# Risk Assessment for Field Work

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# Overall Goal: Establish a "Biosafe" Culture for Field Investigations

# For ALL Field Studies

# Conduct a Risk Assessment

# A Game Plan for Life – Coach John Wooden

- Start with the basics
  - Shoes and socks
  - One sock at a time
    - Roll down, start with toes, and roll toward heel, then ankle, then finish
    - Check for snug, comfortable fit
    - No wrinkles
  - Then shoes, one at a time
    - Lace from bottom to top
    - Double tie

# A Game Plan for Life – Coach John Wooden

- Start with the basics
- Bill Walton said "Coach told us
  - Improper fit will lead to blisters
  - With blisters, you can't practice
  - If you don't practice, you won't play
  - If you're not in the game, it is tough to be successful"

# Risk Assessment
## (the HEART of the Biosafety process)

- Identify and assess the risk(s)
- Determine method for mitigating risk
- Evaluate: proceed with investigations???
- Implement and/or re-evaluate
- Must be case by case
- Must be a continuous dynamic process

# Risk Assessment (continued)

- Availability of data from animal studies
- Availability of an effective prophylaxis or therapeutic intervention
- Medical surveillance
- Experience and skill level of at-risk personnel
- Communications, medical assistance

# Risk Assessment

Achieve the "Golden Balance"

Protect the investigators and the environment while conducting the research

# Risk Assessment (continued)

Final Question:

"Can we do the work safely?"

Yes, then proceed safely

No, then make changes so that work can proceed safely,

or DON'T DO THE WORK!

# Most common types of exposures:

1. Parenteral inoculations (syringes, needles, other sharps)
2. Spills and splashes onto the skin and mucous membranes
3. Accidental ingestion (mouth pipetting; touching mouth, eyes with contaminated fingers or other objects)
4. Animal bites and scratches
5. Inhalation of infectious aerosols

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   Please note: 50% - 80% of all reported lab acquired infections are likely due to undetected aerosol exposures

# Known RG-1

# Known RG-2 or 3

# Unknown or mistaken RG!!

# Mountain Lion

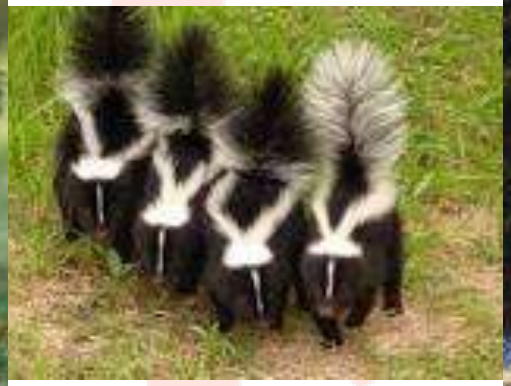
# Necropsy Experiences

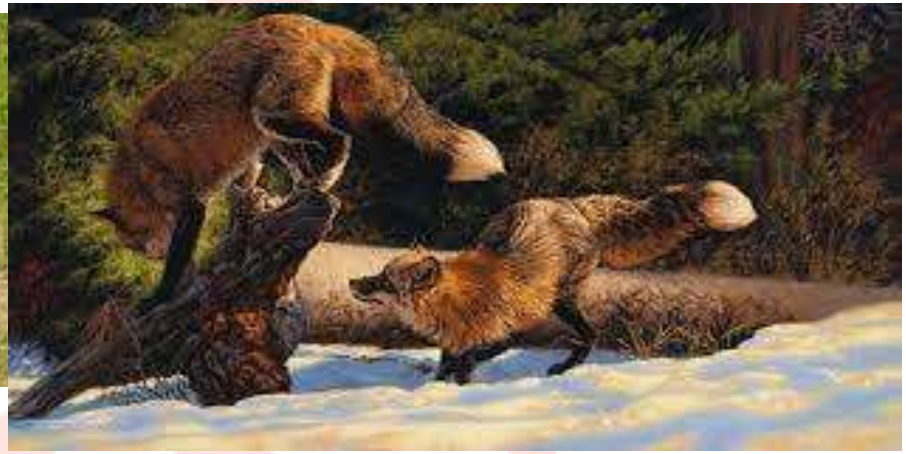
- Mountain Lion, Puma, Cougar
- Field Necropsy-Mountain Lion
  - Performed October 27 2007
  - Called in ill October 30
  - Man died November 2 at home
  - Mountain Lion tissues sent later to Colorado State University, confirmed *Y. pestis*
- Mountain lion *Y. pestis* positive fall 2008, exposures?
- Mountain lion *Y. pestis* positive fall 2009
- Lesson Learned – Remember the past, use precautions
  - especially RESPIRATORY PROTECTION

