

## Managing Wildlife in the Wildland Urban Interface

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### Introduction

Most gardeners enjoy viewing wildlife. However, the joy of viewing can be overshadowed by damage caused by unwanted visitors. To understand individual wildlife species' habitat requirements and behavior is to live in harmony with them. This becomes increasingly important the closer you live to open space. The transition zone between a populated area with paved streets and houses and undeveloped open space is called the wildland/urban interface. These interface areas have the highest potential for wildlife conflict. This is especially true in areas of new construction. It is important to remember that the wildlife species were here first and we are newcomers.

### Wildlife

What is wildlife and what are the values we associate with it? Do we only include mammals, fish, and birds? Are arthropods and amphibians wildlife? After pondering this question, we may all have differing views on wildlife. Some points we may agree on are:

- Wildlife has intrinsic, social, cultural and economic values
- Wildlife is a major source of food and a vital part of cultures and economies
- Wildlife is an indicator of the health of that environment
- We all assume a stewardship responsibility for wildlife

### Attracting Wildlife and Creating Habitat

Habitat is defined by four essential elements: food, water, shelter (cover), and space. The foundations of habitat are the soil and vegetation type present on a site.

### Food

Food sources may include plant material (including roots, pollen, and nectar), insects, or other animals. If preferred food sources are not available but other habitat elements are optimal, then some species will look for new sources of food such as pet food, vegetable gardens, fruit trees, or landscape plants.

### Water

Just as we are attracted to cooling, relaxing environment that water creates, wildlife is also attracted. Water features (ponds, fountains, etc.) are increasingly popular with gardening enthusiasts. If you have a water feature in your

landscape, you can plan on furred and/or feathered visitors. The following are some precautions you should be aware of. If the water feature is deeper than 1 or 2 inches, you should provide a means for animals to escape if they fall in. This can be some gently sloping rocks, bricks, or a sturdy wooden ramp. Ponds with fish are also attractive to predators such as raccoons and blue herons. Deep ponds (2 feet) rocks and/or vegetation will provide fish with necessary cover to evade predators. Algae will grow in water features during warmer weather. Some chemicals are available to prevent algal growth. Before adding these chemicals, read the label so that you understand how they could affect wildlife drinking this water.

### Shelter

Shelter can be provided by vegetation, large rocks, standing dead trees, down logs, debris piles, wood piles, prickly pear cactus, dead yucca leaves, crawl spaces under houses, old cars, and broken appliances. Personal taste will determine which of these is most desirable for each individual's aesthetic values. You may unknowingly be providing habitat to undesirable species in that old washing machine out back. A mixture of evergreen and deciduous trees will provide birds with a combination of perches and cover during the winter months. Trees and shrubs that carry foliage to the ground provide shelter for rabbits and quail. Crawl spaces under homes are notoriously attractive to skunks, rock squirrels, woodrats, and raccoons. The especially like to climb behind shower stalls and bathtubs. I don't recommend encouraging or even allowing these animals to use crawl spaces as shelter.

### Space

Space is probably the most difficult habitat element to understand and definitely the most expensive to provide. Large animals such as elk and deer require a large area to range like a ranch. Woodrats have much smaller space requirements. However, they do range some distance at night. Birds can fly from one space to another, but if you want them to nest, the space must have specific traits that vary from species to species. Rock squirrels need below ground space as well as above ground shelter. Space that gophers prefer is loamy, somewhat deep soil with few rocks.

Some animals can be attracted fairly easily. Birds are a good example. Keep a feeder in a safe place, then fill it with high quality seed, suet, or fresh sugar water and you will have many visitors. Rather than having to remember to restock sugar water and clean the feeder, I prefer growing nectar producing flowers for hummingbirds. These include penstemon, Indian paintbrush, honeysuckle, skyrocket (Gilia), and columbine. If you buy cheap birdseed, they will pick through the milo kicking it out on the ground to find the sunflower seeds. This seed on the ground will attract javelina, rock squirrels, rats, mice, and other potentially undesirable visitors. If you do feed birds, be consistent and keep that feeder clean and filled. The Audubon Society web site has lots of information on feeding and landscaping to benefit birds. The web address is: [www.audubon.org](http://www.audubon.org).

Do not leave cat or other pet food out for raccoons, javelinias, and other wildlife species. This practice creates an unnatural increase in wildlife populations thereby causing an increase in nuisance wildlife activity. In addition, feeding causes them to become dependent on this food source making them lazy and unable to forage naturally for food, subsequently, these animals may become aggressive towards both people and pets. This dependency can cause normally secretive and shy wild animals to chase, harass, bite or attack both pets and humans while looking for a handout.

### **Nuisance Wildlife Control**

When wildlife species interfere with management objectives to a significant level, they are considered nuisance wildlife. At this point, the homeowner/land manager employs control measures. Integrated Pest Management (IPM) is considered the best approach.

