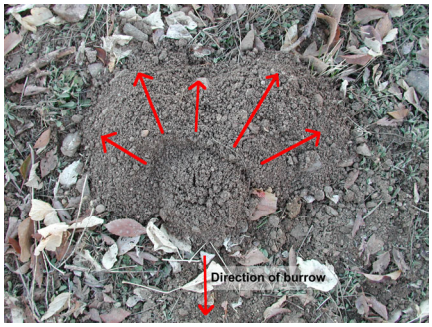
Managing Pocket Gophers

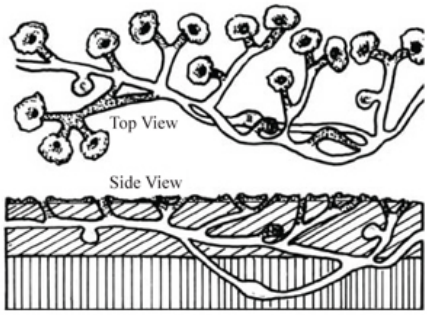
Pocket gophers are beneficial to wildland ecosystems because they transport beneficial soil microbes, are prey for other animals and they loosen soils, thereby increasing water infiltration. Pocket gophers can also be very destructive when they venture into gardens and landscapes. Their activity always increases during fall and spring. Young are also born in spring and, once they are a few months old, they leave their mother's burrow system and establish their own territories—often occupying previously constructed burrow systems. To successfully manage pocket gophers in the garden, orchard or landscape, you should learn about their behavior and quickly respond when they are approaching areas where damage could occur.

Some people mistakenly think they have moles. However, moles are not known to exist in Arizona. Gopher activity can be recognized by the fan-shaped mounds of loose soil they create when they push soil out of their burrow system.

The soil mound will also have a smaller plug of loose soil in the center or to one side of it marking where the burrow has been closed off. Fresh mounds indicate feeding or nesting activity. If the burrow is not plugged, then it could belong to a rock squirrel or be inhabited by another animal. Gopher burrow systems can be very extensive, especially in areas where they have been present for long periods.



Gopher mound showing direction of burrow and where soil was pushed out of the hole (arrows in a "fan" pattern); photo by Jeff Schalau, University of Arizona.



Drawing of a pocket gopher burrow system showing top view and side view. The main tunnel has lateral tunnels that terminate with above-ground gopher mounds. Food caches (C) and a nesting chamber (deepest chamber) are also shown. https://extensionpublications.unl.edu/assets/html/g1509/build/g1509.htm

Wire-type body gripping gopher trap; photo by Jeff Schalau, University of Arizona.

Trapping

Pocket gophers are not protected under Arizona Law and may be controlled freely on private property. Trapping is the most effective gopher control strategy for home gardeners. A minimum of two traps are needed. The body gripping traps are very effective and often preferred by experienced gopher "hunters". However, there are several other designs available. The two traps should have a two foot piece of baling wire tied to each of them and both connected to a single wooden or steel stake. A steel probe works well to help locate the burrows. This can be a ¼ inch steel rod with a 90 degree bend in it to create a handle. Practice setting the traps and safely triggering them to become familiar with their operation.

When excavating new areas, the gopher will "plug" its burrow when finished with excavation. When it is actively working, the burrow will be "open" and no plug will be visible. If the hole is open, you may place a trap in the open hole. If a gopher is actively working in this area, you will often trap it within 1/2 hour. Many prefer "cinch" type traps for trapping in open holes. If soil is pushed to close the hole, then resort to the two trap method described below.

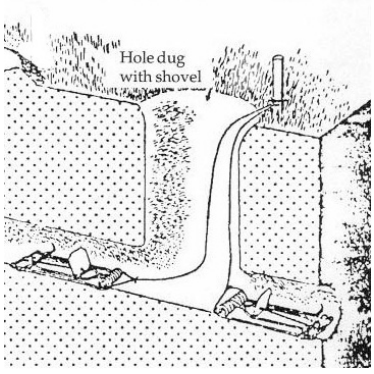


Diagram showing the main burrow tunnel and where traps should be placed before backfilling.

Once you are comfortable setting the traps, use a spoon or trowel to clean out and expose each entrance of the exposed burrow. You may need to follow a single tunnel until it intersects with another. The two trap method relies on finding the main tunnel and setting a trap in both entrances. By setting traps in the main tunnel, you will have the greatest probability of trapping the gopher as it travels through the burrow system. Set your trap and carefully insert it all the way into one tunnel entrance while holding the trigger to prevent it from deploying. Do the same in the other tunnel. Cover the exposed tunnels completely so that air drafts are eliminated. Gophers often push soil into the trap if they detect air movement or light. After setting traps, kick over all fresh soil mounds in the area so that any new activity can be easily detected. Check your traps each day and reset them if you are not successful. If no new mounds are seen, you might leave the trap set for a second day.

