



The Managed Mentoring Program on getting started in beekeeping.

# Managed Mentoring



**Managed Mentoring**  
**Protecting Beehives from Bears**  
Lesson | Bear Fencing for Beehives



# What is Covered in this Lesson

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Insights of Bears and Beehives

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Bear Fence Basics

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Bear Fence Maintenance

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Resources

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Bear Encounters

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# Part 1 – Bear Primer

**General Knowledge About Bears**

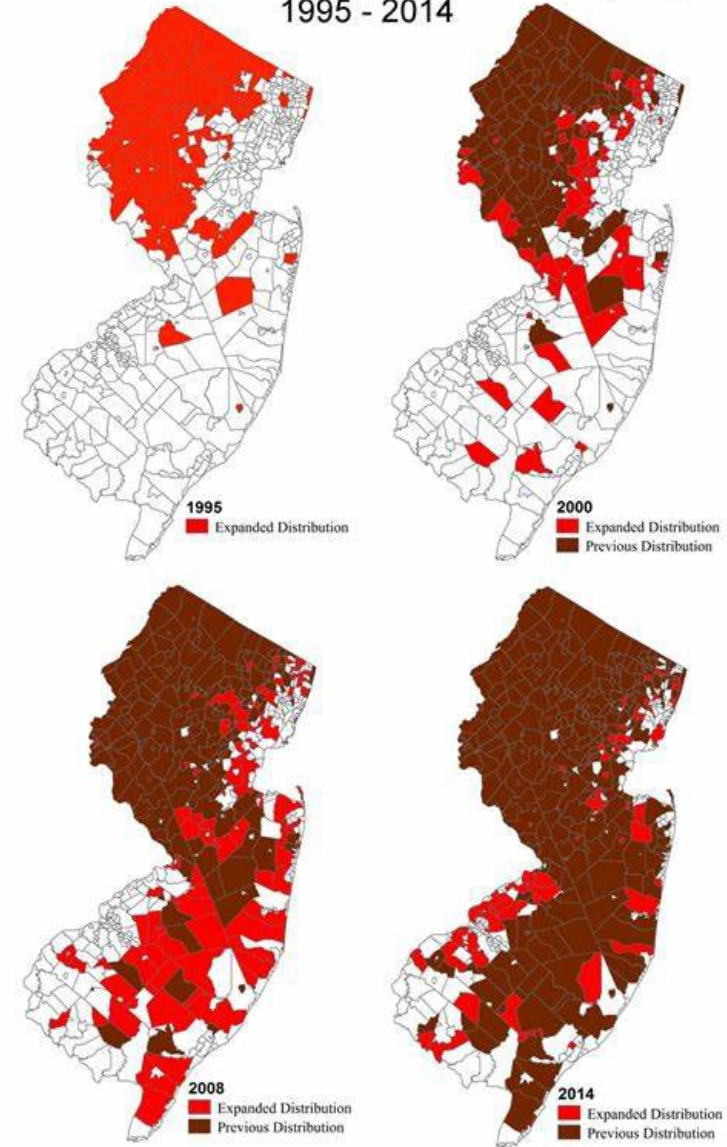


# Black Bears in New Jersey

## Black Bear Insights

- Bears are in all 21 counties in New Jersey
  - Heaviest Population is North West NJ
  - Sussex, Passaic, Warren, and Morris Counties are most populated.
  - Density - NJ has more bears per square mile than any other place in the US.

NJ Black Bear Distribution Based on Sightings  
1995 - 2014



# Bear Insights to Know

## □ General Things to keep in mind

- *Remarkable sense of smell – up to two miles*
  - Black bears are attracted to honey and will also consume bee larvae from beehives.
- *Mostly active shortly before sunrise and again after sunset*
  - Daytime – spent in day beds resting at the base of trees or in tree limbs.

### *Typical Habitats*

- *Mixed Hardwood Forests, Dense Swamps, Forested Wetlands*
  - Females live in a range of 2 square miles
  - Male territories can cover several female ranges.



