



Managing Rock Squirrels in Utah

Dr. Nicki Frey



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General Natural History

Rock squirrels can be distinguished from other ground squirrels by their larger size; their bodies are about 10.5 inches long, and their tails are roughly 8 inches long. Additionally, their fur is usually a dark brown to gray mottled with white spots (Marsh 1994).

Rock squirrels usually inhabit rocky terrain – which can include rock walls; additionally, they can adapt to human developments along the suburban interface. Rock squirrels typically eat a diverse diet of nuts, berries, and other fruit that they may find. In the spring, they also eat grass, forbs, and flowers.

Rock squirrels dig burrows for shelter from the elements and predators and for food storage. Where possible, the squirrels will use existing man-made structures to facilitate burrow development and shelter, such as a concrete pad or an old shed.



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Introduction

Rock squirrels (*Spermophilus variegatus*) are fairly common across Utah, living in areas with rocky habitats. They belong to the group of squirrels called “ground squirrels” because they live in burrows and holes in the ground, rather than in trees. Although they do not exist in large colonies like other ground squirrels, rock squirrels can still sometimes generate conflicts with homeowners and farmers alike. Most damage occurs when a few rock squirrels take residence in a homeowner’s back yard, and begin to forage on garden vegetables and fruit trees. There are several direct and indirect ways that private landowners can manage and reduce rock squirrels on their property. Once one understands the basic needs of rock squirrels, managing them can be quite simple.

Direct Methods of Management

Direct methods are those that control the rock squirrels present on a property, usually by lethal means. Successful direct methods include toxicants and fumigants, and lethal and non-lethal trapping. The direct method with the highest efficiency and lowest cost are poison baits, such as zinc phosphide (University of California, 2015). Zinc phosphide is a poison that is applied to bait, usually oats or a similar grain, and then distributed near the areas of squirrel activity. Zinc phosphide has a strong odor; pre-baiting with regular grain is usually necessary to get the squirrels to want to eat the bait. Zinc phosphide can be dangerous to domestic animals if they ingest it. Application of zinc phosphide requires an applicator's license (Marsh 1994). Fumigation involves inserting a poisonous gas into the burrows of squirrels. Most fumigants require an applicator's license. Additionally, fumigants can be dangerous to humans and pets, and are therefore not advisable for use around homes.



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Toxicants and fumigants are often only used when a very large population of rock squirrels is causing damage to property. This rarely happens. A more common method is to trap the offending animals using either live traps or squeeze traps that cause immediate mortality. Utah State University Extension (extension.usu.edu/wildlifeconflicts) can provide advice and assistance with trapping problem squirrels in most cases. Traps can be expensive to buy, but in many areas, you can borrow one or two from Utah Division of Wildlife Resources, USDA Wildlife Services, or USU Extension.

Indirect Methods of Management

Indirect methods of damage management are those that control the environment of the rock squirrel, such as modifying the habitat or excluding rock squirrels from a particular area.

If rock squirrels are only a problem to a small area, such as a backyard garden, exclusion is a cost effective method. The fence should be 4 feet tall, buried as deep as possible, and have a sheet metal border along the top. Fruit trees can be protected by placing a 4 foot band of sheet metal around the trunk of the tree (Boren & Wright, 2003). These methods are labor intensive, and therefore only practical for small, distinct areas.

Modifying the habitat for rock squirrels should be focused on removing the availability of burrows and dens. For example, large cracks in a rock wall can be an inviting place for a rock squirrel to begin building a burrow. Additionally, if a cement pad hovers above the ground in places, this could also be enticing to a rock squirrel. Both of these can be filled in with additional cement to exclude their use by rock squirrels. Be careful to ensure that the rock squirrel is not currently using these areas! A good time to fill in cracks and holes is in the fall, after the young have become independent and before cold weather sets in. One-way exits can be installed to ensure that rock squirrels exit a structure and do not come back in, prior to eliminating denning structures. Other common backyard attributes that are used by rock squirrels for cover include brush piles and scrap woodpiles. By removing these, you reduce the attractiveness of your yard to rock squirrels. Finally, remove extra food sources, such as pet food, from squirrel access.

Disease Transmission – Human Safety

Their smaller population densities keep rock squirrels from spreading diseases such as tularemia and plague, which are more associated with large animal populations. While instances of each disease are rare in Utah, the Center for Disease Control and Prevention recognizes rock squirrels as potential carriers of tularemia and plague. In the last 10 years, there have only been 30 reported cases of tularemia (<http://www.cdc.gov/tularemia/statistics/state.html>) and only 13 cases of human plague in 40 years

(<http://www.cdc.gov/plague/maps/>). Thus, disease transmission is a possibility, but not a reason to remove rock squirrels on your property.

While rock squirrels should not be feared as an imminent source of danger of disease, one should take precaution when handling squirrels and their carcasses. These two diseases are usually transmitted to humans via a fleabite from an infected flea. The fleas live on the ground squirrels and may transfer to humans when they are handling squirrels.

Some signs of sickness:

- An ulcer at the site of the fleabite. Usually accompanied by swollen glands.
- Coughing, chest pain and difficulty breathing.
- Sudden fever, headache, chills, and swollen lymph nodes.

Steps to prevent tularemia and plague include (CDC, 2015):

- Use of insect repellent.
- Wearing gloves when handling sick or dead animals.
- Avoiding mowing over dead animals, this can result in inhalation of airborne bacteria. Both airborne forms of tularemia and plague are severely hazardous.

Like all wildlife, rock squirrels play a part in our ecosystem. Usually, they are an undisturbing, and

perhaps an enjoyable, neighbor. Small steps can ensure a happy coexistence with rock squirrels, creating a healthy backyard ecosystem.

References

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