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Living With **Deer and Elk**

Provided by the ODFW Springfield Field Office

Deer and Elk Fences

Often the most effective long-term solution to deer or elk damage problems is exclusion of the animals with a fence. Many fence designs using many different materials have been used with success. Generally, with sturdier materials and better construction, less maintenance will be required and the fence will last longer. The following fence designs are recommended.

Woven Wire Deer Fence

This fence is recommended where a long-term solution to deer damage is desired. Its long life span and relatively low maintenance, if constructed properly and of good quality materials, offsets initial costs. This type of fence has been effective in reducing deer damage on small garden plots and large fields.

Total height of the fence on flat ground should be at least 76 inches. On sloping ground a few inches should be added to the uphill side of the enclosure. Adult deer in good condition can actually jump a 76 inch fence but generally do so only when chased. This height has been used by hundreds of gardeners with great success.

Use wooden posts of at least 9 1/2 feet in length and at least 5 inches in diameter at the top for corners. Wooden posts with 3 inch top diameter or 8 foot #133 studded "T" steel posts are good for line posts. If steel posts are used for line posts, every seventh post should be of wood. Wooden posts should be of good quality and, except yew wood, treated with preservative for at least the bottom three feet (do not use posts treated with copper-type wood preservatives). Wooden posts should be sunk approximately 2 1/2 feet in ground and set about 15 feet apart. The fence should be securely braced at the corners, angles, and at intervals along longer sections.

Woven wire should be used from the ground to at least 58 inches above the ground. Two widths of woven wire may need to be spliced to get 58 inch minimum woven wire height depending on what width rolls are available from your supplier. It is recommended that woven wire that has 14 1/2 gauge filler

wire and 11 gauge top & bottom wires with vertical stays no more than 6 inches apart be used. Use hog rings liberally to splice woven wire. The portion of the fence above 58 inches may be constructed of barbed wire strands spaced no more than 5 inches apart to achieve the overall height of 76 inches.

The bottom of the fence should be at ground level. Deer can go under gaps as small as 6 inches. Fill dips with gravel, rocks, logs, or other suitable material. Stretch the wire tight and firmly staple to posts with 1 1/2 inch staples at the rate of at least 10 staples per post.

Gates can be constructed in a number of ways and can be made of different materials as long as the height and "tightness" is maintained. Additional information on corner bracing, stretching wire, and other aspects of fence building can be obtained from suppliers of fencing materials.

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Electric Deer Fence (New Zealand Design)

This fence is easier and quicker to build than the 76 inch woven wire deer fence and is less expensive for fencing larger areas. It too has a long life span and relatively low maintenance, if constructed properly and of good quality materials, plus it is considered more esthetic by some. This fence is based on a design developed at Pennsylvania State University and its components, configuration, and construction differ from other electric fences in that it uses a high voltage, low impedance "New Zealand-style" energizer and close spacing of wires. It needs to be only 5 feet high as its success is based on the deer's habit of trying to slip between fence wires rather than jump the fence. Typically, after their first contact with a hot fence, deer will stay away from the fence and not attempt to jump it.

Total height of the fence should be at least 60 inches. Use wooden posts at least 6 inches in diameter and ten feet in length with approximately four feet buried in the ground for corner, brace and riser posts. All wooden posts, except yew wood, should be treated with wood preservative (do not use posts treated with copper-type wood preservatives). Line posts may be wood, steel, or fiberglass. Wood posts should be 8 feet long with 2 feet in the ground. Steel posts should be 133-T type post, 7 feet long with at least 12 inches in the ground. Fiberglass posts should be ultraviolet resistant and 7 feet long with at least 12 inches in the ground. The distance between line posts should not exceed 50 feet.

Fence wire should be 12 1/2 gauge hi-tensile class III galvanized wire, minimum of 170,000 psi. Six strands of wire should be used with 10 inch intervals between wires. The bottom wire should be 10 inches above the ground surface. Since deer can crawl under fences at dips in the ground surface, the 10 inch distance between the bottom wire and ground is important. This distance can be maintained by filling dips with gravel, rocks, logs, or other suitable fill material. All wires may be electrified, however, the fence should be constructed so wires two and four can be grounded when the earth becomes dry in the summer. Wire tension should be maintained at 250 pounds. Insulators should be high quality porcelain or ultraviolet resistant plastic. Gates can be constructed in a number of ways and can be made of different materials as long as they are "deer proof."

A "New Zealand-style" energizer is essential for successful operation of the fence. This energizer may be 220 volt, 110 volt, 12 volt battery or solar powered and should be UL approved. Outlet voltage should be high, at least 4,000 volts. Impedance should be low to minimize the possibility of shorting out in high leakage situations. The pulse rate should be short (1/30,000 of a second or less) to minimize fire hazards and the chance of tissue damage. The energizer should be grounded with an 8 foot ground rod and a lightning arrester placed between the fence and energizer.

