

A Landowner's Guide



Fencing and other solutions for protecting and promoting natural resources and wildlife

Fences are an increasing concern for conservation efforts in regions such as Sonoma County where the human population is growing in rural or formerly undeveloped areas. Fences that prevent wildlife from moving as they need to—not all fences do this—contribute to habitat fragmentation. Through the years fences have been built without realizing the effect on local wildlife. As fences continue to be erected, the remaining area of functionally connected wildlife habitat dwindles. A landscape with smaller, isolated pockets of habitat has a lower capacity to support wildlife because of the following effects:

- loss of access to food and water
- injury or death by entrapment or hanging
- genetic isolation of animal populations
- increased vulnerability to events like wildfire, disease, and drought
- potential extinction of local populations

Sonoma County
Agricultural Preservation & Open Space District
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Thank you to the Sonoma Ecology Center for their help in drafting these fencing guidelines.

Create a Plan

Properly designed fences enable wildlife to use, or move through, an area with limited impediment. A plan should be created prior to the construction or replacement of any type of barrier intended to prevent escape or intrusion or to mark a boundary. Certain questions should be asked to prevent unnecessary damage to wildlife: Do I need a fence at all? How much area really needs to be fenced? How can I meet my needs with the least impact on habitat connectivity? How can I arrange what I want into the least amount of land?

Purpose of Fences

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- To mark a property boundary
 - To prevent vehicles or people from entering an area
 - To contain livestock
 - To keep certain wildlife (mainly deer and rabbits) away from crops, landscaping, and gardens
 - To keep predators away from vulnerable livestock

Fencing Solutions: Protect Wildlife and Natural Resources

- Only fence the smallest area necessary to protect gardens, house pets, children, crops, or agricultural facilities from wildlife. No wildlife-excluding fence should be constructed that contains natural habitat.

- Locate wildlife-blocking fence at least 50 feet from the riparian forest canopy or 150-200 feet from the stream bank top, whichever is greater.

- Any fencing design should exclude vehicles, livestock, heavy equipment, herbicide and pesticide use, and other damaging elements from sensitive natural areas such as wetlands and populations of rare plants or animals. A setback of 100 feet is a minimum for protecting these natural resources.

- Fencing should be visible to wildlife to prevent animals from colliding with it. A new fence must be flagged to protect both the fencing and animals until wildlife becomes accustomed to it.

- Locate fences 300 feet back from public roads to minimize potentially lethal animal-vehicle collisions, and animal-fence collisions.

Another Consideration

Fencing materials have a finite lifetime. When materials need replacement and maintenance, this is a logical time to reconsider the layout and design of existing fences in light of the property owner's needs. In many cases, a more wildlife friendly fencing design can be found that will meet the owner's needs.

Guidelines for Property Protection

Most Wildlife Friendly Options

To mark a property boundary
boundary markers
bollards
living fence
wildlife friendly fence

To prevent vehicles from entering an area

bollards
living fence
wildlife friendly fence

To contain livestock that do not need protection from predators

wildlife friendly fence
temporary fence
rental goats

To keep herbivorous wildlife away from crops, landscaping, gardens

Areas under 1 acre
temporary fence
chemical deterrents
fishing line
mesh or netting
herbivore-proof fence

Small or large area
staggered picket fence
angled, or double row fence
electric tape or braid
woven wire/chain link "deer fence"
dogs with underground electric fence

To keep predators away from vulnerable livestock

dogs or other guard animals
anti-predator fence
electric fence

To keep people from entering an area

poison oak barrier
anti-personnel fence

Least Wildlife Friendly Options

Fencing Solutions

This brochure is geared mainly towards properties over which the District holds conservation easements protecting natural resources, scenic resources, or recreation values. On these properties, the District will base its review of requests for fencing on the Permitted and Prohibited Uses included in the conservation easement. The District is happy to work with the landowner in deciding what type of fencing is appropriate. In certain instances, the landowner may be required to submit plans and descriptions of the fencing prior to District approval. In general, the District will approve appropriate fencing for the purposes listed in this brochure.

On properties with active agricultural operations, such as a dairy or cattle grazing, the standard District agricultural easement allows for the construction and maintenance of fencing necessary for permitted agricultural uses.

Listed below are descriptions and specifications for some of the fencing alternatives listed in this brochure.

Bollards



Bollards or barrier posts: Bollards and barrier posts are an effective, eye catching way to control off-road vehicle traffic.

Barrier chain fence: A barrier chain connecting bollards is an aesthetic solution typically used for dissuading vehicular and pedestrian use.

Wildlife Friendly Fences

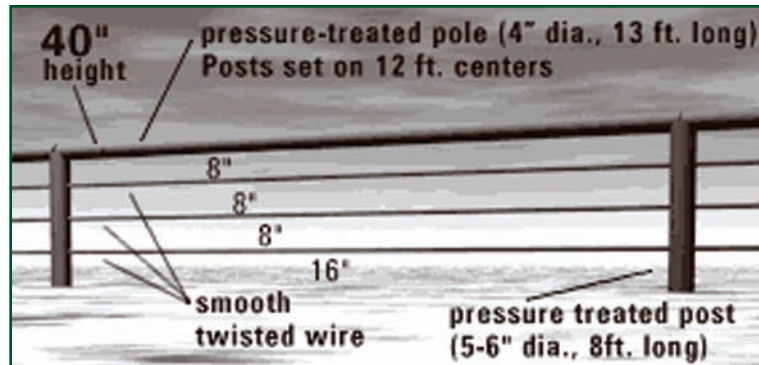
Wildlife-friendly fences enable virtually all wild animals to move through an area without harm and with minimal impediment. To achieve this permeability, the fence should have the following characteristics:

- Fences should be less than 40 inches high, unless intended to exclude deer or people. For some horses, the height may need to be raised to 6 feet to prevent the horses from leaning on or jumping over the fence.

