



BE A GOOD NEIGHBOR AND BE BEAR SMART!

Electricified Unwelcome Mats

Electrified unwelcome mats can be easily constructed from materials available from feed or farm and ranch stores. By far the most expensive component will be the charger and a joule rating of 0.7 or greater is recommended to be effective with black bears. Plug-in chargers require less maintenance, receive a consistent output of power, and are typically less expensive. The system must be properly grounded.

Making an Electrified Unwelcome Mat

Courtesy Colorado Parks and Wildlife

Materials List:

Heavy gauge, 4"x 4" square mesh wire panel, typically sold as wire fencing. Finished size depends on your needs. If the mat is for a sliding door or double French doors you may want to use a larger piece, but a 4'x 4" section works well for single doors or in front of most windows.

Thick rubber mat. Stall mats, or 3/8th inch rubber on rolls are available at Farm and Ranch stores. The purpose of the mat is to provide electrical insulation between the wire mesh and the earth. Thin rubber or non-insulating materials will cause the mat to malfunction.

Electric fence charger. A Gallager M80 or B75 is optimal, but any electric fence energizer will work. Chargers vary by energy output (the shock delivered) and the energy required to operate them. Options include battery, solar/battery, or plug-in styles. 110 volt plug-in styles are the lowest maintenance.

Ground wire (6-feet). Typical ground wire is a bare (no insulation or covering), heavier 10-gauge copper wire.

"Hot" wire (length determined by installation). This wire delivers electrical energy from the charger and the wire mesh panel. Typical hot (live) wire is 12 or 10 gauge, insulated, braided or solid strand copper wire.

Copper ground rod (4-8 feet). This rod serves as the "earth ground" connection for the fence charger and is essential for proper charger operation.

Ground rod clamp. This secures the ground wire coming from the fence charger to the ground rod.

Alligator Clip. Clip will be used to secure "hot" wire to mesh wire panel.

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Tools Required:

Bolt cutters, hacksaw or circular saw with carbide blade - to size mesh wire panel

Saw - to cut rubber mat to size

Hammer - to drive copper ground rod into the earth

Wrench (or screw driver) – to fasten ground rod clamp and ground wire to ground rod

Assembly Steps:

1. Cut **mesh wire panel** to appropriate size.
2. Cut **rubber mat** 1" to 2" bigger on all sides than wire mesh panel so panel doesn't hang over mat edge.
3. Place rubber mat where it will be used. Center mesh wire panel on mat. It doesn't need to be formally attached to mat, but can just lie on top.
4. Install **fence charger** per manufacturer's directions. Consideration should be given to locating your power source.
5. Drive **ground rod** into the earth next to charger and keep soil around ground rod moist to maximize charger effectiveness.
6. Run one wire from the **black charger terminal ground rod** and attach with the ground rod clamp.
7. Run a second wire from the **red charger terminal** to the wire panel and attach with the alligator clip.

Notes: Warning signs are a good idea, particularly if children or the general public has access to the mat.

For the mat to deliver a shock, an animal has to have at least one point of contact with the earth or soil next to the mat. So if a cat or bird landed fully on the mat without simultaneous contact with the adjacent ground, no shock would be delivered.

Humans or pets coming into contact with the mat will experience the same brief shock as the bear might. While uncomfortable, it is not debilitating and certainly not lethal.

Plants or moisture that bridge between the mesh wire panel and the ground can cause an electrical "short", detectable by an audible "snapping" or "clicking" sound and a visible spark at the point of contact. If due to moisture, the condition will self-correct when the mat dries out. Make sure no branches or vegetation come in contact with the wire mesh panel.

Visit www.wildlife.state.co.us/bears for more information or call your local Colorado Parks and Wildlife Office at 970-247-0855.

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