

3D Fencing for Wildlife Control

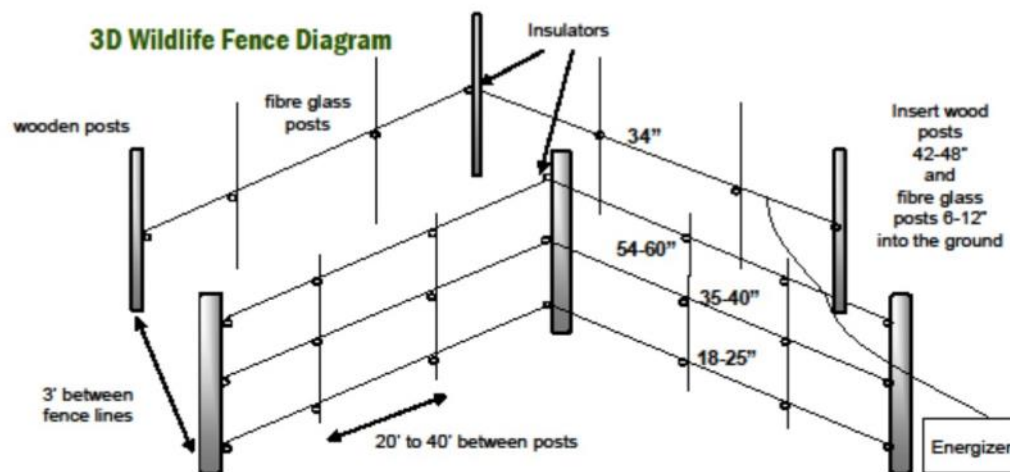


Wildlife damage and consumption of livestock feed can be a financial and stressful issue for producers in Saskatchewan. Herds of elk, deer and moose can move into an area and completely eradicate winter feed supplies, leaving producers scrambling to find feed for their livestock. As wildlife pressure becomes heavier in many areas of our watershed, local producers are looking for solutions to this ever-increasing problem.

One option for producers may be the construction of 3 Dimensional (3D) fences around feed supplies or hay yards. 3D fences are a fencing system that creates a barrier that has height, width and depth, thus creating a 3 dimensional effect. The eyes of ungulates including elk, deer and moose are located on the sides of their head. This positioning results in poor depth perception. The 3D fencing system creates a visual barrier for ungulates that will cause

them to approach the fence with a great deal of caution. The outer fence is electrified, so when the animals approach the fence for further inspection, and a sniff with their nose, they will receive a shock that will deter them from entering the fenced area.

3D fencing systems involve the construction of two fences that are 3 feet apart. The outer fence is usually a single strand, electric fence and the interior fence is usually a three strand fence that is either electric or barbed wire. The Peace River Forage Association of British Columbia began researching this type of fencing system in 2010, and a diagram of their suggested design is below. They have run several test sites in northern BC and have had success with 3D fencing as a wildlife deterrent. They continue to monitor the effectiveness of 3D fencing in their area and more information on their research can be found on-line at peaceforage.bc.ca.



Design diagram courtesy of Peace River Forage Association of British Columbia



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3D Fencing for Wildlife Control—Project Details

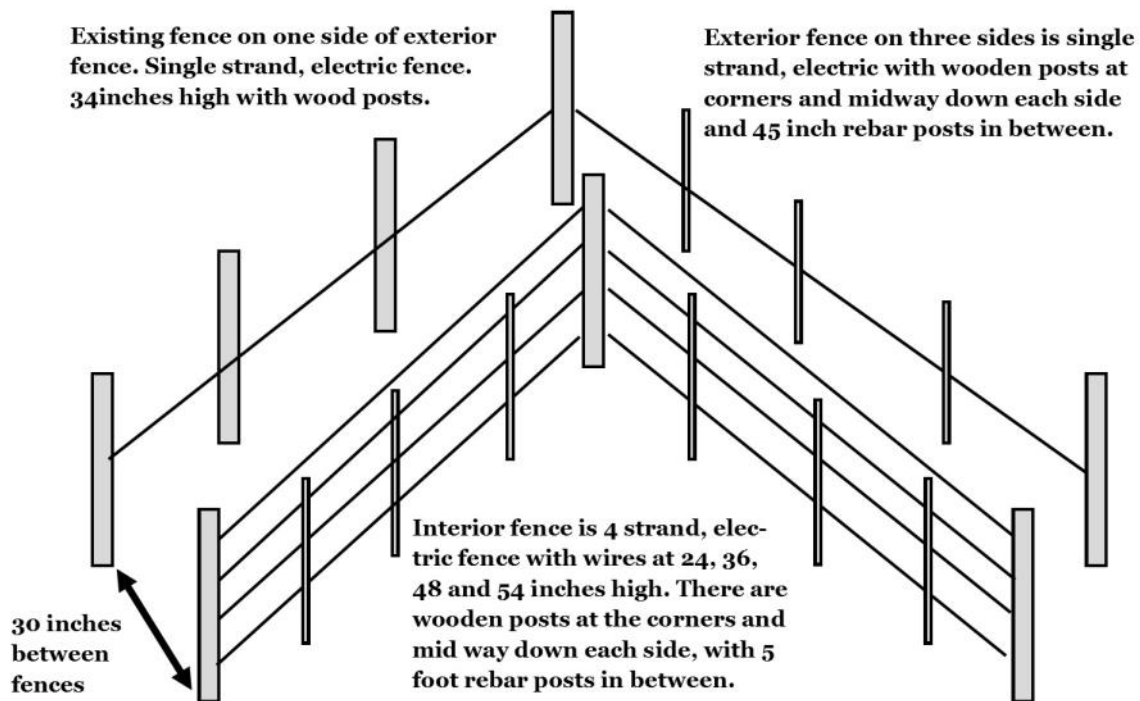
Morgan and Margaret Leigh own and operate a 300 head cattle farm in the RM of Pleasantdale near the Barrier River, straddling the Carrot River and Lake Winnipegosis Watersheds. The Leighs winter their cattle extensively; using bale grazing and swath grazing techniques to feed their livestock. However, over the last several years, they have noticed an increase in the number of elk in the area and an increase in the amount of feed that is being lost to the elk. In response to this increasing loss, the Leighs partnered with Saskatchewan Crop Insurance Corporation (SCIC), Saskatchewan Ministry of Agriculture and Carrot River Valley Watershed Association to develop a 3D fencing demonstration site on their farm.