If you successfully trap a gopher, wear gloves when disposing of the cacass. It can be buried in the burrow before backfilling, but if you have dogs, then you may consider bagging and discarding it. If you catch one gopher per burrow system, you have probably taken care of the problem for that localized area. Gophers are solitary except when they are breeding or nursing young. Continue to trap until you no longer see new mounds then do your best to obliterate existing tunnels to prevent re-colonization from adjacent areas. Over time, your trapping success rate should improve as you learn by trial and error. Try to also eliminate old burrows.

Other Management Methods

There are other methods of gopher control (toxicants, flooding, exclusion, natural enemies, habitat modification, weed control, etc.). These may also be employed in larger areas or in agricultural settings. Repellents and scaring devices are generally ineffective.

Exclusion is one strategy used to mitigate pocket gopher damage to young plants, raised beds, and small garden plots. Metal fencing material is sometimes buried around the perimeter of small garden spaces. Galvanized metal hardware cloth (1/4-inch or 1/2-inch) can be buried 18 inches deep around garden fences. Some gophers will dig deeper than this, but it will probably be dependable about 90% of the time. Gophers also travel above ground but are not likely to climb higher than one foot over a fence. Placing hardware cloth in the bottom of constructed raised beds is also very effective as long as the gophers cannot climb over the sides of the bed.

Hexagonal poultry wire is often used to create wire baskets that are installed at planting to protect the roots of young woody plants such as fruit trees. Poultry wire with the smallest openings (one-inch) should be used. There are some caveats with this approach. First, remember that gophers travel above ground and can simply walk over the fence if it does not extend above ground for a foot or so. Also, roots can easily grow beyond the cage and become vulnerable to gopher feeding. In addition, the wire could stunt the plant due to root girdling (disruption of secondary phloem under the bark) as the roots grow in diameter where they go through the wire basket. In many cases the wire will have started to disintegrate before serious root girdling occurs.

Flood irrigation, as is often used along the ditch systems of the Verde River and its tributaries, can also go far to discourage gopher colonization. Upon flooding, the gopher will flee its burrow system making it vulnerable to predators. In the flood irrigated areas of the Verde Valley, Great Blue Herons are common gopher predators. Flooding burrow systems with a garden hose is impractical except when the goal is to collapse or expose the burrow system.

Gaseous toxicants are variable in their effectiveness against pocket gophers. The small “gopher smoke bombs” are minimally effective. Connecting metal tubing to the exhaust pipe of an older vehicle or tractor may also have poor to marginal results. Gophers can sense air movement and easily wall off sections of the burrow to prevent the gas from reaching them. If experimenting with these methods, it is incumbent on the user to do it safely and not start a fire.

Tilling - A single burrow system may contain up to 200 yards of tunnels. Established burrow systems allow nearby gophers to easily repopulate a given area. Burrow systems can be obliterated by tilling or collapsing with water as noted above. For large areas, landowners may consider deep tilling a perimeter that can be monitored for gopher activity rather than trying to deep till the entire acreage.

Toxicants (poisons) and bait placement devices can be purchased from farm and forestry suppliers. For small properties, toxicants are not recommended using toxicants to manage pocket gophers. These toxicants can be inadvertently consumed by pets or other non-target animals or cause secondary poisoning to animals consuming a gopher that consumed a toxicant. For larger acreages, a landowner may want to consider toxicants as part of an integrated management program.

Repellents - Various repellents, commercially available as well as home remedies, are often considered for use because they seem more humane or pose a lower risk to non-target organisms. Human hair as a repellent is ineffective. Predator odors such as urine and feces may be somewhat effective, but will need to be constantly reapplied as they dissipate with time and as the burrow system becomes larger. Electronic devices, little windmills and other scare tactics have been proven to be ineffective. Plants such as gopher purge (*Euphorbia lathyrus*) and castor oil plant (*Ricinus communis*) have similarly proven ineffective.

Lastly, you may have heard about “home remedy” repellents from various non-research based publications and websites. These include: Juicy Fruit gum, Irish Spring soap, chocolate flavored Ex-Lax, and others. While these products are effective at their intended uses, they have not been shown to be effective as pocket gopher repellents.

Dead pocket gopher (*Thomomys* sp.) at Catalina State Park near Tucson, Arizona.

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Adapted from original Backyard Gardener publications by Jeff Schalau, Agent, Agriculture & Natural Resources, University of Arizona Cooperative Extension, Yavapai County