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Electric Polywire/Tape Deer Fence

This fence is recommended for use where inexpensive, temporary reduction of deer damage is desired such as gardens or 1-2 year commercial crops. It is much easier to construct than the conventional 76 inch woven-wire fence and is considered less obtrusive by many. This energized fence needs to be only 5 feet high. While deer can easily jump over 5 feet, the success of this fence is based on the deer's habit of trying to slip between fence wires. Typically, after their first contact with a hot fence, deer will stay away from the fence and not attempt to jump it.

The height of the fence should be 5 feet. Corner posts on small garden plots may be steel #133-T type posts 7 feet long with at least 1 1/2 feet in the ground. Wooden corner posts are recommended for larger

enclosures. These should be at least 5 inches top diameter and sunk approximately 2 1/2 feet in the ground. Line posts may be either steel or fiberglass. If steel posts are used, be sure to attach energized wires to posts with high quality ultraviolet resistant plastic insulators. Use fiberglass stays between line posts. Line posts should be spaced about 30 feet apart on level terrain.

Six strands of poly wire or poly tape should be spaced at 10 inch intervals with the bottom strand 10 inches from the ground. Alternative between hot and ground wires starting with a hot bottom wire. Use only a "New Zealand style" energizer as the low amperage output of conventional energizers is ineffective on deer. A good ground is very important for satisfactory results, especially during the dry summer season. A 8 foot grounding rod is recommended. A good quality timer may be used in conjunction with the energizer if it is desirable to energize the fence only at night.

Gates may be constructed of wood or woven wire on a wooden frame (6 foot high) or they may be electric.

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Woven Wire Elk Fence

This fence is recommended where a long-term solution to elk damage is desired. Its long life span and relatively low maintenance, if constructed properly and of good quality materials, off sets initial costs. This type of fence has been effective in reducing deer damage on small garden and large fields.

Total height of the fence should be at least 84 inches. Use wooden posts of at least 10 feet in length and at least 5 inches in diameter at the top for corners. Wooden posts with 3 inch diameter or appropriate length #133 studded "T" steel posts are good for line posts. If steel posts are used for line posts, every seventh post should be of wood. Wooden posts should be of good quality and, except yew wood, treated with preservative for at least the bottom three feet (do not use posts treated with copper-type wood preservatives). Wooden posts should be sunk approximately 2 1/2 feet in the ground and set about 15 feet apart. The fence should be securely braced at the corners, angles, and at intervals along longer sections.

Woven wire fencing with at least 10 gauge top and bottom wires and 12 1/2 gauge filler wire should be used. The fence should be constructed of two 39 inch widths of woven wire with the bottom portion having stays no more than 6 inches apart and the top width having stays no more than 12 inches apart. Stretch the wire tight and firmly staple to posts with 1 1/2 inch staples at the rate of at least 12 staples per post. The two widths of woven wire should be secured together with hog rings at approximately 18 inch intervals. At least one strand of barbed wire should be placed above the woven wire to attain the height of 84 inches. The bottom of the fence should be at ground level. Fill dips with gravel, rocks, logs, or other suitable material.

Gates can be constructed in a number of ways and can be made of different materials as long as the height and "tightness" is maintained. Additional information on corner bracing, stretching wire, and other aspects of fence building can be obtained from suppliers of fencing materials.

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Electric Polywire/Tape Elk Fence

This is an experimental fence recommended for use where less expensive reduction of elk damage is desired. It is relatively portable, easy to install, and has proven effective in excluding elk from areas such as golf courses and pastures where seasonal or short-term protection is desired. It is easily removed for mowing or farming and can be moved to other locations as the need arises. This fence requires more maintenance and will not last as long as a woven wire elk fence.

Total height of the fence should be at least 80 inches. Use wooden posts of at least 10 feet in length and at least 5 inches in diameter at the top for corners. Wooden posts should be of good quality and, except yew wood, treated with preservative for at least the bottom three feet (do not use posts treated with copper-type wood preservatives). Wooden posts should be sunk approximately 2 1/2 feet in ground. Ten foot steel "T" #125 posts may be used as line posts and should be spaced at approximately 50 foot intervals. Two 1/2 inch X 8 foot fiberglass rods should be placed at equal distances between steel "T" posts. These rods should be sunk approximately 12 inches in the ground. Polytape should be installed on insulators approximately 30 inches, 55 inches, and 80 inches off the ground. The bottom two wires

should be energized, the top wire is only a visual deterrent to jumping.

Hi-tensile electric fence designs have also been used for elk with a good degree of success. The minimum height and wire spacing has not been established as not very many of these fences have been in place for long enough for a good test. A fence with 5 wires evenly spaced to 80 inches is believed to be adequate, but again, this has not been thoroughly tested.

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