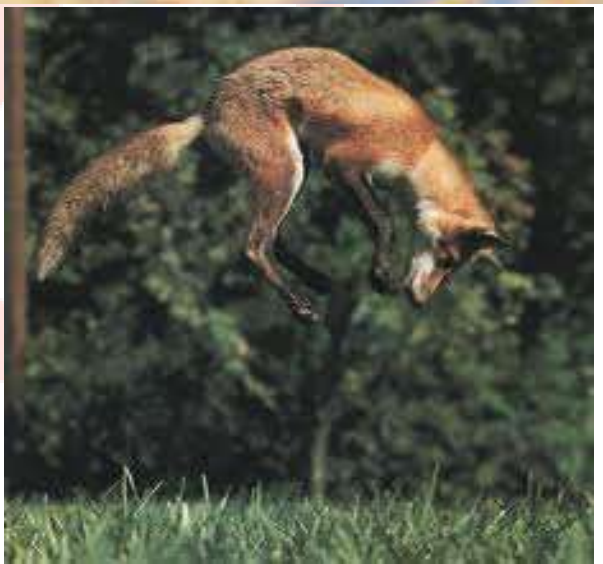
# Rabies

- Domestic animals
- Wildlife
- Bats
- Carnivores
- Herbivores
- Risks are different