# Bears and Beehives

- ❑ **Place bees away from natural habitats.**
  - *Bears need water and will follow water sources.*
  - *Keep hives away from field edges, densely wooded areas where bears have cover and streams.*
  
- ❑ **Keep the hives out in the open and in full sun.**
  - *Bears prefer cover so keeping grass mowed around hives and keeping brush down could discourage bears from coming out into the open.*

*Livestock pens, beehives, vegetable gardens and compost piles should be located at least 50 yards from forest tree lines, wetlands, or other cover for bears.*



*Bear Fencing is the most effective and efficient method of preventing bear damage to livestock, beehives, crops, silage bags, orchards, gardens and compost piles. Fencing is only effective if it is properly installed and maintained.*

*New Jersey Division of Fish and Wildlife*

## Part 2 – Bear Fencing

Bloomer



# Why Bear Fencing?

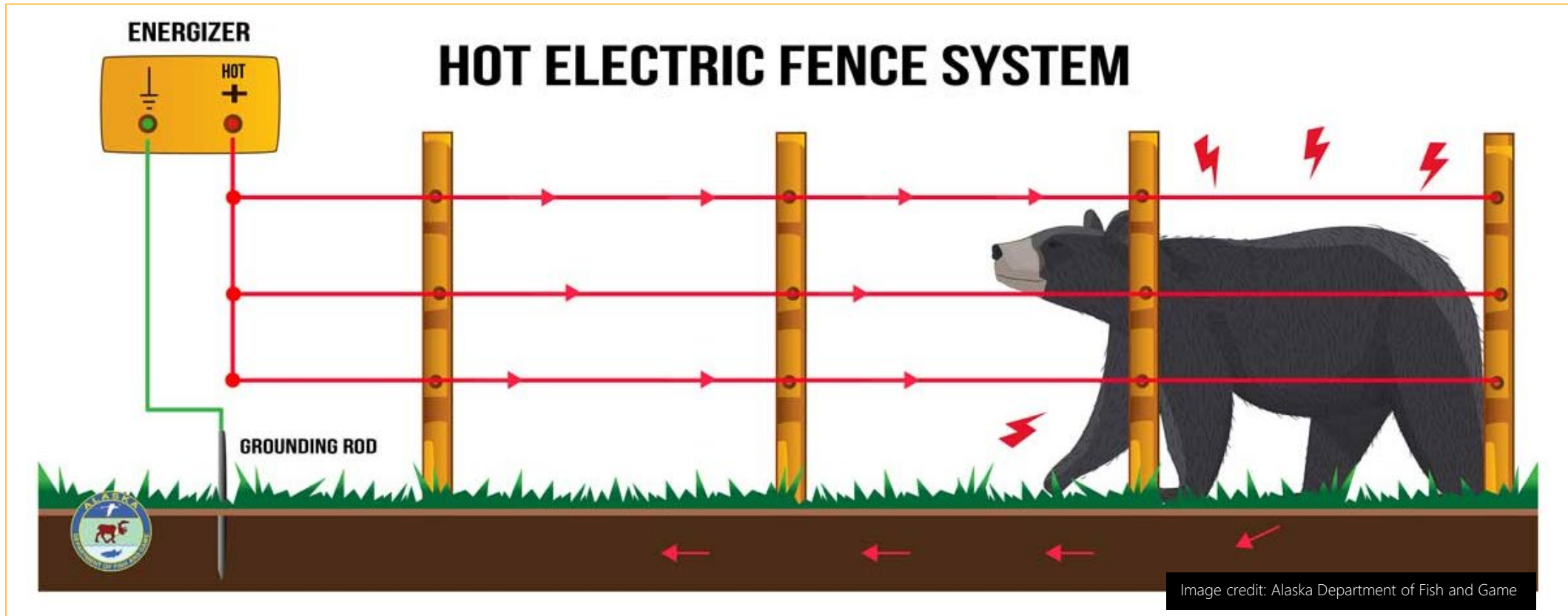
- ❑ Bears can easily push through bear fences
  - *They can turn and go through with their fur.*
    - Think of how they can get into parked cars, dumpsters, bear enclosures....
  
