

Alaska Department of Fish & Game
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**BIG GAME FENCES
FOR ALASKA**



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PRACTICAL BIG GAME FENCES FOR ALASKA

INTRODUCTION

Crop damage by game animals is common throughout the United States and Canada. Alaska is no exception. Moose have inflicted serious damage to crops in the Matanuska and Tanana valleys. Long-term control measures are needed to give effective relief from moose damage. Short-term "solutions" including noise, repellents and harassment have provided only limited relief.

In other states, permanent control of damage has been obtained by using various types of fences adapted to the particular animal causing the damage. Moose present additional problems due to their large size and agility; however, adaptations and variations of several fences should be successful in Alaska: one type has been tested here.

EXPERIMENTAL FENCE

Mr. Julian Fowler, a dairyman whose farm is located approximately 80 miles south of Fairbanks, had experienced serious crop damage each year for several years. He had reported 10 or more moose feeding each night in his crops. In order to obtain immediate relief from moose damage, Mr. Fowler proceeded to construct a fence similar in design to a deer fence developed by the University of California at the Hopland Agricultural Field Station. Due to the urgency of the situation, he chose a design which lent itself to quick construction, rather than the one which was considered to be most effective.

CONSTRUCTION

The experimental fence was constructed as shown in Figure 1.

Posts of 3 to 4 inch diameter local spruce were placed 2 rods (33 feet) apart and set to lean outward at an angle of 15 to 20 degrees. Originally one strand of barbed wire located 3 feet above the ground was placed on insulators and charged with a 110 volt, A.C. high line fence charger. Additional wires were later added above and below the original electrified strand. Yellow plastic surveyors' flagging was tied to all wires at approximately 5 to 6 foot intervals.

RESULTS

Some relief from moose was achieved after the installation

of the first wire; however, breakage was very high. After the installation of the second and third wire, breakage was reduced to a minimum and crop damage was virtually eliminated.

Figure 1.

Electrified barbed wire fence in use at Julian Fowler's farm 80 miles south of Fairbanks.



PROPOSED FENCES

BASIC CONSTRUCTION PRINCIPALS

The success achieved with the experimental fence demonstrates the practicality of permanent fences to protect valuable agricultural crops. A standard 5 strand barbed wire stock fence would probably serve to exclude most moose and minimize damage; however, by incorporating some of the features found effective in other game fences and the experimental fence, a highly efficient low-maintenance fence can be built.

Game fences normally cost more and are more difficult to construct than ordinary stock fences. The fences proposed below are designed to be as economical as possible.

The following principles pertain to all fences designed to exclude big game.

1. Fences should be constructed before crops become palatable. It has proven much easier to prevent crop damage before the animals have become accustomed to feeding on the crops than to exclude game animals from an area where they regularly forage.
2. Clearing all vegetation from an area 10 feet wide on the outside of the fence will help prevent the animals from unknowingly blundering into it. Streamers, tin can lids, etc. attached to the wires also serve to mark the fence and prevent the animals from charging it when they receive an electric shock. Extra marking devices will be necessary where the fence crosses established game trails.
3. Leaning the fence outward discourages the animals from jumping. Deer which can jump vertical fences 7 to 8 feet high and commonly jump 6 foot fences will not jump a 4 foot fence leaning outward at a 45° angle.
4. Spacing of posts is largely dependent on the type of soil. Posts can be spaced farther apart if stiffeners are used. Posts of large diameter can be set farther apart than small posts.

