. Working with a restoration team, Doc Quack completed restoration work that included:

✓ **Sediment Removal –**

- Using a long-reach excavator, front-end loader, and dump truck – in very steep terrain – the team delicately removed 50 cubic yards of sediment from the pond while protecting and retaining vital amphibian egg laying and larvae development habitat.
- They developed real-world solutions to the engineering hurdles of working in such challenging terrain, by importing 60 cubic yards of suitable compact fill for the purposes of repairing, building-up and widening the important park access road which also serves as the pond's embankment.
- The crew meticulously crafted a new pond outlet and spillway in rock, and then linked both ends by trenching, laying to grade and connecting 100 feet of new pipe.

Doing so improved the conditions for laying eggs since the Red-Legged Frog tends to lay eggs in deeper water. It also increased the depth of the pond so that in the spring and early summer, the pond will stay inundated for a longer period of time. The pond will not dry up as quickly in the spring as it has in the past so it can support development.

✓ **Vegetation Removal –** partial removal of overgrowth was part of the solution to create ideal habitat conditions. Emergent vegetation, along with surrounding vegetation, was strategically removed or thinned so that it does not choke off the pond, allowing the pond to reach ideal temperatures for larvae development. Too much emergent vegetation



CA Red-Legged Frog

**Restoring Ponds for the Frogs**

The California red-legged frog (*Rana draytonii*) was a once-abundant species that is now threatened. Their decline is due to environmental stressors, including habitat loss, introduction of the invasive American Bullfrog, and climate change.

To reverse these negative trends, biologists restored pre-existing frog habitat by removing excess vegetation and clearing debris. This helped support red-legged frogs to live, reproduce and succeed.

**Acknowledgments:**  
This restoration project was funded by the Regional Parks Foundation, Alameda County Fish and Wildlife Commission, and the California Department of Fish and Wildlife.

**Figure 3.** California Red-Legged Frog egg mass at New Pond Wildlife Area.  
Photo: D. Riensche

**Figure 2.** Pond restoration efforts using an excavator and Loader.  
Photo: D. Riensche

**Draft Interpretive Panel for the Pond**

prevents the surface water from reaching suitable temperatures for larvae development (Reis, 1999)(Norman Scott, pers. comm.).

- ✓ **Strategic planting** - native vegetation was recycled and strategically planted to improve wildlife habitat and public viewing.

The project was initially scheduled for 2020 but postponed one year because of the COVID19 pandemic. The restoration team completed the work on October 19, 2021. Before the project started, staff biologists collected and relocated any native vertebrate species to the closest pond. With the restoration complete, Doc Quack will continue to monitor the site and strategically plant vegetation to compliment the team's work to improve wildlife habitat and public viewing.

Funds from the Alameda County Game Commission covered the cost of materials and supplies, construction equipment rentals, permitting, and a small amount supported the wildlife volunteer program and provided things such as refreshments and patches for volunteers.



Site Before Restoration Work



\*Site After Restoration Work

\*Note the increased depth, built-up and repaired embankment, and new spillway at the bottom of the picture

### Project Site and Co-benefits

Pleasanton Ridge Regional Park is located north of the town of Sunol and west of the city of Pleasanton in Alameda County. This 3,201-acre wilderness parkland provides valuable wildlife habitat. In addition to improving habitat conditions for the Red-Legged Frog, the work also improved conditions for the state threatened California Tiger Salamander. During the restoration work, the team also spotted 45 bird species using the aquatic environment. Including several species of sparrows, hawks, swallows, and Jays, as well as birds such as Golden Eagles, California Towhees, and Anna's Hummingbirds to name a few. These birds will also benefit from the restored conditions at the Pond.