- ❑ So how does a bear fence work?
  - *After receiving their first shock, many bears seem to sense the electrical charge in the fence lines and avoid those fences.*
  - *When the fences are properly designed, even their appearance can remind bears of their previous unpleasant encounter* US Department of Agriculture



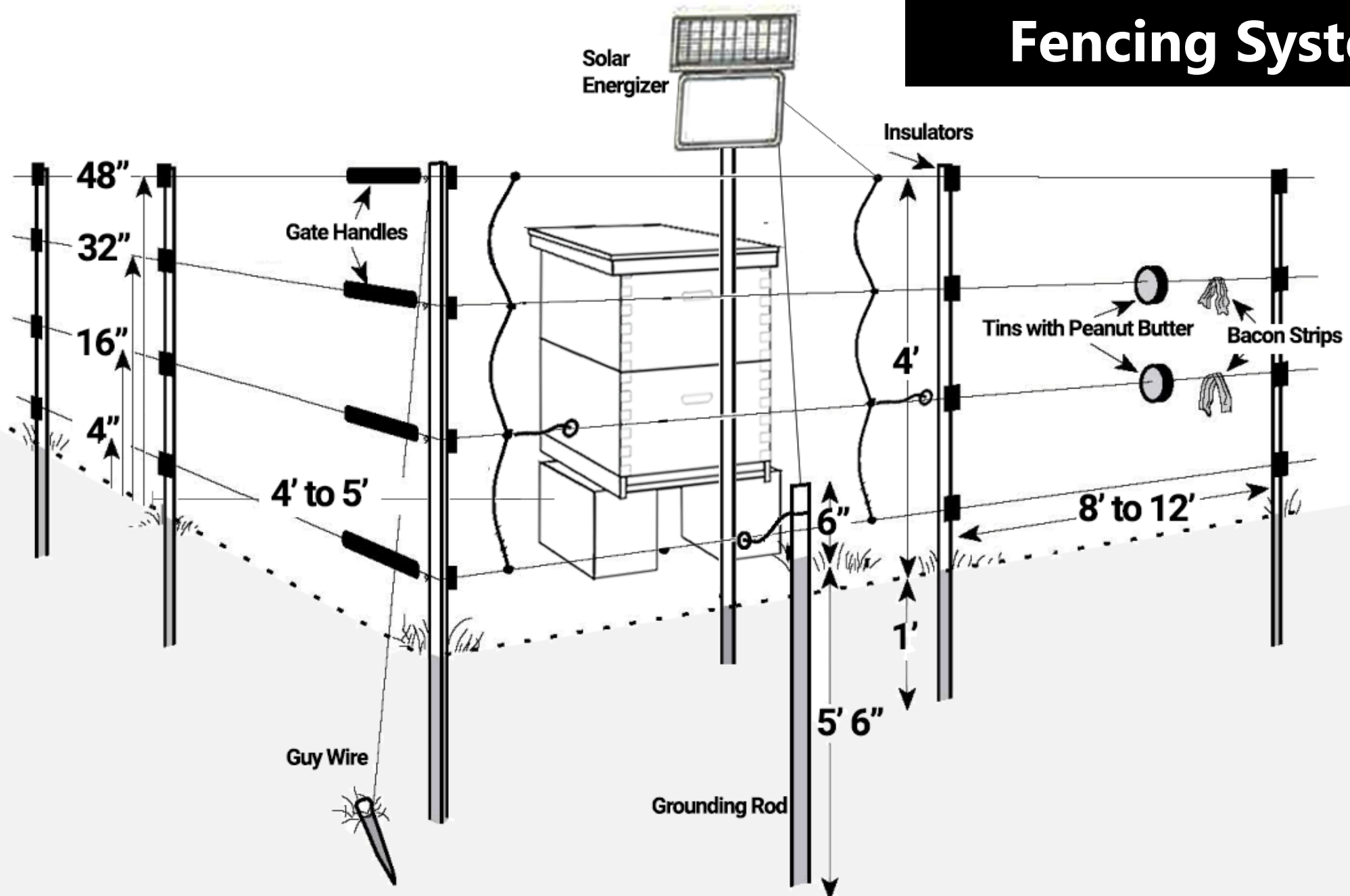
# How a Fence Works

## Delivering a non-lethal Shock

- *When the animal touches the fence, current flows through the animal, through the soil, to the grounding rod, and back to the energizer – completing the circuit, and delivering a shock*



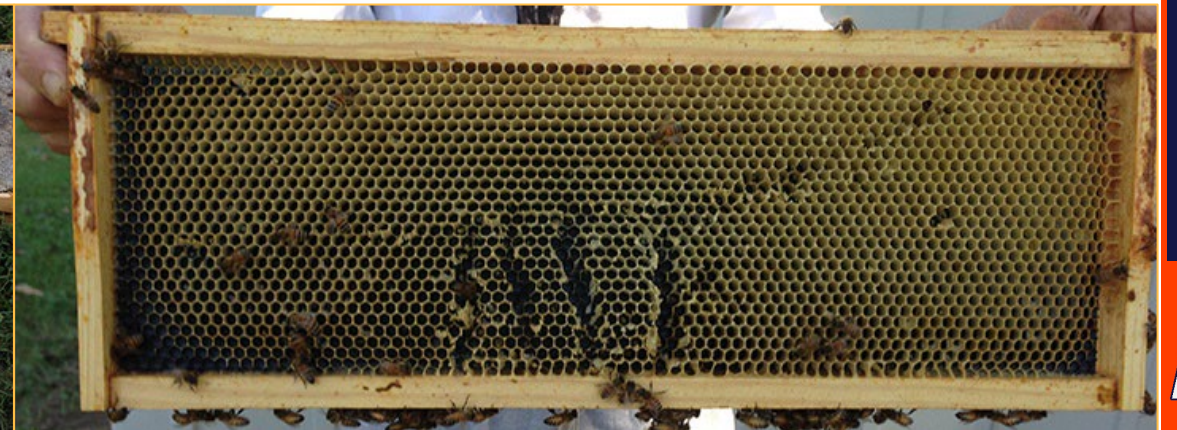
# An Illustrative Bear Fencing System



# The Cost for No Protection

## ❑ The Potential for a Complete Loss

- *Beehives are often scattered or broken, and claw/tooth marks may be visible on hive structures;*
  - Hive often can, and often do, end up as splintered wood.
  - The bees are gone. Frames are destroyed.
  - There is high potential that a first encounter could result in a complete loss
- *Most raids occur during peak honey production*
  - It is highly likely that if they didn't destroy things totally, they return on subsequent occasions – knowing there is a food source available



# Bear Fence Considerations

## □ Bear Fence Construction and Power

- *Install the energizer with a minimum joule rating of 0.7 and a voltage output of at least 6,000 volts. Energizers should be compatible with the type of wire used.*
  - Check the manufacturer's recommendations to be sure that all the requirements are met.
  - Install the insulators on posts to secure hot wire strands and install wires, starting at the gate post.
- *Where feasible use plug-in power in lieu of battery or solar power*
- *Best to use all solid wooden posts and 14 Ga or 12 Ga steel wire.*



# Bear Fence Construction

## □ Designing the Enclosure

- *Place fence 4 to 5 feet away from the beehive being protected.*
  - This keeps the bear from reaching through.
- *Place the fencing away from any nearby trees*
  - A bear can climb and then drop down into the fenced-in area.
- *Fence systems should be at least 4-foot high*
  - Deterrent lines should be at minimum at the 4-inch, 16-inch, 32-inch, and 48-inch areas in the fence. The wires need to be spaced close enough so that cubs are discouraged from entering the fence.

