

# Golden Eagle Basics

Grainger Hunt

The Peregrine Fund





©Photo by Nick Dunlop

# Golden Eagle Prey in CA and NV





# Territory Occupancy





# Steenhof's rule for estimating the annual reproductive rate of a population

Reproductive rate = the number of large young (ca. 8 wks) per territorial pair

Successful pairs are easier to find than those that fail

Therefore, start early

Steenhof, K. 1987. Assessing raptor reproductive success and productivity. Pages 157-170 in B.A. Giron-Pendleton, B.A. Millsap, K.W. Cline and D.M. Bird [eds.], Raptor Management Techniques Manual. Natl. Wildl. Fed., Washington, D.C.

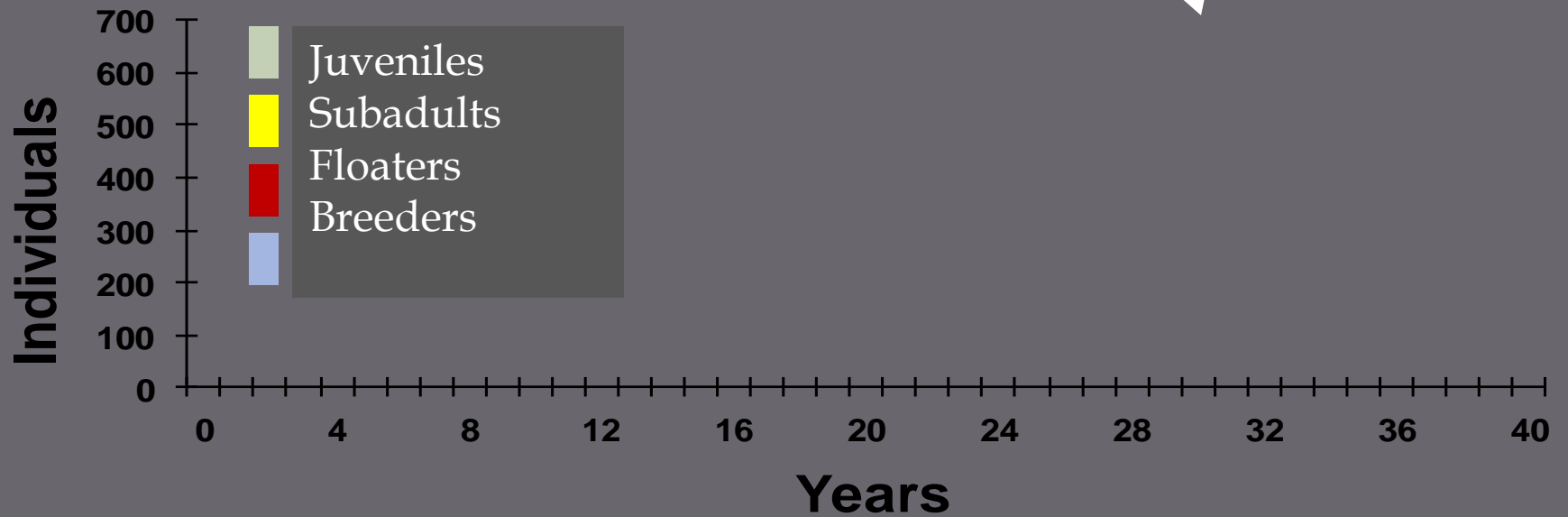


# GROWTH OF A GOLDEN EAGLE POPULATION

Equilibrium



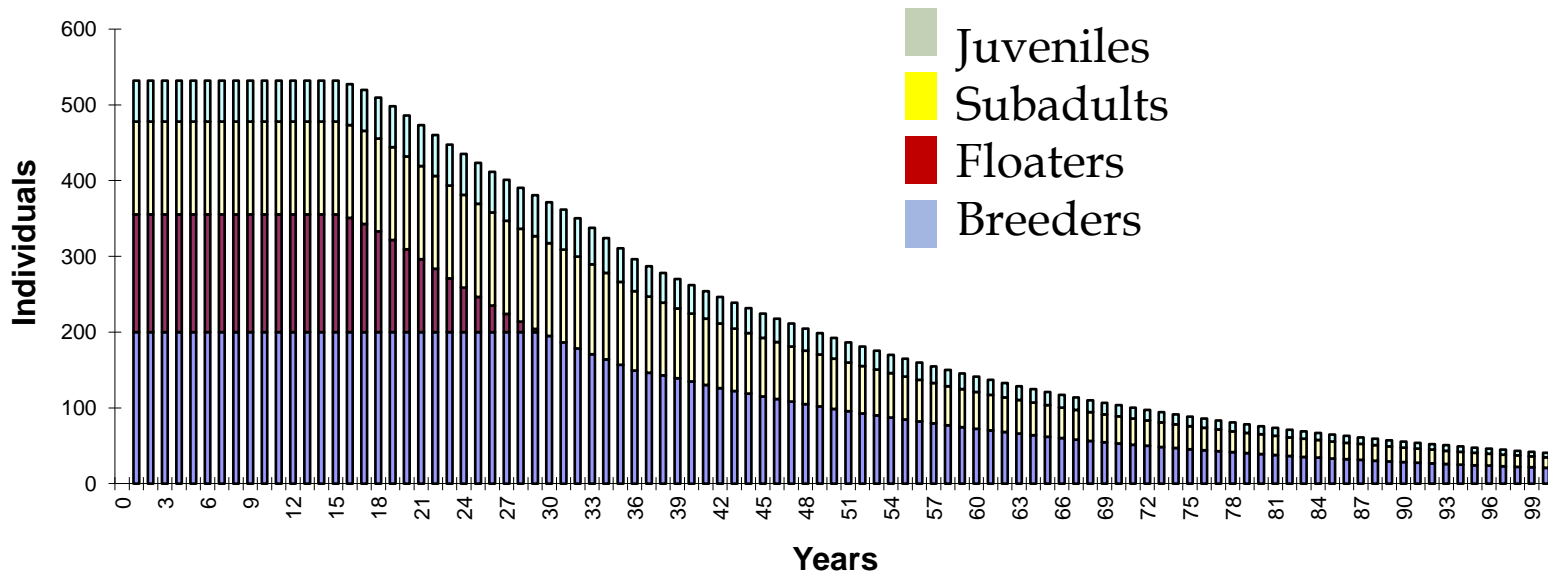
Population structure





# WHEN LAMBDA IS LESS THAN ONE

## Population Structure





# Golden Eagle Mortality Agents

- ▣ **Electrocution**
  - Distribution lines, utility lines, jumper wires, transformer poles
- ▣ Collision with stationary objects
  - Wire fences, electrical wires, guy wires
- ▣ Poisoning
  - **Lead**, predator poisons
- ▣ Collision with moving objects
  - Road vehicles, trains, **wind turbine blades**

