



Constructing a simple electric predator fence

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Disclaimer

The instructions outlined here, and the materials suggested for use, have proven to produce a safe and effective electric predator fence. Neither the author, nor British Columbia Conservation Foundation's Bear Aware Program, however, are responsible for any damages or injuries resulting during the construction or use of this fence.

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Introduction

These instructions will allow you to construct a simple, free-standing, six strand electrified fence that encloses the property (e.g., chicken coop, fruit tree or fruit orchard) that you wish to protect from a bear. You will end up with a fence of six live wires encircling your bear attractant, as opposed to a livestock fence that is often comprised of alternating live and ground wires. All wires should be live in a predator fence so that the bear will encounter a live wire no matter where it touches the fence.

Constructing an electric fence to include an already constructed fence of wooden posts; the posts and structure of a chicken coop; t-posts and other options is also possible by modifying the materials and method described below. There are also situations and circumstances where using only four strands will suffice to discourage a bear. However, these instructions will get you started and have been proven to work best in deterring black and grizzly bears.

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Figure 1. A simple predator electric fence

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Materials

- **Rebar – 6 foot high (or taller), 3/8 inch diameter posts**

You will need enough rebar to encircle the area you are protecting. The rebar will be placed at 4-5 foot intervals. Divide the circumference of the area in feet by 4 feet to find the number of rebar posts that you will need. You may need taller rebar depending upon the nature of your soil.

- **17 gauge galvanized electric fence wire or stranded galvanized wire**

You will be putting six strands of this wire around the area you are protecting, so you will need 6 times the circumference of the area. Galvanized wire (as opposed to lighter nylon wire used in livestock fencing) is necessary for an effective predator fence – it has the strength to maintain the tension required for such a fence. A taut fence is necessary in order to penetrate the thick coat of a bear and to carry the voltage necessary to the bear's skin.

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- **Spin-on rod post insulators**

You will be putting six insulators on each rebar post. *The insulators come in packages of 25.*

- **Electric fence handles**

Each gate in your fence will require 6 electric fence handles (one for each strand of wire).

- **Fence charger**

You will need a fence charger designed for a predator electric fence. These fencers have a low impedance (ability to send a charge through weeds) and send an alternating current for 25 – 30 miles of wire. The voltage required for a predator fence is ideally 7,000 volts. There are battery powered solar and plug-in fencers available. A battery powered solar fencer (e.g., the Parmak Magnum 6 or Magnum 12) is designed to be placed outside where it can be recharged by solar radiation. A plug-in fencer (e.g., Parmak SE-4) must be placed out of the elements, and requires a heavy-duty outdoor extension cord and a grounded electrical outlet.

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Materials (continued)

- **Ground**

The ground can be a 6 foot iron rod or a ground plate. The 6 foot iron rod driven deeply into the ground is the most effective ground, but in some harder soils, you may need to use the shorter, broad, ground plate.

- **Ground clamp**

Used to join the wire that runs from the fencer to the ground

- **Electric fence sign**

Highly visible signs hung on the fence that say "warning electric fence" to be placed wherever people are most likely to encounter the fence

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Tools

- Sledge hammer (to drive in the rebar posts and the ground rod)
- Wire cutters
- Pliers (to attach the ground clip to the wire and ground)
- Electric fence tester (each of the fencers described above indicates the charge being generated, but if you are using a fencer without the charge indicator, or want to double-check the charge, you can use one of a variety of electric fence testers available).

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How to construct the fence

1. Read the instruction manual for your fencer. A battery powered solar fencer will need to be fully charged before you hook it up to your fence.
2. Locate a good place for your fencer and ground rod (or ground plate). A battery-powered solar fencer should be in the sun for much of the day, and a plug-in fencer must be protected from the elements (in a building, structure or water-proof box). Install the fencer where you can easily turn it off before entering the fence, and on when you leave. Don't build your fence around your fencer unless you can easily reach the fencer when the fence is turned on.
3. Place your ground rod or plate close (within 6 feet is a good guideline) to the fencer. Wet the ground rod or plate thoroughly and keep it wet as an important part of fence maintenance. Placing the ground under the eave of a building will help keep your ground wet.
4. Pound your rebar posts into the ground around the perimeter of your fence, about 4-5 feet apart. You will need the posts to be about 4 feet high or higher when you are done.

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- a. Avoid locating your fence near trees, overhangs or other structures. Bears can climb up trees or posts etc., and drop down into your fenced area.
 - b. Avoid running fences parallel to and directly beneath power lines because this could cause major shorting
5. Prepare the area around your fence
- a. Cut all grass under the fence area so that no vegetation will touch the bottom wire
 - b. Trim all shrubs well back from your fence
 - c. Remove rocks and smooth the ground beneath the fence so that nothing touches the wires.
6. Place 6 spin-on insulators on each rebar post, about 5 inches apart. This means your wire strands will be 5 inches apart and the lowest wire will be 5" above the earth. This distance keeps even cubs from squeezing into the fence when it is turned on.

