

DRAFT
Contra Costa County
DECISION DOCUMENTATION for GROUND SQUIRREL MANAGEMENT

Date: 5/15/2025 DRAFT

Department: Public Works (Airports, Maintenance Division, Facilities Services)

Location: Countywide

Introduction: Prior to 2025, the Agriculture Department provided internal contractual services to control ground squirrel issues on critical infrastructure managed by the Public Works Department primarily through the application of first-generation anticoagulant baits. Other treatments were considered and occasionally deployed by each operational division within Public Works, but the baiting program was the only consistent tactic used on a regular basis.

On January 1, 2025, Assembly Bill #2552 (AB 2552)ⁱ—also known as the Poison-Free Wildlife Act—took effect. That legislation prohibits the use of first-generation and second-generation anticoagulant rodenticides in California. There are some exceptions for public health, vector control, water supply facilities, and other situations. However, none of the exceptions apply to properties maintained by the County according to the current legislation and its interpretation.

This document aims to capture the decision-making process and promote a roadmap for the implementation of integrated efforts to protect infrastructure and keep our communities safe.

The problem species has been identified as the following:	<p>California Ground Squirrel (<i>Otospermophilus beecheyi</i>)</p> <p>Burrowing by ground squirrels can be very destructive, and they can cause severe erosion and loss of structural integrity. Ground squirrels are a problem in levees, in flood control facilities and canals, in earthen dams, on roads, on railroad berms, around foundations and retaining walls, and in landscaping where they chew on irrigation lines. In addition, California ground squirrels are known to be carriers of many transmissible diseases, including bubonic plague and tularemia.</p>
What mandates or standards relating to ground squirrel management apply?	<p><u>All operational divisions in the County</u> <u>Contra Costa County Administrative Bulletin #542</u></p> <p>“The County will provide pest management in and on County maintained properties and facilities using integrated pest management (IPM). The purpose of this policy is to promote the combined use of physical, cultural, biological, and chemical control methods to effectively manage pests with minimal risk to humans and the environment.”</p> <p><u>Airports Division</u> (Airport infield surfaces, runway safety areas, taxiway safety areas, grazing areas, habitat management lands, etc. at Buchanan Field & Byron Airports):</p> <p>Section 9.2.b of the Federal Aviation Administration (FAA) <u>Wildlife Hazard Management at Airports</u>ⁱ describes habitat modification and exclusion practices.</p> <p>The FAA has requirements for the safety areas of Part 139ⁱⁱⁱ airports like Buchanan Field to be smooth, free of ruts and other obstructions, and able to support aircraft that leave the paved surfaces. Caltrans also has similar requirements for general aviation airports such as Byron Airport. Additionally, ground squirrels are an attractant for other species such as coyotes or hawks that could potentially cause catastrophic consequences for airplanes.</p> <p><u>Public Works Maintenance Division</u> (dams, levees, creeks, basins, roads, bridges, flood control structures, retaining walls):</p> <p>(Additional information needed regarding mandates or standards from U.S. Army Corps of Engineers (USACE), state agencies, or others as applicable)</p> <p><u>Public Works Facilities Services Division</u> (County buildings, communication towers, and landscapes/open space adjacent to facilities, within special district service areas, and in County-owned parks):</p> <p>No known formal standards apply, but burrow systems that undermine building foundations, paved areas, and other structures are not tolerated. Similarly, burrowing activity that creates trip hazards or other safety concerns in parks and other publicly accessible landscapes are prioritized for treatment controls.</p>

