

Charles Gerba



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Watershed Stewards Program. Additionally, as part of the Extension community, one of the Water Quality Program's goals is to increase water reuse education throughout communities in Arizona. Currently, we are developing interactive programs to engage the public and inform them about the water that is being produced and recycled in various Arizona communities. Our goal is to increase awareness of water issues here in Arizona and promote sustainability through the use of recycled water.

### Resources

Information on gray water reuse can be found on the ADEQ brochure at <http://www.azdeq.gov/envirom/water/permits/download/graybro.pdf>

Gray water guidelines can be found through the Water Casa publication at [http://www.watercasa.org/publications/Graywater\\_Guidelines.pdf](http://www.watercasa.org/publications/Graywater_Guidelines.pdf)

Common gray water questions are answered in the University of Arizona Cooperative Extension Water Wise website at [www.ag.arizona.edu/cochise/waterwise](http://www.ag.arizona.edu/cochise/waterwise) as well as a gray water brochure at [http://cals.arizona.edu/cochise/waterwise/pdfgraywater\\_4fold\\_10\\_25\\_07.pdf](http://cals.arizona.edu/cochise/waterwise/pdfgraywater_4fold_10_25_07.pdf)

For more information about gray water and the use of home detergents visit [http://cals.arizona.edu/cochise/waterwise/pdf/graywater\\_detergent.pdf](http://cals.arizona.edu/cochise/waterwise/pdf/graywater_detergent.pdf)

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Roll Guard Inc.



# Fencing for Wildlife

Cori Dolan, Program Coordinator and Bill Mannan, Ph.D., Professor, School of Natural Resources, University of Arizona

Fences can be an effective way to control animal movements, whether livestock or wildlife, and protect gardens and landscaping. Depending on your goal, fences can be built to completely exclude most animals from your property or be built in a way that allows access by some species while excluding others. When considering options for fencing designs, it is important to understand the potential impacts to the wildlife inhabiting the area. Where livestock and human safety are issues, fences can be designed to exclude most wild animals completely while keeping pets or livestock in. Where safety is not an issue, fences can be built that do not restrict the movement of wild animals and can benefit them by allowing movements along seasonal migration routes as well as daily movements to food, cover, and water.

### WILDLIFE-FRIENDLY FENCING

While fences that limit access and movement of wild animals may be necessary to protect crops and livestock, they can impede wildlife in a way that contributes to the decline of populations. If your property contains native habitats and the fences exclude wildlife, consequences include loss of food, resting areas and travel corridors. In addition, fences that restrict movement can trap animals inside the area making it difficult to remove them. Wildlife-friendly fencing can address at least two issues for areas that have wildlife fencing needs. First, it provides fencing which excludes wildlife without harm and second, it allows wildlife to move through an area without barriers or health and safety issues. An important guideline is to fence in only

the area you wish to protect, and avoid fencing in native habitat that the animals need. For example, pet areas, crops, gardens or special landscaping can be fenced differently than other areas.

Some animals, like pronghorn, go under fences rather than over them. For this reason, barbed wire fences can be dangerous because they can entangle, scratch, puncture, or kill animals crawling under them. Smooth wire is safer for wildlife. Smooth wire should be placed between 16 and 40 inches from the ground to prevent antelope, deer, and elk from catching their feet and hanging on the fence. The top two wires should be kept tight with a 12-inch gap between to keep animals from getting tangled. This will also reduce potential damage to the fence. Because deer will avoid fences that are not flat or regular, using a staggered fence or one with a sloping top is another option to keep deer out.

## FENCING TO KEEP WILDLIFE OUT

Although never guaranteed, fencing can be an effective way to keep some wildlife species from coming around your home. Each species that you are trying to keep out may require different fencing designs and types, and many can be used for multiple species with similar habits and ability. Fences or walls should be at least 4 feet tall (over 6 feet to be most effective) and buried at least 8 inches into the ground to be a long-term, effective barrier for animals such as javelina. To exclude deer and elk, fences or walls need to be 8 feet tall. Pronghorn prefer to go under fences so in cases where you need to exclude pronghorn, a smooth wire fence with a bottom wire that is less than 12 inches from the ground will keep them out without harming them.

In cases where solid fencing is too expensive or unsuitable for an area because of rocky terrain or homeowner agreements, electric fencing is an effective substitute. Because the electric current is carried on a single strand of bare wire that is held away from the ground by insulators, birds that perch on the wire without touching the ground or another grounded object, such as a tree or fence post, do not receive a shock. After javelina or other animals have touched the fencing a few times, they learn to avoid the area. In many cases this is even true after the fence is unplugged. Electric fencing, which can generally use fewer wires than traditional wire fences, is an inexpensive way to deter wildlife from entering gardens and other important areas around a home. Electric fences are simple to install and are not visually obtrusive to the landscape. These fences have proven successful for decades on farms and ranches to control livestock and wildlife. Check your local city, county or homeowner association ordinances for regulations regarding electric fencing in your area.

Another option for exclusionary fencing is coyote rollers (photo page 12). Coyote rollers are spinning attachments that sit on top of fences to prevent animals from getting a grip on the top of the fence. Coyote rollers are effective at keeping coyotes and predators out of your yard while keeping dogs and cats in.

## TIPS FOR RESPONSIBLE FENCING

Fences keep animals off roads and out of crops and can be a great addition to your landscape. When installing a new fence, it is important to begin by surveying your property lines and installing a legal fence. This will not only keep you within legal guidelines but will also maintain good neighbor relations. Some local ordinances may

require permits, prohibit fence chargers, and specify fence types, heights, and setbacks next to roadways, railways, and between neighbors. Contact your local building official for more information.

The Natural Resource Conservation Service (NRCS) offers a federal cost share program that can help you with fencing issues like design, placement and use that aid in conservation of ecosystems. The NRCS can help you decide what fencing is best by considering topography, soil properties, safety, livestock management, wildlife movement, erosion problems, flooding potential, and stream crossings. If federal cost share funds are used to install fences, the fences must be maintained and/or repaired to meet the intended use. Contact a NRCS office or visit the website at <http://www.az.nrcs.usda.gov> for more information on the federal cost share program for fencing.

To ensure that you are being responsible when it comes to fencing, be sure to:

- Locate underground and overhead utilities before installing a fence to make sure there are no gas, water, or electric lines where you plan to dig postholes.
- Never install electric fences under power lines. Notify neighbors, visitors, and small children about electric fences and instruct others on disconnecting the energizer in an emergency.
- Post warning signs on electric boundary fences as required by law.
- Regularly inspect fences as part of an ongoing maintenance program, especially after storm events to insure the continued proper function of the fence.

Wherever possible, locate and design fences that allow wildlife movement without injury. Arizona is designated an "open range" state, which means the property owner is responsible for fencing neighboring livestock out. Using this and other information on fencing placement and design, you can make sure that your fences help achieve your goals while not becoming a barrier to wildlife.

## For More Information on Fencing

Arizona Natural Resource Conservation Service, Fencing Standards <http://www.az.nrcs.usda.gov/>

Arizona Game and Fish Department, Javelina and Electric Fences  
Contact your local AGFD office for copies

How to Create Wildlife Friendly Fencing  
[www.huntingandfishingjournal.org/MissoulaElkHerds/PDFs/Fence-WildlifeFriendlyFencing.pdf](http://www.huntingandfishingjournal.org/MissoulaElkHerds/PDFs/Fence-WildlifeFriendlyFencing.pdf)