*Many of the measurement recommendations are from NJ Division of Fish and Wildlife.*

*Do note that recommendations from various sources differ and you will have to make some decisions on whose guidance to go with*



## Grounding the Fence

- Drive the ground rod made of galvanized steel at least 6 feet
  - *You are looking to ensure it is in contact with moist soil near the post for the energizer.*
    - Use 1 ground rod per joule of energizer's output.
    - In very dry or rocky soils, drive the rod deeper than 6 feet or drive it at a steep angle at a shallow depth to maximize surface area.
    - Three or more rods can also be placed in a series 10 feet apart. Frequently water dry soil around the ground rod.



# Maintain the Ground

## □ Maintain the ground cover

- *Remove grass and weeds in an 18 inch strip along the fence line.*
- *Maintain the 18-inch area under the fence with an herbicide to prevent the return of vegetation.*
  - Organic alternatives to using an herbicide include using mulch, wood chips or landscape fabric.
  - Do not expand wider than 18 inches because the bear as a bear will be better grounded if it is standing on grass.





# Energy and Bait the Fence

## □ Keep the fence constantly energized & baited

- *No matter the season, a bear can be on the move.*
  - If they encounter a fence that is not energized, they often will not consider it a deterrent on the next encounter (charged or not)
- *Bait the fence*
  - Bait the wires on the electric fence to direct a mild shock onto the muzzle area of a black bear.
  - This makes the fence much more effective, regardless of the size of the bear.



# Baiting Instructions

## □ Recommendations from NJF&WL

- *The fence should be baited on all sides at 3 feet high, so it is at eye/nose level for a bear.*
- *Bait the wires on all sides with bacon wrapped around the wire.*
  - Sometimes other predators take the bacon and thwart your tactic (i.e. crows)
- *Alternative: Use peanut butter wrapped in tin foil. When a bear grabs the bait, it will get a shock to its tongue and mouth.*



# Fence Design Research

- There are many resources to tell you the mechanics of how to build fence systems

- *State Division of Fish and Wild Life Organizations*

- Many states have pages dedicated to erecting fences.
- Consider those that have large bear populations (Alaska, Idaho, Maine, Oregon, Wisconsin, Washington State, etc.)

- *Electric Fence Companies*

- *US Department of Agriculture*

Install solar charger, controller, and battery inside fenced area.

minimum length—  
0.6 meters  
(2 feet)

These loops must not contact other wires. To prevent contact, use insulators or insulation sold for electric fence application as necessary.



# If you Encounter a Bear



## DO NOT DO THIS

- *Do not approach bears. Especially feeding bears, which will aggressively defend their food.*
- *Do not run from bears. Running may trigger a chase response.*
- *Do not make direct eye contact. Bears may perceive this as a challenge.*

## DO THIS INSTEAD

- *Remain calm and slowly back away.*
  - *Make the bear aware of you.*
  - *Be loud: speak in an assertive voice, yell, sing, or clap your hands. If available, bang pots and pans or use an airhorn.*
  - *Make yourself look big. Wave your arms. Hold your jacket above your head.*
- *If you're in a group, stay together and perform these actions together.*
  - *Make sure the bear has an escape route. If a bear enters your home, prop all the doors open.*
  - *If the bear doesn't leave, move to a secure area.*

# Black Bear Attacks are Extremely Rare

## ❑ Bluff Charge

- Black bears will sometimes “bluff charge” when cornered, threatened, or attempting to steal food.
  - Stand your ground, avoid direct eye contact, then slowly back away and do not run.

## ❑ If a black bear does attack, **fight back!**

- Aim for the snout and/or eyes.
- Use anything at hand:
  - Knife, sticks, rocks, binoculars, backpack or kick the bear.



# Q&A

- **What Questions did we not anticipate?**
  - If you have feedback, you can leave a constructive comment; but be nice.
  - You could also send an email to [comments@managedmentoring.com](mailto:comments@managedmentoring.com)
    - *Please refer to this video in the subject so we know what the reference is.*

