

# Special Hazards in the Backcountry

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## The real dangers versus the imagined dangers

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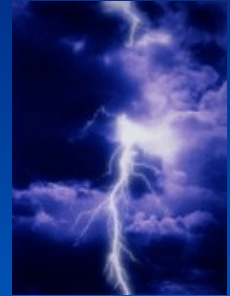
- What do people fear?
- What people should fear?
  - Ignorance can block life-saving fear.
- The challenge in wilderness is separating fact from myth (often media created) and making the best decisions to insure your safety.

# Lightning Danger

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Under appreciated destruction

- Lightning Kills an Average of 360 people per year and injures 500.
  - ▶ .42 per million people
- Lightning Kills its victims one at a time
  - ▶ 91% deaths are single victim
  - ▶ Males 84% of victims
- Lightning is a random phenomena
- Lightning is a predictable phenomena
  - ▶ Cumulonimbus clouds



# Types of Lightning

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- Cloud to Ground
- Intra Cloud (most common)
- Inter Cloud



# Lightning Trivia

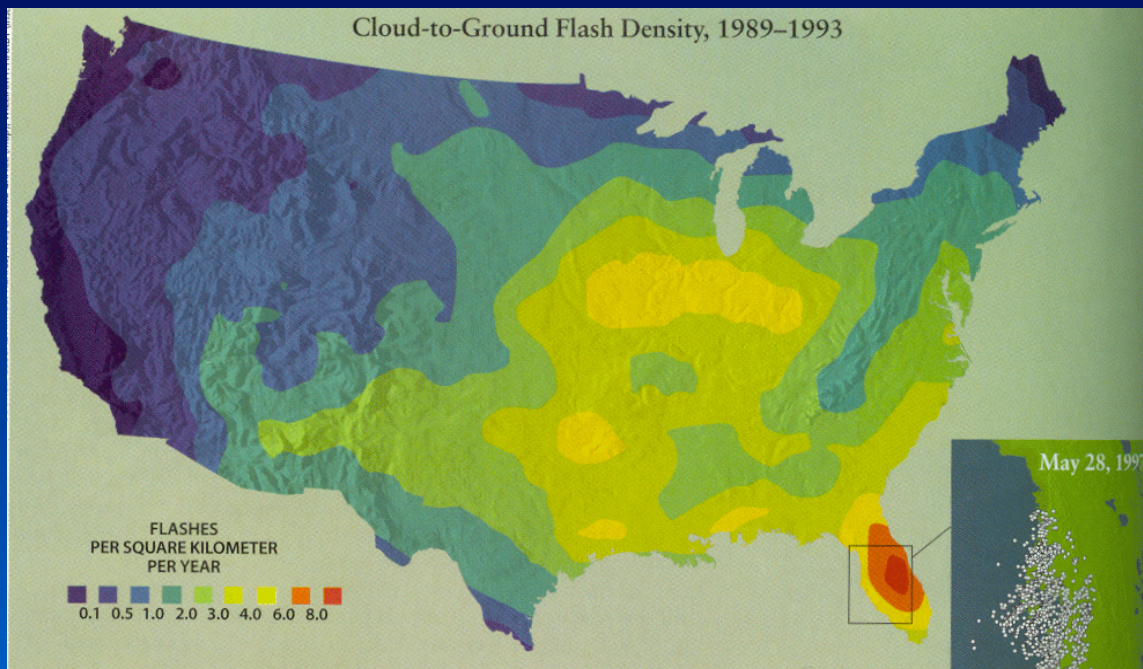
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Interesting and maybe Important?

- Why don't you hear "heat lightning"?
- Can you prevent lightning strikes from occurring?
- When during the storm do most ground discharges occur?
- Have you heard the "pop" before the "boom"?
- How big around is lightning?
- Why do you hear 'rolling thunder'?

## The Real Hot Spots in the U.S.

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## Safety Guidelines for Lightning

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- Always err on the side of caution ... a mistake could be tragic.
- Listen to advance weather reports . . . and know “local weather” patterns.
- Have an evacuation plan to a safer place
- Evacuate at first warning
  - If you can hear it, clear it. If you can see it, flee it.
  - First thunder cloud sighting
  - First sound of thunder (30 second minimum/ 6 miles)
  - First electrostatic activity - hair, sparks, St. Elmos
- Seek training in CPR
  - Recovery after the first few minutes is rare (20-30 max)

## Where to go to be safe?

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- Avoid higher points
  - Ridges, peaks, open space
- Avoid discharge path ways
  - Base of large trees, water drainage areas
- Find a protected area such as uniform tree cover
- The lightning shield area