<p>What is the process for how sites are monitored for ground squirrel activity?</p>	<p><u>Airports Division:</u></p> <p>Airport Operations staff at both sites monitor ground squirrel activity. Abatement procedures are used whenever those activities enter safety areas and sometimes before when the timing is right for our control methods. Any population in the safety areas is the threshold, we cannot have any. Airport Safety Officers determine whether abatement is needed as part of their wildlife hazard management duties.</p> <p><u>Public Works Maintenance Division:</u></p> <p>Activity is monitored during levee inspections conducted in coordination with the U.S. Army Corps of Engineers (USACE). Monitoring for ground squirrel activity is critical component of evaluating levee integrity. These inspections are typically led by the USACE inspection team alongside local representatives such as Flood Control Crew Supervisor—who oversees site readiness and facilitates issue tracking. State inspectors annually monitor the structural integrity of each dam and they convey site-specific concerns. Other reports of rodent activity come from citizen calls, as well as Public Works and Agriculture Department staff.</p> <p><u>Public Works Facilities Services Division:</u></p> <p>Facility occupants typically alert the Division to ground squirrel concerns at County-owned buildings. The contracted structural pest control operator similarly reports any activity observed during routine service visits. For parks and special district landscapes, community members occasionally report applicable concerns. Special district service areas retain a contracted trapper for gophers and moles, but that does not include ground squirrels.</p>																																																																																																																																																																									
<p>Control Methods</p>	<p>This is not an attempt to consider all control methods available. The following identifies the many types of controls that have been reviewed and/or used by the County. It is not an exhaustive list. For more information on controls see http://www.groundsquirrelbmp.com/</p> <p>The County continues to investigate and review new control methods as they become available.</p>																																																																																																																																																																									
<p>Timing and Efficacy of Management Methods</p>	<p>The following chart depicts the yearly activities of the California ground squirrel and times when baiting, trapping, fumigation, and other management practices are generally most effective.</p> <table><tr><th></th><th>JAN</th><th>FEB</th><th>MAR</th><th>APR</th><th>MAY</th><th>JUN</th><th>JUL</th><th>AUG</th><th>SEP</th><th>OCT</th><th>NOV</th><th>DEC</th></tr><tr><td>Adult activity</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Juvenile activity</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Diet</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Fumigation</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Toxic baits</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Trapping</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Burrow mod.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Shooting</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Habitat mod.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Biological control</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Exclusion</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Repellents</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <div><div></div> Active<div></div> Feeding<div></div> Management window<div></div> Hibernation/Methods ineffective</div> <p>Note: Ground squirrel activity may vary by region. This variance may affect management windows.</p> <p>Chart is from the University of California Statewide IPM Program's Pest Note for Ground Squirrels^{iv}</p>		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Adult activity													Juvenile activity													Diet													Fumigation													Toxic baits													Trapping													Burrow mod.													Shooting													Habitat mod.													Biological control													Exclusion													Repellents												
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considered?	<p>CONCLUSIONS:</p> <p>Airports Division:</p> <p>Maintenance Division:</p> <p>Facilities Services Division:</p> <p>Statement on efforts to prevent impacts on non-target species:</p>
Which physical controls were considered?	<p>Burrow modification:</p> <p><u>Cement and Bentonite Grout:</u></p> <p><u>The Burrow Blocker:</u></p> <p><u>Deep Ripping:</u></p> <p>Shooting: "Shooting squirrels with small caliber rifles can provide some ground squirrel control, but it is very time-consuming. Additionally, discharging a firearm is not legal in most municipalities."</p> <p>"The California Department of Fish and Wildlife (CDFW) has prohibited the use of lead projectiles in some firearms within the range of the California condor. Likewise, leaving lead projectiles behind (within animal carcasses) can be hazardous since it may result in their ingestion by scavengers. Currently, the use of lead ammunition is permitted for take of small nongame animals such as ground squirrels. However, effective July 1, 2019, nonlead ammunition will be required when taking any wildlife with a firearm anywhere in California."^v</p> <p>Trapping:</p> <p>Live Trapping:</p> <p>Kill trapping:</p> <p>Exclusion:</p> <p>CONCLUSIONS:</p> <p>Airports Division:</p> <p>Maintenance Division:</p> <p>Facilities Services Division:</p> <p>Statement on efforts to prevent impacts on non-target species:</p>
Which biological controls were considered?	<p>Biological controls available:</p> <p>CONCLUSIONS:</p> <p>Airports Division:</p> <p>Maintenance Division:</p> <p>Facilities Services Division:</p> <p>Statement on efforts to prevent impacts on non-target species:</p>
Which chemical controls were considered?	<p><u>Toxic Baits:</u></p> <p>Zinc Phosphide: A non-anticoagulant rodenticide that converts to phosphine gas when consumed by the target animal. Zinc phosphide is a restricted use material and is a hazard to the applicator. There are also endangered species concerns and restrictions to consider prior to use.</p> <p><u>Burrow fumigation methods:</u></p> <p>Gas cartridge: The cartridge (made from sodium nitrate, charcoal, and cardboard) releases carbon monoxide gas into the burrow system. This method is only effective when the soil moisture is high in either winter or spring. Gas cartridges are more effective when used prior to breeding or emergence of young. The timing, though, conflicts with other programs for which staff are needed such as the noxious weed program, the pesticide use enforcement program and the pest exclusion program. There are endangered species restrictions and concerns to consider prior to use.</p> <p>Aluminum phosphide: Aluminum phosphide reacts with moisture in the soil and in the atmosphere to produce phosphine gas. This fumigant is only effective when soil moisture is high and so has the same timing issues as above. Aluminum phosphide is a restricted use material and is a hazard to the applicator. There are also endangered species concerns and restrictions to</p>

	<p>consider prior to use.</p> <p>CO and CO₂: These fumigants require a CO or CO₂ generating device, which must be moved from burrow to burrow and site to site during treatment. These are most effective when soil moisture is high, and they have the same timing issues as gas cartridges and aluminum phosphide. Devices using CO₂ to kill ground squirrels are not yet registered through the Department of Pesticide Regulation.</p> <p>CONCLUSIONS:</p> <p>Airports Division:</p> <p>Maintenance Division:</p> <p>Facilities Services Division:</p> <p>Statement on efforts to prevent impacts on non-target species:</p>
Recommendations from the IPM Advisory Committee	<ul style="list-style-type: none"> • <i>A potential recommendation involving the allocation of resources to promote a year-round ground squirrel monitoring and treatment program was suggested at the April 17th meeting and requires further study.</i> •

ⁱ Available at https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202320240AB2552

ⁱⁱ https://www.faa.gov/airports/airport_safety/wildlife/resources/media/2005_FAA_Manual_complete.pdf

ⁱⁱⁱ FAA certification program for certain types of airports. More information available at the following link:
https://www.faa.gov/airports/airport_safety/part139_cert

^{iv} Retrieved from UCIPM Ground Squirrel Pest note at <https://ipm.ucanr.edu/home-and-landscape/ground-squirrel/pest-notes/#gsc.tab=0>

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