BearWise® BULLETIN
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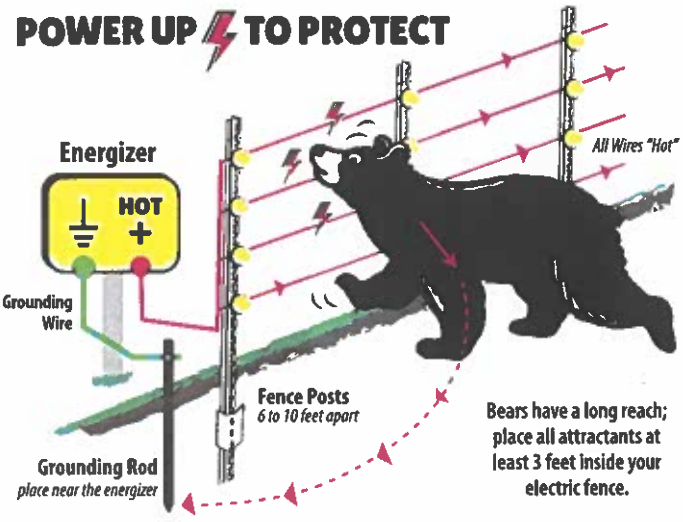
Electric Fences Keep Bears Out

POWER UP. It's the safe, effective, long-term solution to protecting your stuff from bears:

Garbage, Compost | Chickens, Small Livestock | Beehives
Fruit Trees, Edible Gardens | Buildings, Cabins, RVs

How an Electric Fence Works

When a bear touches an electric fence wire, electricity instantly travels from the wire through the bear, into the earth to the grounding rod, and then back to the energizer, completing the circuit. The bear gets a shocking lesson and quickly learns to leave your fence (and whatever is inside it) alone.



Got Dry Soil, Sand or Gravel?

Here are two options if your soil does not have enough moisture to conduct electricity. 1) Use an **all "hot" (positive) system** with a negative grounding apron *(see next page)* to complete the circuit. Or 2) Set up a **positive/negative system**, with the top wire and lowest wire as "hot" (positive) ... a bear that tries to go over or under the fence will get shocked.



Electric Fences Are Safe for Children, Pets & Animals

Getting zapped may hurt, but it won't harm.

Choosing an Energizer

An energizer sends out the electricity through your fence. Energizers powered through an electrical outlet (AC) are the most dependable and powerful, but solar energizers and 12-volt battery-powered energizers are also reliable, and useful when a portable or remote system is needed.

- **Get an energizer that outputs at least 6,000+ volts.**
- **Output joules should be at least 0.5.** The joules rating tells you the amount of energy the fence actually delivers. Depending on your location and soil type, a lower joule rating may work. Ask your state wildlife agency for recommendations for your area and what you are protecting. ***Got grizzlies? Use 0.7 joules.***
- **Keep the energizer out of a bear's reach.** Many people place the energizer inside the fence, with a cutoff switch outside the fence.
- **Calculate the length of all wires**, not just the perimeter size of the fence. For example, a 100-foot perimeter with 5 wires = 500 feet of wire. Your energizer needs to be powerful enough to carry energy through **all** wires and any energized gates.

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Laying Out Fence Wires

Metal wire or polywire are good choices for fences. Polytape can flatten out over the bear's coat, preventing it from making the skin contact needed to deliver a shock.

- **Minimum of 3 strands of wire (5 or 6 are better).**
- **Lowest wire: 7 – 9 inches above ground** to ensure that a bear trying to go under the fence will get shocked.
- **Highest wire: 36 – 42 inches above ground** will be tall enough to keep a bear from easily stepping over the top wire, but short enough to allow deer to safely clear the fence without injuring themselves or damaging the fence.
- **Space wires 8 – 10 inches apart.** Narrower spacing (more wires) is better.

Selecting Posts & Insulators

Posts define the perimeter of your fence and keep the wires tight. Metal T-posts are the most popular, but you can also use wood, plastic or fiberglass posts. Attach plastic insulators to the posts to keep the wires from touching the posts and grounding out the system. Longer insulators work best on the corners.

Grounding Your Electric Fence

Grounding completes the circuit, ensuring that whatever comes in contact with the fence will get shocked.

- Drive a grounding rod (galvanized steel) six feet straight down or at an angle, leaving a few inches for connecting the ground wire. Connect multiple grounding rods if you cannot reach that depth or have dry soil.
- Consider placing a drip line (or a 5-gallon bucket full of water with small holes drilled in the bottom) near the grounding rod(s) to keep the soil moist.
- For dry soils, lay a flat 3-foot wide strip of chicken wire or hog panel (**grounding apron**) in front of your fence. A bear will be "grounded" when it steps on the apron and touches the electrified fence wires. Make sure the grounding apron is NOT ATTACHED to the fence.
- Attach a wire from the energizer's ground outlet to the grounding rod(s) and/or grounding apron.



Texas Parks and Wildlife Department

Bears are smart and will look for a way over, under and through an electric fence. This young bear discovered the lowest wire was too high and the soil was too dry to achieve adequate grounding.



Minnesota Department of Natural Resources

***Electric net fencing** is an effective temporary solution until a permanent system can be constructed. This Minnesota solar-powered energizer protects a bird feeder and compost bin.*

Maintaining Your Electric Fence

Ongoing maintenance is the key to keeping your fence working 24/7. Don't wait for a bear 'break-in' to figure out what went wrong. Walk around your fence every few days to identify possible problems.

- If you hear clicking (which indicates energy is arcing out of the fence), look for something that is grounding out (shutting down) the fence, such as a broken / frayed wire or a loose wire touching something, including vegetation.
- Keep vegetation low. Vegetation touching the fence, especially if wet, can ground out the system. It can also accelerate battery drain on solar-powered energizers.
- Look for loose wires or damage caused by other animals.
- Check fence voltage with a fence tester often and verify the power supply to the energizer is working (especially important in battery-powered systems).
- Look closely at the wires and insulators at least once a year for signs of degradation; repair/replace as needed.

A properly installed, grounded and maintained electric fence is the most effective way to keep bears out.

For help getting started or diagnosing / fixing a problem, please contact your state wildlife agency.

ASSOCIATION of FISH & WILDLIFE AGENCIES

Learn More:
BearWise.org

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