# An Eagle Trap



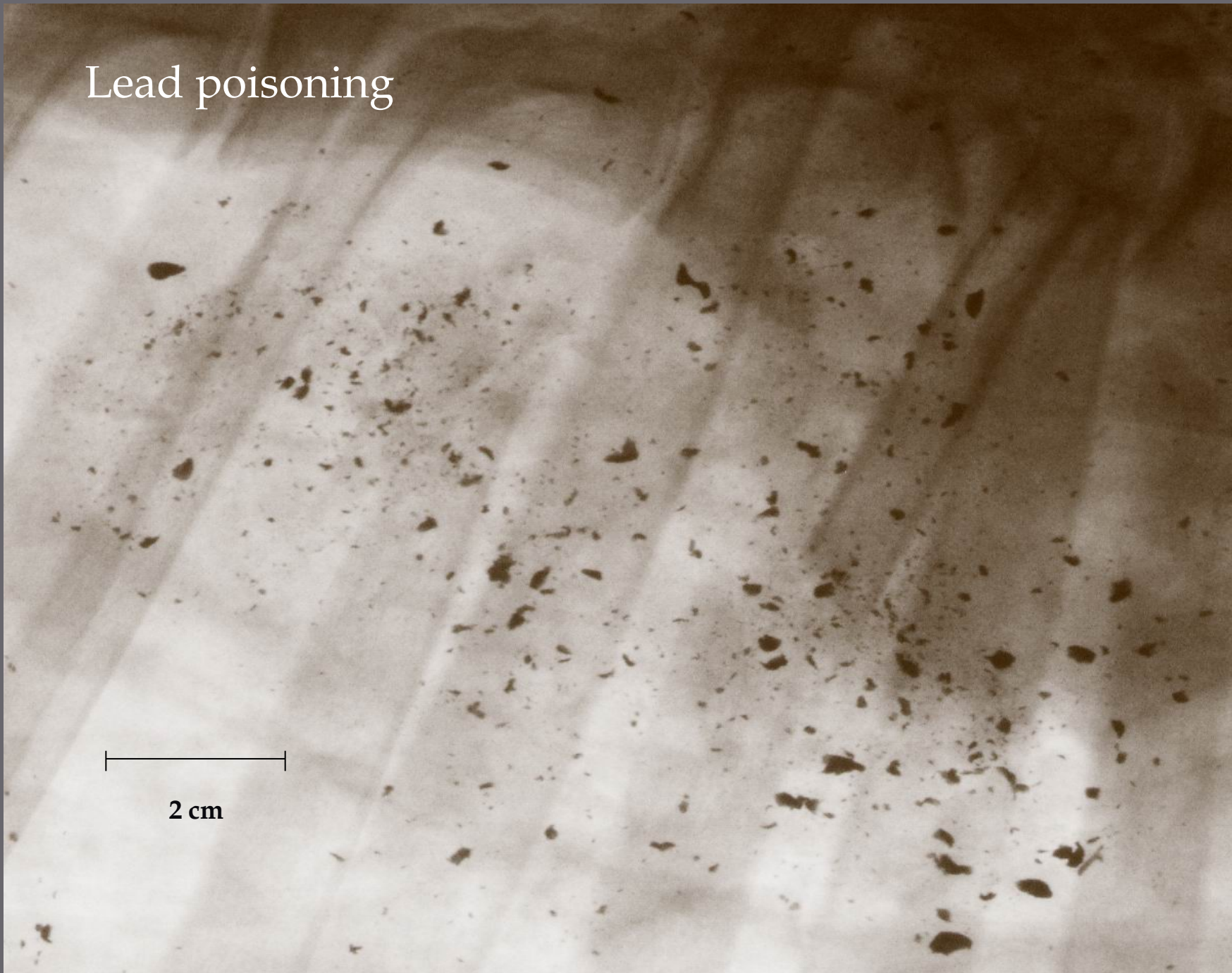
# Eagle-friendly Poles