# Dangers of Snow

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## Snow Fields, Avalanches, Crevasses

### ■ Snow Fields

- ▶ Evaluate their run-out
- ▶ Procedure for safe crossing of snow fields
  - Ice Axe and self arrest technique (take RTM 151C)
  - Belay party members across

### ■ Crevasses

- ▶ Glacier travel protocols
  - Roped travel, ice axe, ascenders
- ▶ Pursue special training

# Avalanches

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## Dangers of Snow

- ▶ Pursue special training
- ▶ Key Snow load factors
  - Snow accumulation
    - Rate/ History/ Wind
  - Slope steepness
    - 30/45/60/90. Zone B & C most dangerous.
    - 42 degrees optimal avalanche slope.
- ▶ Avoiding avalanche
  - Stay put
  - Traverse procedures
    - Trees/ Top/ Ropes/ Beacons

# Bears

## Types and Dangers

- Black Bears
  - Wild Black Bears
  - Garbage Black Bears
- Grizzly Bears
- Polar Bears



# Black Bears

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## Backcountry Practice in Black Bear Areas

- Food Protection
  - ▶ 9 feet high/ 4 feet off trunk
  - ▶ Counter balance hang the best
  - ▶ Use special bear containers
    - Required in Sequoia & Yosemite
- Be aggressive to protect your food (bluff well)
- In case of attack
  - ▶ Play dead/ pepper spray



# Grizzly Bear - Avoidance

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## Backcountry Practice in Grizzly Areas



- Avoiding Encounters
  - ▶ Make noise
    - Sing/ Talk/ Clap as move through key habitats
    - Water is loud
  - ▶ Travel in groups
  - ▶ Pay attention
    - Sightings/ signs/ dead animals
    - Head winds/ thick cover

# Grizzly Bear - Avoidance

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## Backcountry Practice in Grizzly Areas

- **Avoiding Encounters**
  - ▶ Separate cooking area, sleeping area, food storage area in triangle pattern (100 yds from pts A,B,C)
  - ▶ Use bear canisters or hang food & cookware (12 ft high/ 4 ft off tree with equalizer hang technique)
  - ▶ Hang deodorants, toothpaste, etc.
  - ▶ Remove cook's clothes
  - ▶ Avoid sex and menstruation

# Grizzly Bear - Encounter

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## What to do if you meet along the trail?

- Stay calm
- Pick up children
- Stand together
- Back away slowly and don't run
- Talk calmly and firmly (sing)

# Grizzly Bear - Under attack

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What to do if it's a bad bear day?

- Consider Playing Dead
  - ▶ If attack does not subside reconsider quickly
- Fight or flight for your life
  - ▶ If bear stalks you & then attacks
  - ▶ If attack comes at night
- Pepper spray (footnote)
- Intimidation - grizzly body language

# Cougar (Mountain Lion)

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- If a “Face off”
  - ▶ Look “big”
  - ▶ Calmly retreat - do not run
  - ▶ Pick up small children
- If an Attack
  - ▶ Shout/scream
  - ▶ Defend yourself
  - ▶ “It’s your life!”



# So how ya gonna die?

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- **Illness # 1 Killer - If you're in the over 45 crowd**
  - ▶ #1 is heart disease - 276/100,000
  - ▶ # 2 is cancer - 187/100,000
- **Accidents # 1 Killer of Young Adults**
- **Murder death rate - 5.6/100,000 in U.S. (17/100K L.A.)**
- **Automobile death rate - over 43,000 deaths per year**
  - ▶ Pedestrians = 1.7 /100,000
  - ▶ Vehicle Accident = 16.5/100,000
- **Outdoor Deaths**