ELECTRIFIED BARBED WIRE FENCE

Construction

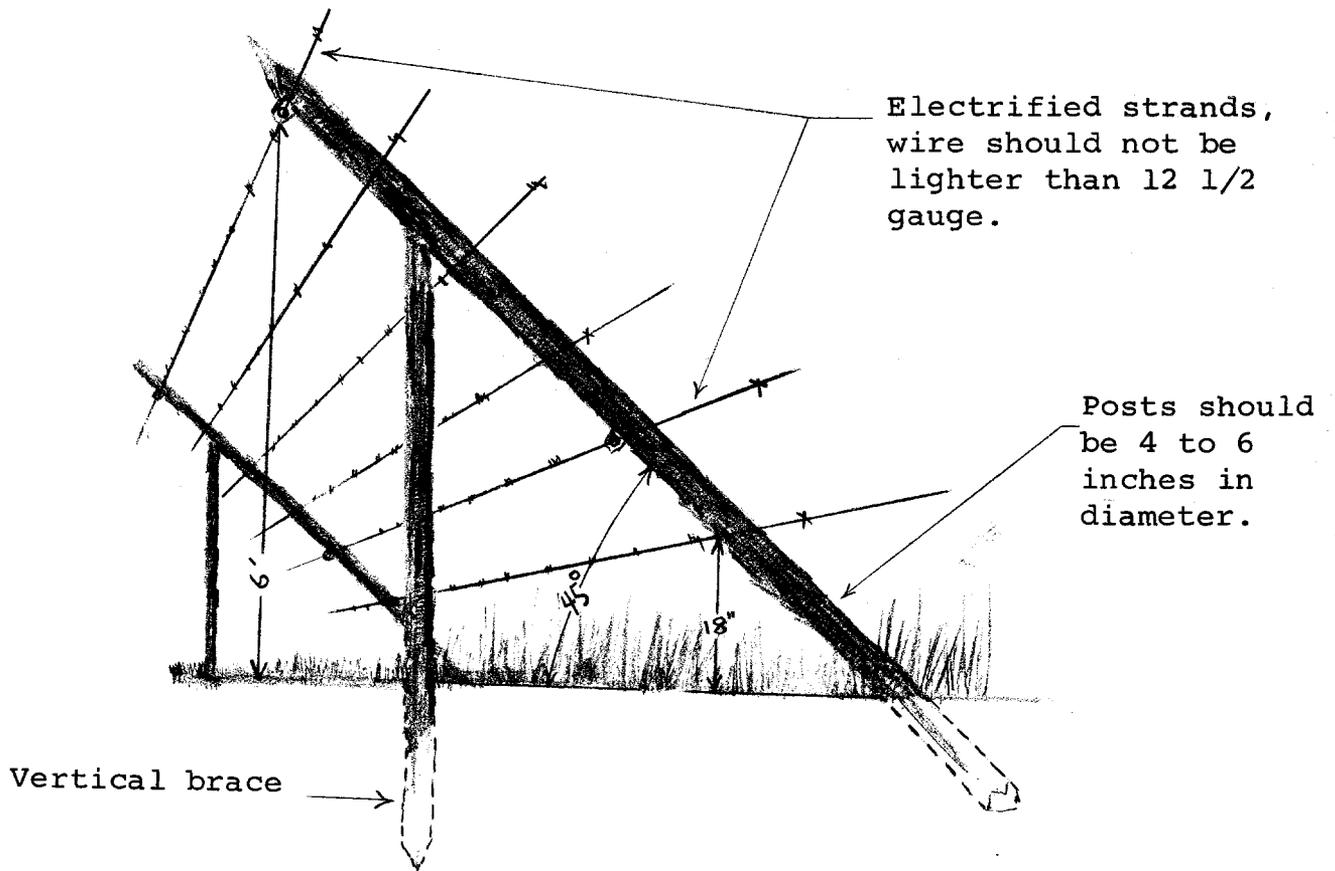
Posts should be set at about 16 foot intervals. Braces should be sturdy enough to prevent the posts from sagging. The placement of the barbed wire is very important to the successful operation of the fence. The bottom wire should be placed approximately 2 feet from the ground and the top wire should be at least 6 feet from the ground. If only one electrical wire is used then the electrified wire should be placed approximately 3 feet from the ground. The effectiveness of the fence can be increased by using more than one electrified wire. Best results would probably be obtained by electrifying the top wire and placing an additional electrified wire 3 feet from the ground on the vertical braces. Excellent results were obtained from the fence at the Julian Fowler farm which had only 3 strands of barbed wire. However, to reduce maintenance, it would be desirable to increase the total number of wires to 4 or 5. Flagging should be placed at 5 to 6 foot intervals on all wires.

Materials

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| Posts | Posts should be steel or 4 to 6 inch diameter wood. Leaning posts should be 10 feet long and the vertical brace post 6 to 8 feet long. |
| Barbed Wire | The barbed wire should be the heaviest gauge obtainable and 12 1/2 gauge is the lightest which should be used. Heavy gauge military surplus barbed wire is sometimes available and has proven to be of excellent quality. All of the barbed wire used should be of the 4 point rather than the 2 point variety. |
| Insulators | Porcelain insulators for the electrified wires have proven to be the most satisfactory. |
| Fence Charger | The fence charger should be of the electronic high-line type operating from 110 volt 60 cycle A.C. current. Fence chargers of the type which emit a very high voltage shock of low amperage have proven to be very satisfactory. |
| Flagging | Flagging of yellow plastic surveyors' tape, commonly obtainable at engineering supply stores, has been found very effective. |

ELECTRIFIED BARBED WIRE FENCE

Figure 2. A fence constructed of barbed wire as shown in this drawing should give total protection from moose and maintenance-free operation.