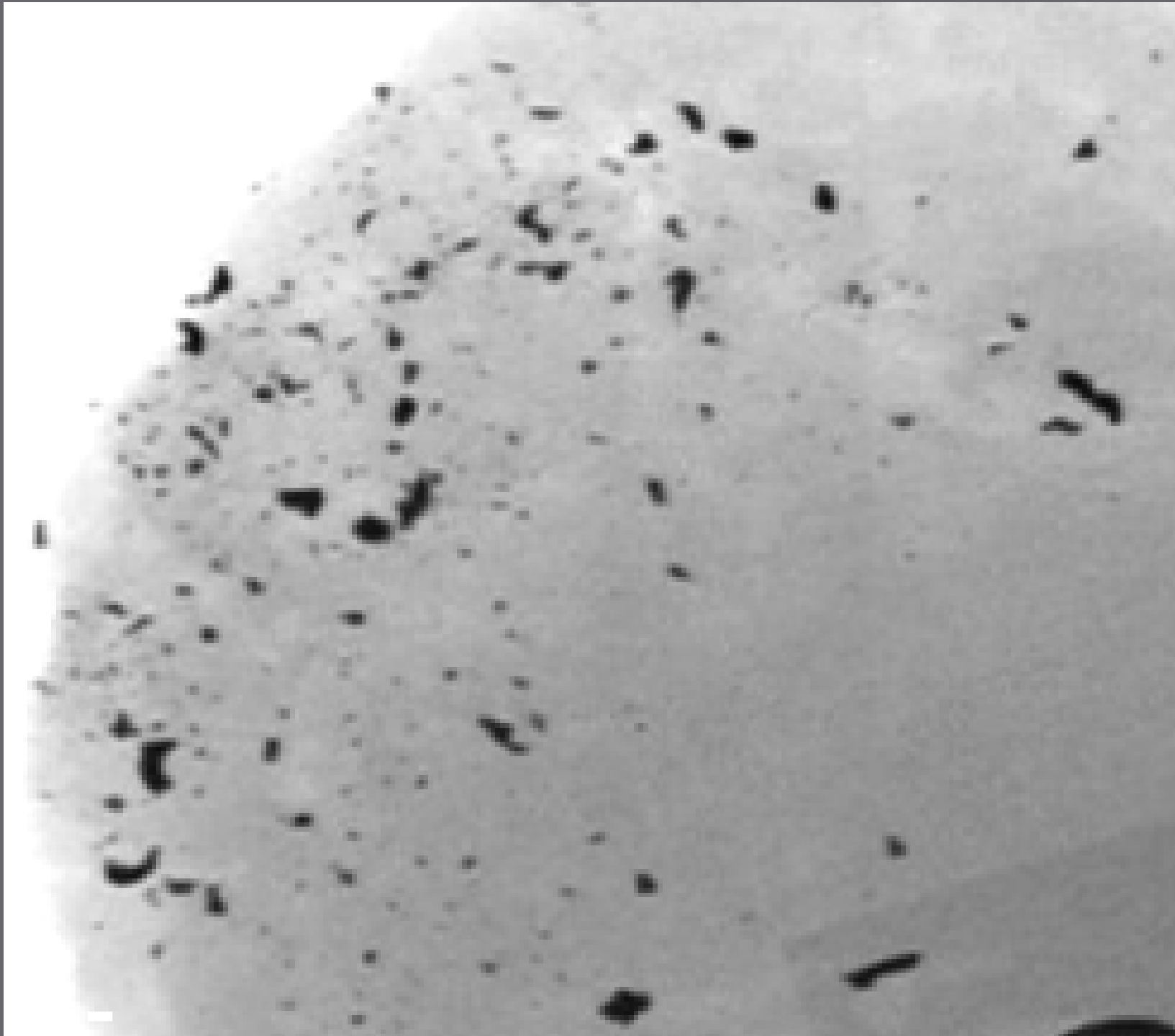
How many golden eagles die this way?