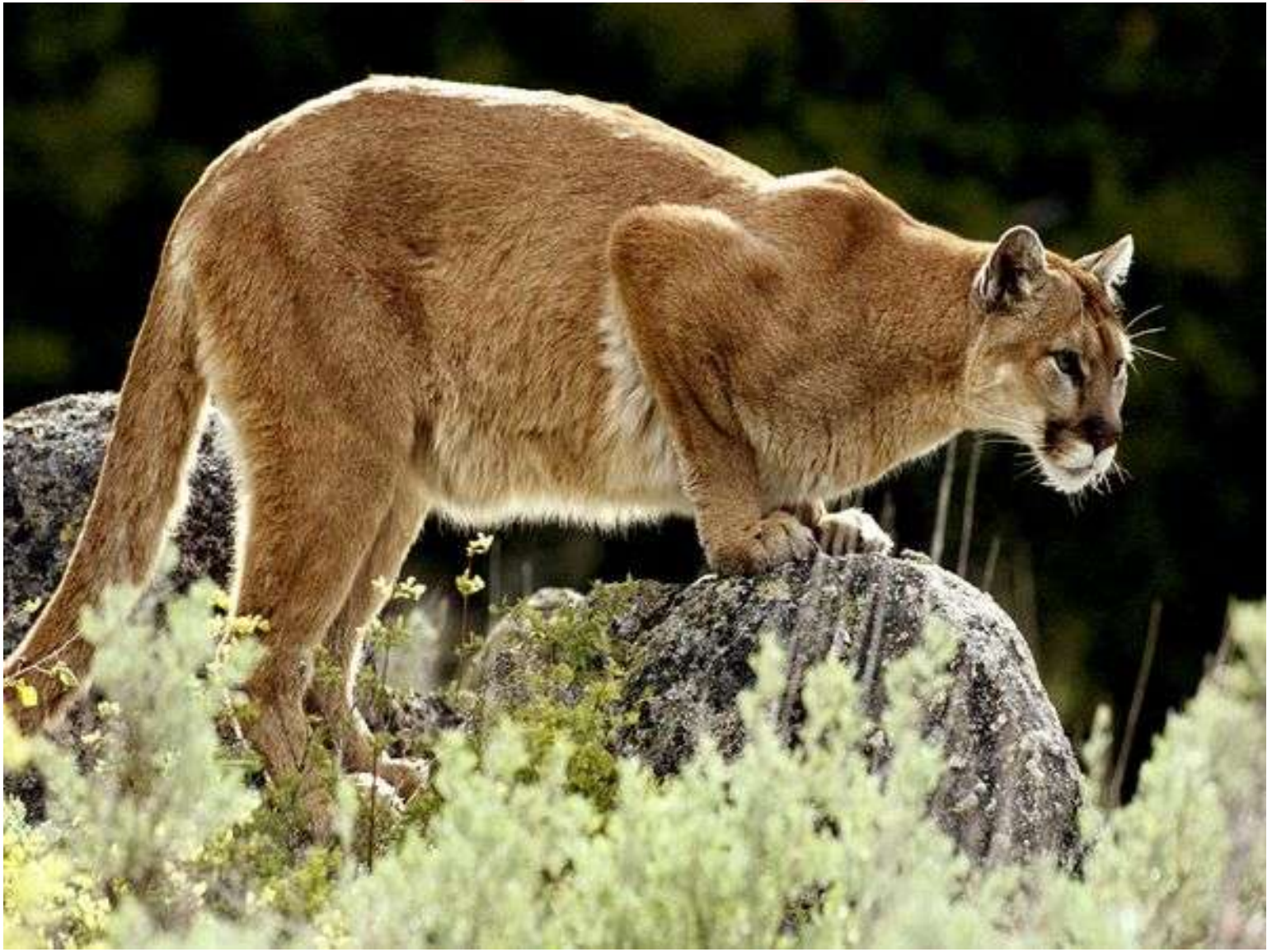
# Striped Skunks, Raccoon and Foxes







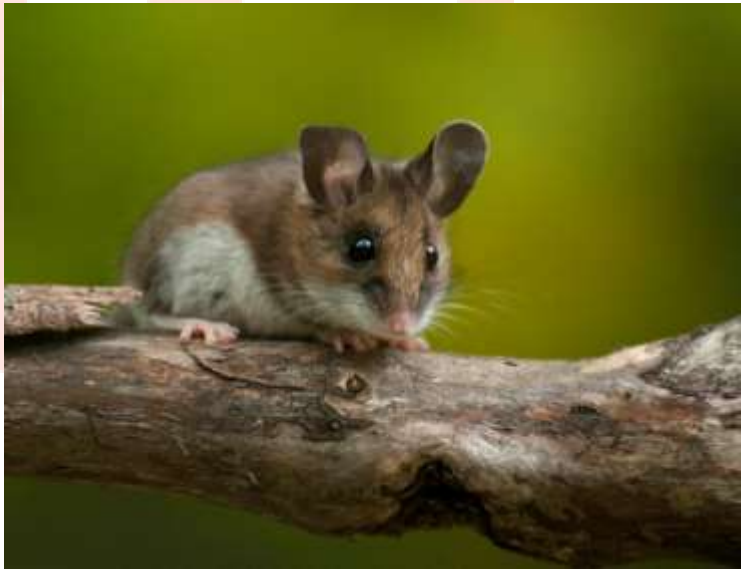
# Mountain Lion



# Live Trapping Large Felids

- Mountain Lions, Lynx and Bobcats
- Studying interactions between wild felids and domestic cats
- Risk assessment
- Risk mitigations
- Do we know enough to do this field research safely???