- Top the fence with a wooden rail, mesh, or chain link instead of wire. This prevents animals from lethally entangling their legs in the top wires of a fence, and prevents birds from colliding with the wire, which is difficult for them to see. If this is not possible, leave at least 12 inches between the top two wires.

- The fence should be at least 16 inches off the ground. For small stock such as sheep or goats where predation is not a concern, lower the lowest wire to 10 inches from the ground.

- All wire should be smooth, that is, not barbed. If this is not possible, the bottom and top wires should be smooth.



Jackson Hole Wildlife Foundation

Rental Goats



Fire reduction is a great concern for some landowners. Grazing an area with horses or cattle may reduce the hazard, but the impact to the land may be severe over time. The land must be fenced to contain the livestock and damaging erosion may take place. An alternative is to utilize rented goats. Several goats can clear an acre a day with the use of a herder and dog(s) along with a portable fence enclosure moving the herd through the property.

Goats should be excluded from sensitive natural areas such as wetlands, streams, streamside or riparian areas, and populations of rare plants or animals. A setback of

100 feet is a minimum for protecting these natural resources.

Deer Deterrents

Natural Solutions

Deer will almost always stay away from plants that offend two or more senses. Thus, if a plant not only tastes bad, but also smells bad, deer will stay away from it and the general area it is planted in. Some of the most effective natural deer deterrents are liquids that can be sprayed onto vulnerable plants: hot pepper wax, garlic oil, predator urine, fragrant soaps and home brews. Hot pepper wax works on the sense of taste, and the others offend the sense of smell. Deer do not stay in an area where there is the smell of urine from natural predators, such as the mountain lion or coyote. Combining hot pepper wax, predator urine and garlic or a fragrant soap serve as a highly effective mix. These types of deterrents give best results for small gardens. Depending on the deterrent, the ingredients must be reapplied every two to four weeks.

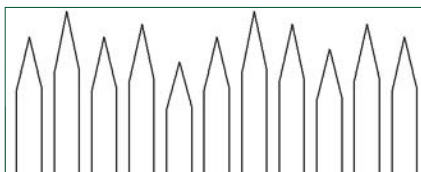
You can also plant poisonous plants that deer will not eat. Frequently plants give animals warnings that they are poisonous by an unusual color, or an unappetizing smell or taste. For example, the deep purple-black color of the fruit of nightshade (*Solanum spp.*) serves as a warning to animals.

If deer encounter a plant that is new to them, and it is offensive, they will often not come back to it. For this reason it is important to make new plantings as undesirable as possible by using deer deterrents for the first few weeks the plant is in the garden, especially if the plant is not native to the area.



It should be noted that in severe drought conditions, deer will eat almost any type of vegetation, sprayed or not.

Staggered Picket Fence



Deer have poor depth perception. A fence with irregular heights is an optical illusion for deer because they are unable to determine the overall height of the fence. Deer will typically not jump over a fence where height can not be determined. It does not need to be more than five feet high. A staggered picket fence can keep deer out of an area such as a flower bed.

Design

Many combinations of materials can be used that accomplish the desired purpose and that are also aesthetically pleasing.

-A fence with wooden or metal posts and a wooden top rail no more than 40 inches high, with rails or smooth wire strands below the top rail.

-Traditional split-rail fence.

-Traditional wire fencing for larger livestock such as cattle and horses.

-Recycled plastic rail fence: Recycled plastic fencing is more environmentally friendly than PVC/vinyl fencing, as it uses recycled milk jugs and other items containing high density polyethylene that have been cleaned, ground up and reformed after heating. Most manufacturers offer a limited lifetime guarantee.

Further Resources

Department of Fish and Game

Allan Buckmann

707-944-5537

<http://www.dfg.ca.gov>

Sonoma Ecology Center

Caitlin Cornwall

707-996-0712 x 105

<http://www.sonomaecologycenter.org>

Local Resource Conservation Districts provide resources to landowners:

Southern Sonoma County Resource

Conservation District

1301 Redwood Way, #170

Petaluma, CA 94954

Email: sscrd@ca.nacdn.net

<http://www.sonomamarinrcds.org/district-ssc/info.html>

Goldridge Resource

Conservation District

2020 Barlow Lane

Sebastopol, CA 95472

707-823-4662 phone

707-823-4608 fax

email: goldrdge@sonic.net

<http://www.sonomamarinrcds.org/district-gr/index.html>

Sotoyome Resource

Conservation District

970 Piner Road

Santa Rosa, CA

Phone (707)569-1448

Fax (707) 569-0434

<http://www.sonomamarinrcds.org/district-ssr/>

To find a watershed group in your area,
or for other technical resources try:

<http://ceres.ca.gov> or

<http://cwp.resources.ca.gov>