### **Prevention is Long Term – Control is Short Term**

The steps of IPM are:

1. Correct identification of the pest species
2. Employ prevention options
3. Select a control method (population reduction if necessary)
4. Monitor for signs of recurrence
5. Modify strategy if needed

### **Damage Identification**

It is important to correctly identify the species of animals causing a particular damage problem. Many of nuisance wildlife species are nocturnal. Often the identification of an offending animal must be based on observations of tracks, droppings, trails, burrows, tooth marks and characteristic types of damage. An exception is birds, which are active in the daylight hours.

### **Legal Status**

Many mammals and bird species and certain reptiles, amphibians and fishes are protected by state and/or federal laws. However, some common pest species are

not protected and can be controlled, if they are causing damage. These animals may be controlled by any legal means, which meet the requirements and are authorized under Arizona Revised Statutes (ARS) Title 17, Section 239. In Arizona, these species include:

- Woodrats (Packrats)
- Norway rats
- House mice
- Ground squirrels
- Pocket gophers
- Rock doves (Pigeons)
- Starlings
- English sparrows (House sparrows)

**Depredation permits for state regulated** species may be obtained from the Arizona Game and Fish Department (AGFD). In addition to depredation permits, some species, both protected and non-protected, are subject to release regulations for live trapped animals.

### **Prevention Options**

- Habitat modification
- Exclusion
- Frightening
- Repellents

Habitat modification and exclusion are two very reliable prevention methods. Something as simple as feeding pets inside rather than outside or building a fence often remedies the situation. Frightening and repellents may also be employed, but many animals may habituate to these practices.

### **Control Measures**

- Trapping (lethal or live)
- Toxicants
- Fumigants
- Shooting
- Biological control

Lethal control methods are distasteful to many people, even gardeners. For this reason, live trapping is often used to “save” the offending animal. It can be effective. However, in many cases the animal is released too close to the trapping site and returns. Conversely, it is released in occupied territory of another individual of the same species and it competes for resources and territory in unfamiliar surroundings. Often, these relocated animals die a slow death from starvation or wounds inflicted by territorial battles.

When toxicants and/or other lethal means are employed, be mindful that non-target organisms (dogs, cats, birds, etc.) can be inadvertently affected. If there is any risk of secondary poisoning, do not use toxicants. Likewise, lethal traps should be placed in areas only accessible to pest species.

**Wildlife Damage Control Professionals**

Given time and equipment constraints, hiring a Wildlife Damage Control Professional may be the best solution for many situations. You will need to pay, but it may be the most cost effective solution in the long run. Names of licensed, trained professionals can be obtained by calling either AGFD or in the Yellow Pages under “Pest Control”.

**Web Sites with Wildlife Control Information**

[icwdm.org](http://icwdm.org) – Excellent resource from the University of Nebraska at Lincoln, some practices may not be legal in Arizona.

[www.berrymaninstitute.org](http://www.berrymaninstitute.org) - Another excellent resource from the Berryman Institute at Utah State University, again, some practices may not be legal in Arizona.

[ag.arizona.edu/pubs/garden/mg/](http://ag.arizona.edu/pubs/garden/mg/) - The Arizona Master Gardener Manual – Arizona specific resources.

[ag.arizona.edu/yavapai/anr/hort/gopher/experimentaldevice.html](http://ag.arizona.edu/yavapai/anr/hort/gopher/experimentaldevice.html) – An experimental Gopher Control Device that has shown some promise.

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**Table 1.** Common Wildlife Nuisance Species and Some Prevention/Control Strategies for Use After Habitat Modification and Attractant Removal.

Species	Viable Prevention/Control Alternatives
Pocket Gopher	Trapping, exclusion (hardware cloth or concrete to a 3 foot depth), fumigants, toxicants, repellents, resistant plants
Rock Squirrel	Trapping, fumigants, toxicants, eliminate habitat (rock and brush piles), exclusion, flooding
Woodrat (Packrat)	Exclusion (buildings), trapping, anticoagulants, obliterate dens
Cottontail Rabbit	Trapping, exclusion (fence 2 feet above ground and 1 foot below), repellents
Beaver	Exclusion (low electric or wire fences), hardware cloth barriers around trees
Skunk	Exclusion, remove attractant, live trap, ammonia/moth balls <b>Deodorizer Recipe:</b> get animal wet, mix 1 qt. 3% Hydrogen Peroxide, ¼ cup baking soda, 1 tsp dish detergent, work into coat, let sit for 5 minutes, rinse out
Raccoon	Exclusion, remove attractant, live trap
Javelina	Fencing (minimum 2 ½ - 3 feet tall and sturdy), electric fence, remove attractant
Deer and Elk	Exclusion (sturdy 8-10 foot fences), repellents and frightening are marginally effective