# *Peromyscus maniculatus*
# deer mouse



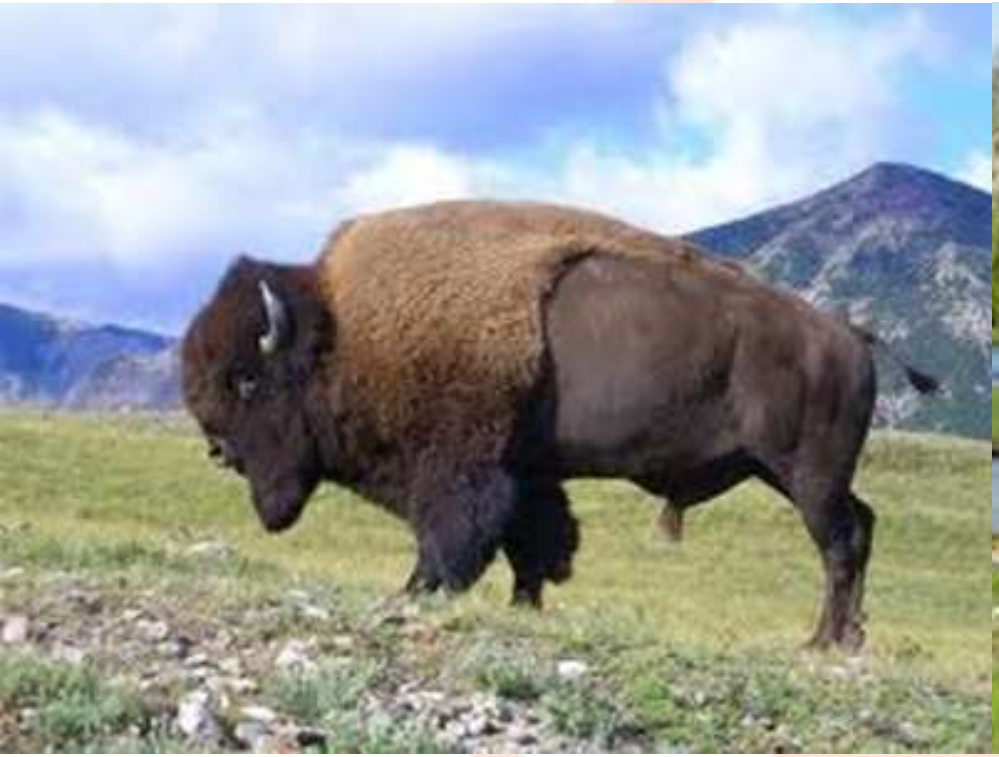
# Live Trapping Deer Mice

- Primary risk is aerosols
- Use live traps
- Clothing
  - Back closing gown
  - Double gloves
  - PAPR
  - Shoes???
- Anesthetize mouse

# Live Trapping Deer Mice

- Collect blood sample
- Tag to identify, then release mouse
- Sample analysis
  - Serum antibodies to Sin Nombre Virus
  - Isolation of Sin Nombre Virus
- Decon. trap before leaving field
- Risk assessment
- Risk mitigation

# Prairie Bison



# Immobilization and Euthanasia

- Know the regulations
- Know the affects of chemicals on YOU as well as on the animals
- If a particular chemical has not been proven for the species of choice, proceed with extreme caution
- Train, train, train!!!