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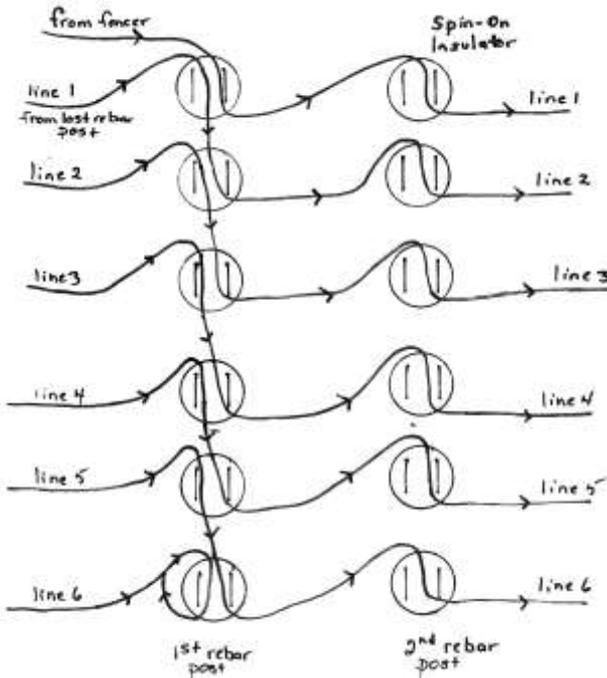
7. Put the wire on the insulators. Keep it fairly taut. You will be able to adjust the tension in later steps, however.

Start at the positive pole of the fencer. Make sure you have enough wire to run from the positive pole to your first rebar post (but don't hook the wire to the positive post of the fencer yet). Run the wire around the fence, hooking it into the first row of insulators until you reach the first post again. Hook your wire over the first insulator again (without touching the first loop of wire around the insulator) and then run the wire down to the next insulator down on the first post (as shown in figure 2). You now have one row of wire around your fence.

Repeat until you have strung the wire six times around the fence. Hook the end of the wire around the last insulator on the first post, as shown in Figure 2. You have now run the same wire six times around your fence to create a six-strand fence.

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Figure 2. How to run the wire around the spin-on insulators



8. Construct the gate:

- Cut the first wire at your gate location
- Attach the electric fence handle by looping one end of the wire around the loop at the end of the handle.

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- c) Make a loop of the other end of the wire and hook the "hook" on the handle into this loop.
 - d) You can now adjust the tension in the wire by adjusting the tension at this handle.
 - e) Continue this procedure for all six gate handles. Adjust the tension so that there is no sagging of any of the wires.
 - f) You now have a gate comprised of six electric fence handles, one on each strand of wire.
9. Walk the area around your fence. Make sure the wire is not touching any of the posts, the ground, vegetation or anything else that could cause it to short out. Adjust the height of the insulators and the fence tension. Fill in any dips or depressions under the fence that might allow a bear to squeeze under the fence.
10. Hook the wire that comprises your six strand fence to the red, positive post of the fencer (labeled on the fencer).
11. Hook a second, separate wire from the ground rod or plate to the black (ground post) post on the fencer.

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12. Turn on the fencer and check the voltage. The fencer will indicate whether the charge is being carried.
13. If the fencer does not show a charge- Turn off the fencer and then:
 - a) Walk the perimeter of the fence again checking each insulator to make sure that the wire is not touching the rebar
 - b) Check to make sure that there are no crossed wires at the first post as the wire drops down to a lower insulator
 - c) Make sure that the ground is hooked up correctly to: the post on the fencer; to the ground with a proper clamp and that the ground is wet
 - d) Make sure your battery-powered solar fencer is charged, and that the battery is not defective
 - e) Make sure your plug-in fencer is properly connected to a working outdoor heavy duty extension cord and that the outlet is grounded and functional.
14. Place warning signs on the fence with loops of wire, paper clips etc.

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Fence maintenance

- * Keep vegetation trimmed – not touching your wire
- * Keep the wire taut
- * Keep the ground rod or plate wet
- * Walk the perimeter routinely to make sure that there has been no digging under the fence.
- * Check the voltage routinely
- * Over winter, keep the solar fencer in the sun and unplug the plug-in fencer.
- * Make sure the fencer is on - even if you do not think that there is a bear around, keep the fencer on in bear season.
- * This fence can be used as a year-round solution, but if you do take the fence down, remember to turn the solar fencer off and store it in the sun, if possible. Remember to set up your electric fence before the bear finds your fruit (or other seasonal attractant) in spring.

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Baiting the electric fence

You can bait the fence so that a bear gets the full charge on its nose. This is recommended only if you know that you have a bear that has shown an interest in your property. You can bait, for instance, with a paper clip and an attached sausage, or aluminum foil smeared with peanut butter on a live wire. Baiting is not recommended unless there is a bear in the vicinity likely to visit the property. You do not want to attract a bear (or other animals) that would not otherwise visit the property.

A second, more comprehensive and advanced guide to setting up a predator electric fence, is planned to accompany this document.