

## **RODENT ABATEMENT PROGRAM AMERICAN RIVER FLOOD CONTROL DISTRICT**

The American River Flood Control District (ARFCD) uses integrated pest management techniques for the Rodent Abatement Program, specifically for the California Ground Squirrel *Otospermophilus beecheyi* and *Otospermophilus douglasii* with no distinctions being made between species.

We are seeing squirrel activity throughout the year, with no hibernation period(s) here in Northern California. Squirrels will remain in burrows during the wettest and hottest time periods and ride out rough weather. They still only breed once per year and ARFCD is experiencing a mating season of March thru June. Babies will remain in burrows into July, as they remain in burrows for six weeks, and in six months they are the size of adults.

Understanding the life cycle is critical to correctly timing the most efficient control methods.

Throughout the entire year ARFCD staff utilize the Giant Destroyer The Super Gasser. This 1.75oz gas cartridge is made for all burrowers – moles voles gophers and squirrels. Because squirrels are significantly larger than a mole two or more cartridges will be dropped into a single burrow opening. No special certifications are required for use by staff and we do report usage to Sacramento County Department of Agriculture not as a requirement but for tracking quantities. Even while performing other duties, if a fresh burrow is spotted on the levee prism, staff will drop gas cartridges into holes, immediately plug the opening with a burlap sand bag and cover the hole with dirt, leaving a small ear of the sandbag exposed so the opening can be later grouted. Staff will remain on site looking for other exit holes revealed by escaping gasses. It is not rare for a burrow complex to have multiple exit holes. During the hot dry summer months only staff utilizing the herbicide spraying vehicles will make gas cartridge applications. Potable water is in the spray tank and used to wet the area to both seal in gasses and prevent grass fires. All Staff track new burrows with GPS on company issued iPhones, so other staff members in other District trucks send real time locations to those carrying water. It is vital to remain diligent and look for new holes throughout the entire year.

**Grouting:** after the conclusion of mowing season in the month of July staff immediately transition to grouting. Grass is at its lowest heights and burrows are easily spotted. Our local manufactured trailered grout plant uses Type I/II Portland Cement with added Bentonite for great flowability. Slick Willie 2 pump primer is also added to keep the grout plant maintained. The cement mixture flows like water thru 2” fabric hoses from the grout plant into the holes. Water is fed directly from the District’s 1000gallon water truck used as the towing vehicle. While it is ideal to complete grouting operations in July and interrupt the squirrel life cycle, the grout plant can be utilized September thru November for freshly discovered holes.

**Baiting:** Is the least effective technique but used along neighbor fencing where we cannot drop gas cartridges or grout for fears of spilling into neighbor yards, or where an infestation is because of an abundance of food supply and/or vegetation cover. District bait stations are properly marked as per Dept of Agriculture and hold one quart of Ground Squirrel Bait or Ramik Oats Neogen (active ingredient Diphacinone). We switch back and forth between the two types of bait to keep things fresh and interesting to the squirrels. Diphacinone is a first generation

anticoagulant that requires multiple feedings. Squirrels store the bait in their burrows and slowly sicken. They remain in the burrows not feeling well with their tummy aches until ultimately dying in the burrow.

There is an abundant food supply January thru June so baiting has limited effectiveness. July thru December baiting can be very successful. The first half of the year squirrels feed on green forage and then transition to seeds the second half of the year.

Maintenance practices: the mowing program March thru July discourages the green forage feedings. Nut and fruit bearing trees are discouraged. Broadleaf weeds are herbicidally maintained. Levee prism is kept clean of human garbage. Vegetation is managed as per State and USACE specifications.

This current program is lauded for its success by the current Levee State Inspector.