# Immobilization Resource:

## Handbook of Wildlife Chemical Immobilization, Fourth Edition, 2012

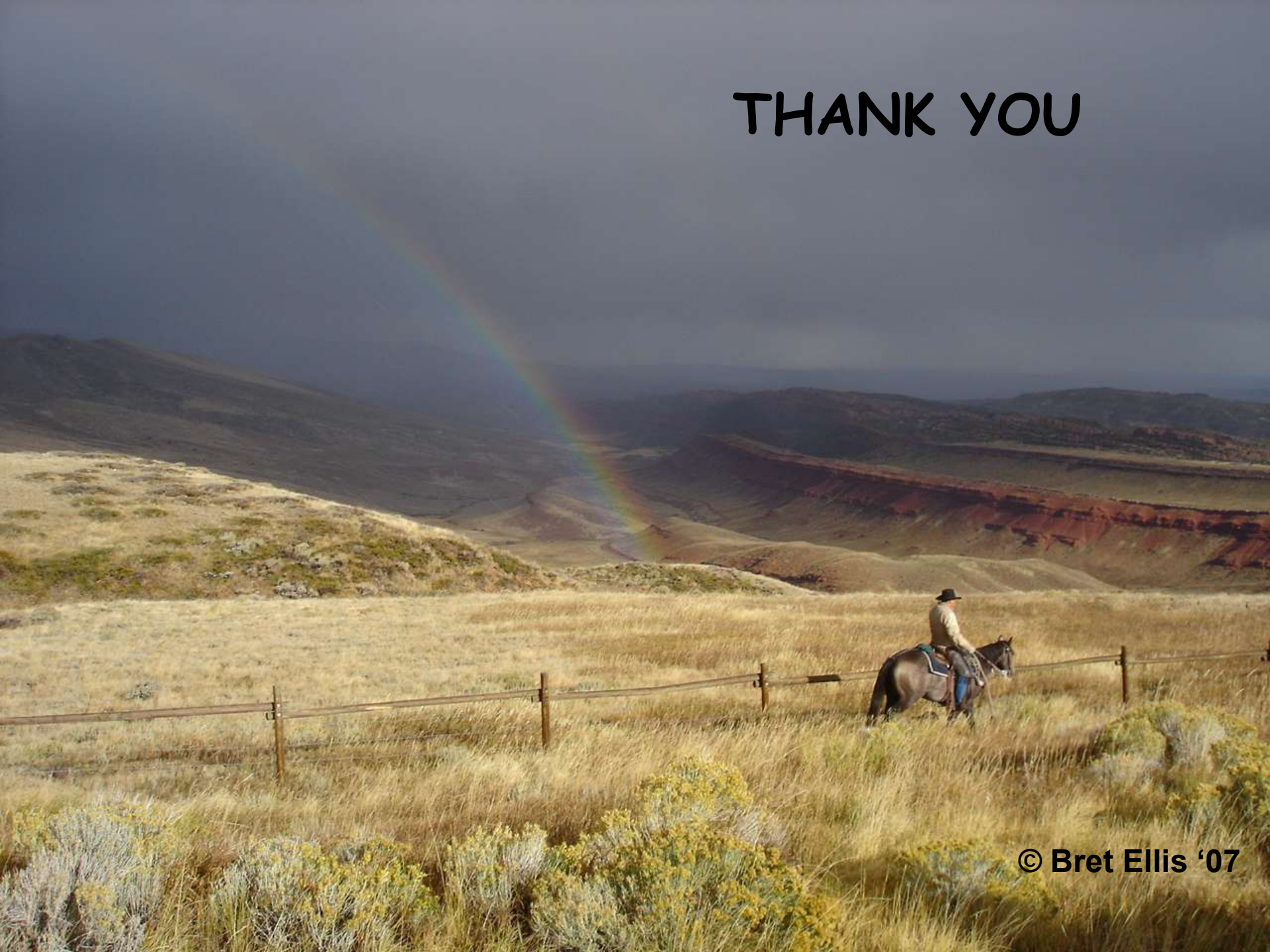
Terry J. Kreeger, MS, DVM, PhD
Jon M. Arnemo, DVM, PhD, DECZM

# Handbook of Wildlife Chemical Immobilization, Fourth Edition, 2012

- Immobilization dose
- Lists 475 species-if species not listed, use closely related species
  - Recommended drug and dose
  - Supplemental drug and dose
  - Antagonist and dose
  - References

**What we know is rarely the problem. It's what we don't do about what we know that gets us in trouble.**

John R. Erickson, Cowboy and Author


THANK YOU
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