The site was located on the SE 27-42-17 W2. The fence enclosed a feed storage area that is approximately 65 feet by 150 feet in size. The feed as being stored over winter to be used as spring feed for their cattle. There was no gate on this site because the producers had no need to enter the fenced area until spring, when they simply dropped the wire and removed the rebar posts to access the feed supply. There were 135 bales being stored at this site.

At this site, the 3D fencing system was based on the design created by the Peace River Forage Association of British Columbia, with some modifications to best fit these producers' needs and existing infrastructure. The west side of the exterior fence had an existing single strand, electric fence that was approximately 34 inches high. Using this portion of fence and the 32 Joule energizer that

was already powering this fence, reduced the costs and labour needed to construct the 3D fencing system. The remaining three sides of the exterior fence had treated wood fence posts at the corners and middle of each side, with 45 inch rebar posts in between. The interior fence was also made up of a combination of treated wood posts and 5 foot rebar posts; also with the corner posts and the middle post on each side being wood and the remainder of the posts being rebar. The interior fence was 4 strand, electric fence with the top wire being approximately 54 inches high. The top wire on the interior fence was only attached to the wooden posts because the rebar posts were not tall enough; therefore, there was some slight bowing in the top wire.

In total, the new construction that was required to install the 3D fence system at this site involved a total of 12 treated wood posts, 12 – 45 inch rebar posts, 17 – 5 foot rebar posts, 2–400m rolls of wire, and insulators. The producers chose to use rebar because of an existing supply on the farm, the flexibility to adjust the height of the wire by moving the insulators up or down as needed, and the rebar can easily be removed and utilized for another project in the spring. The wooden posts were put in the ground in October, with the rebar posts going in in November. The total amount of time and labour involved consisted of 2 hours of tractor and post pounder work, and 4 hours of labour to complete the fence.



3D Fencing for Wildlife Control—Project Outcome

The site was monitored from December 2014 until April 2015 with the use of trail cameras, as well as periodical inspections by CRVWA staff and the producer partners. In early March, the trail cameras captured the first footage of elk at the site. Visual inspections of the site on March 13 and 19, found evidence of elk at the site, specifically on the outside of the 3D fence on the east side of the bale stack. There was no evidence that any wildlife had crossed the 3D fence.

Continued visual inspections and trail camera imagery showed that elk remained in the area of the 3D fencing site until the first week of April. At this point, much of the snow in the area had melted and the elk herds had moved on to graze in other locations. There remained no evidence that any elk had crossed the 3D fence.

The weather did pose a challenge to this demonstration project. This winter saw above average temperatures and below average snowfall accumulations in the Carrot River Watershed, resulting in less wildlife pressure on livestock feed supplies than in previous years. Area producers have noted that, in previous years, herds of elk have moved into the area of the 3D fencing site in late December and early January. This year, herds of elk began being seen at and around the site at the end of February. The climate conditions allowed the elk to remain in the bush and other areas for longer periods of time because they were not challenged by snowfall or extreme cold temperatures. The earlier than normal spring melt has also made it easier for the wildlife to find feed sources sooner into the spring season. However, there were elk at and near the 3D fencing site for approximately 1 month's time, and no elk crossed the 3D fence. The producer did not have any damage or loss of feed that was protected by the 3D fencing system, but did report feed damage and loss to other unprotected feed supplies on their farm.



Evidence of elk at bales near the 3D fencing site March 19, 2015, and images capturing elk at the 3D fencing site.

3D Fencing for Wildlife Control: Trail Camera Footage



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