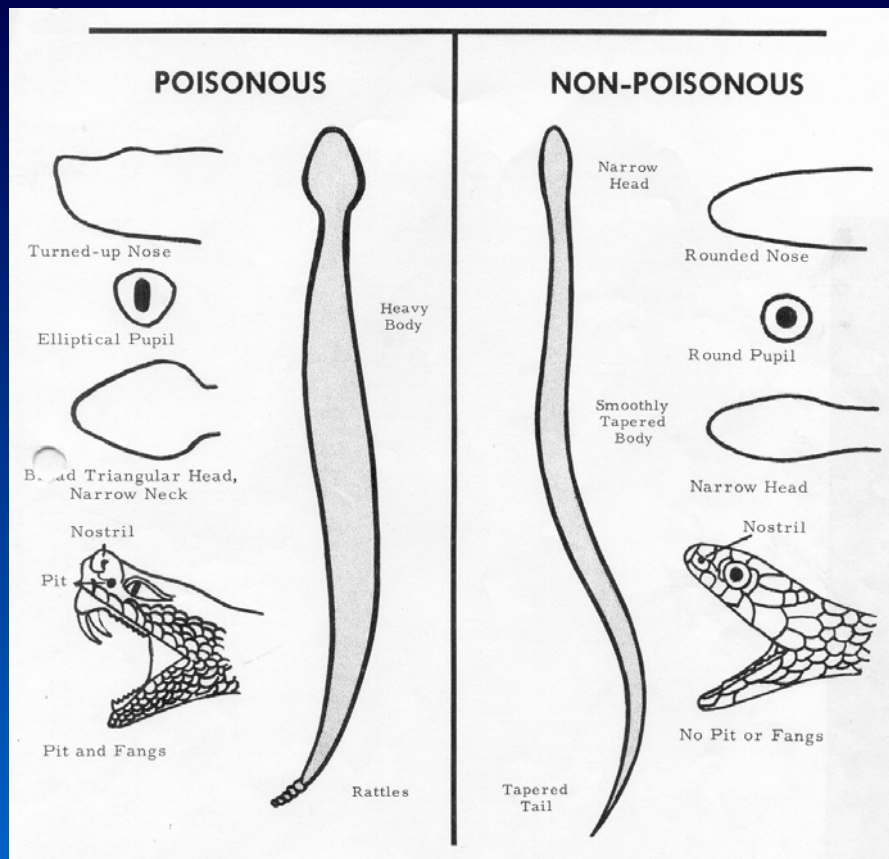
▶ **Lightning = .124/100,000 (360 per year - U.S.)**

▶ **Bears = .001/100,000 (1 per year North America)**

▶ **Mountain Lions = .0003/100,000 (1 per year N.A.)**

- **Stay clear**
- **Back off**
- **Run & hide**





## Poisonous Snakes

How to avoid getting bit & what if it happens

- Avoidance
  - ▶ Pay attention
  - ▶ Cold blooded behavior
- First Aid
  - ▶ Relax
    - few die; 25% no venom; 12 deaths per yr; 8000 bites
  - ▶ Restrictive bands
  - ▶ No cut / No cold
  - ▶ Retrieve snake if already dead (reasonable)
  - ▶ Transport

## Stream Crossings

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- If it boils above the knee = danger
- Water footwear
- Tripod position
- Train position
- Belay crossing if necessary

## Bees and Other Stings

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- Anaphylactic shock (anaphylaxis)
  - ▶ 1-2% extreme reaction
- Response: epinephrine (prescription)
  - ▶ Slow reaction protocol
- Honey bees / Wasps/ Yellow jackets
  - ▶ Removal of stinger / Charge it!
  - ▶ Meat tenderizer
- Africanized honey bee (killer bees)

# Tics

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- Wood ticks/ Dog Tick
  - ▶ Rock mountain spotted fever
  - ▶ Tularemia / Tulare fever
- Black legged tick
  - ▶ Lyme disease
    - Early symptoms:
      - skin reaction
      - flu like onset
      - Needs early response



Blacklegged Tick



Dog Tick

# Mosquitos

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- West Nile Virus ([westnile.ca.gov](http://westnile.ca.gov))
  - ▶ 2007 YTD 147 cases with 8 deaths.
- Encephalitis
  - ▶ Headache/ high fever/ stupor/ coma/ tremors
- Malaria
  - ▶ Shaking/ high fever/ sweat/ headache
- Protection
  - ▶ Stop breathing!! (CO2 factor)
  - ▶ Wind/ rain/ clothing
  - ▶ 100% DEET / Natrapel/ Avon

# Altitude Hazards

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How to avoid the dangers

- Acclimatize
  - ▶ High altitude climbing - Go Slow - 1000 ft per day
  - ▶ Fluids/ fluids/ fluids
  - ▶ No overexertion
  - ▶ Avoid weakened immune system

# Acute Mountain Sickness

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- Symptoms
  - ▶ Headache/ nausea/ insomnia/ lack of appetite/ edema
- Onset as low as 5,000 ft/ average 8-10,000 ft
- Response - go down/ rest

# High Altitude Pulmonary Edema

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(HAPE)

- Symptoms
  - Increase respirations
  - breathlessness
  - dry cough
  - rapid pulse
- Onset:
  - ▶ 9,000 ft earliets
  - ▶ average 12,000 ft. - variable
- Response: go down immediately

# High Altitude Cerebral Edema

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(HACE)

- Symptoms
  - ▶ Headache
  - ▶ Ataxia
  - ▶ Vomiting
- Onset: 12,000 ft and higher
- Response: go down immediately