STOCK WIRE AND BARBED WIRE FENCE

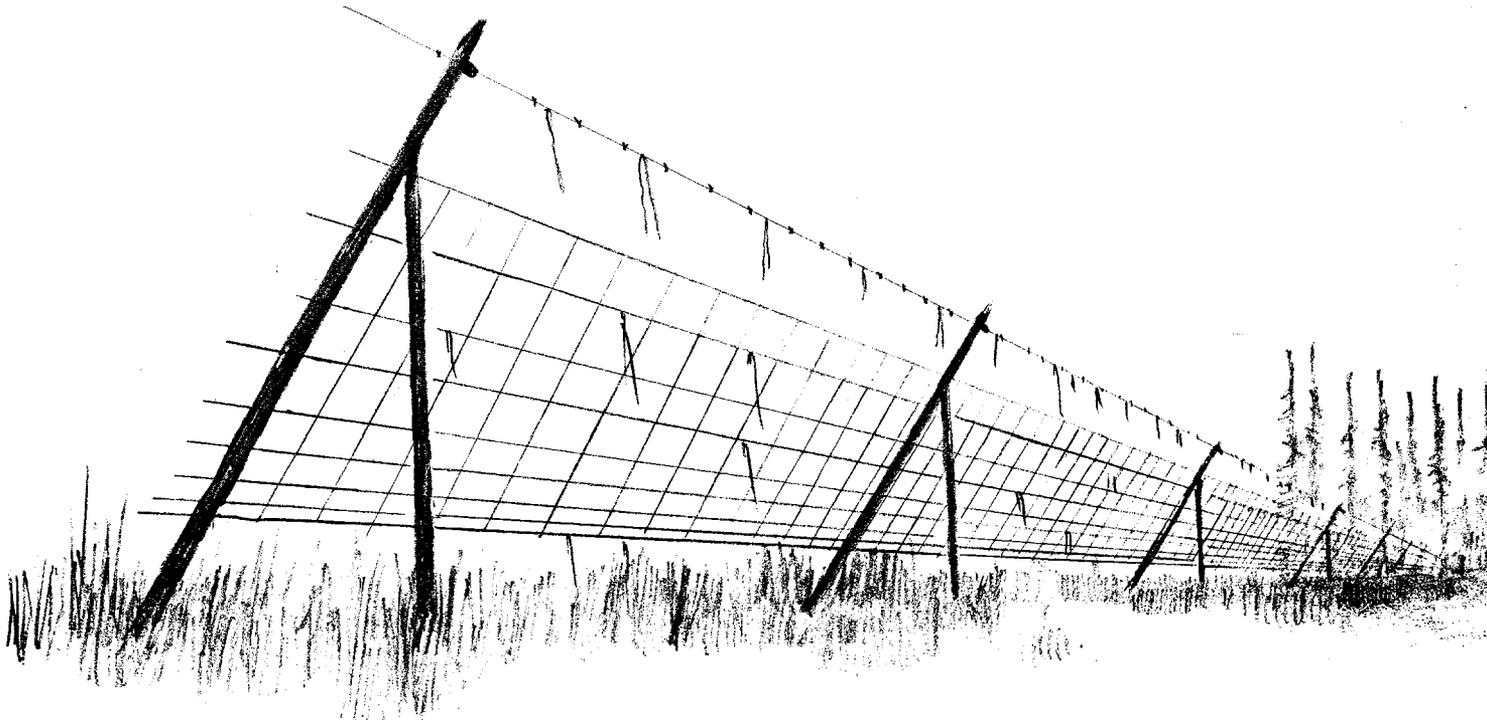
Construction

The placement and type of posts described under the barbed wire fence are satisfactory for the stock wire type fence. The bottom of the stock wire should be placed 1 1/2 to 2 feet from the ground and the barbed wire should be installed on porcelain insulators a minimum of 6 feet from the ground.

Materials

The materials used in the stock wire fence are the same as those used to construct the barbed wire fence, except that stock wire replaces several strands of the barbed wire. Heavy duty 6 inch mesh woven stock wire 39 inches wide should be used.

Figure 3. A combination stock wire and barbed wire fence.



COST OF MATERIALS

Labor costs will vary greatly depending on available equipment, terrain, consistency of the soil, and the availability of local trees for posts. Because of these variables, estimates of labor costs are impractical, particularly since most farm construction is done by the landowner, rather than by hired labor.

The material costs listed below can be reduced by purchasing and shipping in large quantities.

Barbed Wire Type

Five strand type with 2 wires electrified not including cost of posts or labor.

\$10.00 per 100 feet plus fence charger.

\$570.00 per mile including fence charger.

Stock Wire & Barbed Wire Type

Extra heavyweight 39" wide stock wire with one strand electrified barbed wire not including cost of posts or labor.

\$17.00 per 100 feet plus fence charger.

\$944.00 per mile including fence charger.

Medium weight 39" stock wire with one strand of electrified barbed wire not including cost of posts or labor.

\$11.00 per 100 feet plus fence charger.

\$620.00 per mile including fence charger.

The cost of steel fence posts FOB Seattle, Washington varies from \$1.00 to \$1.75 depending on the quality of the fence post and the number purchased. The number of fence posts used per mile of fence varies greatly depending on the type of post and nature of the soil. If steel posts are to be used, their cost must be added to the cost estimates given above.

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