# Lead poisoning

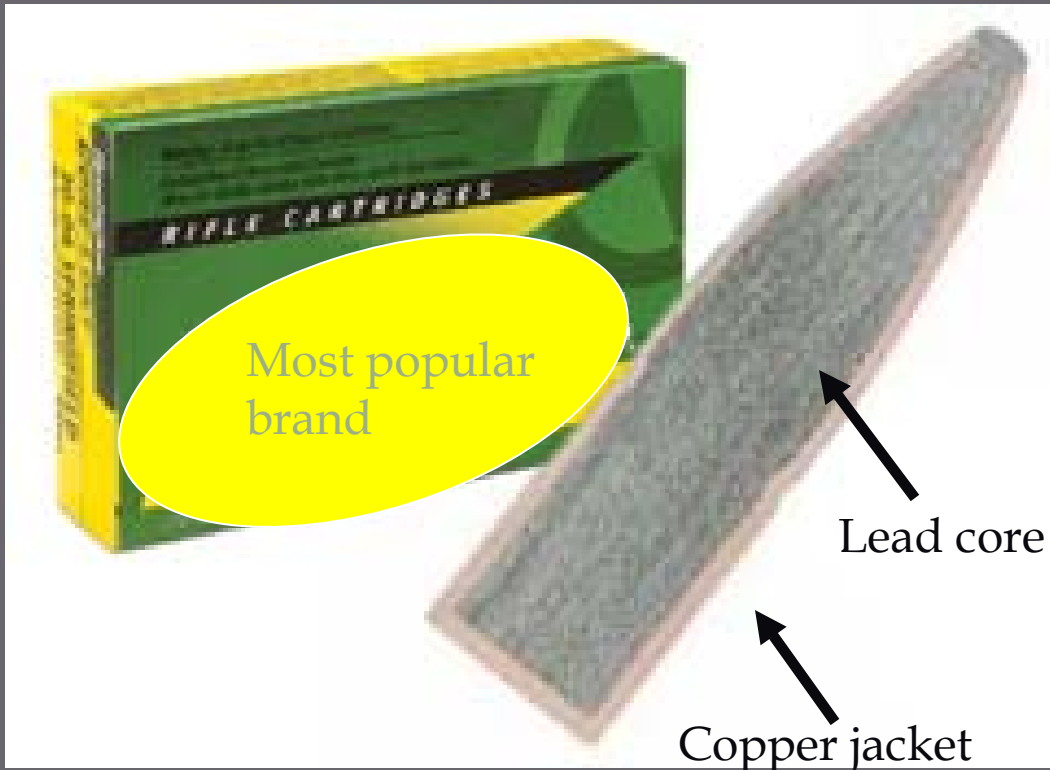


2 cm





# A standard lead-based hunting bullet



As advertized





Unfired bullet

151 grains  
(9.8 g)



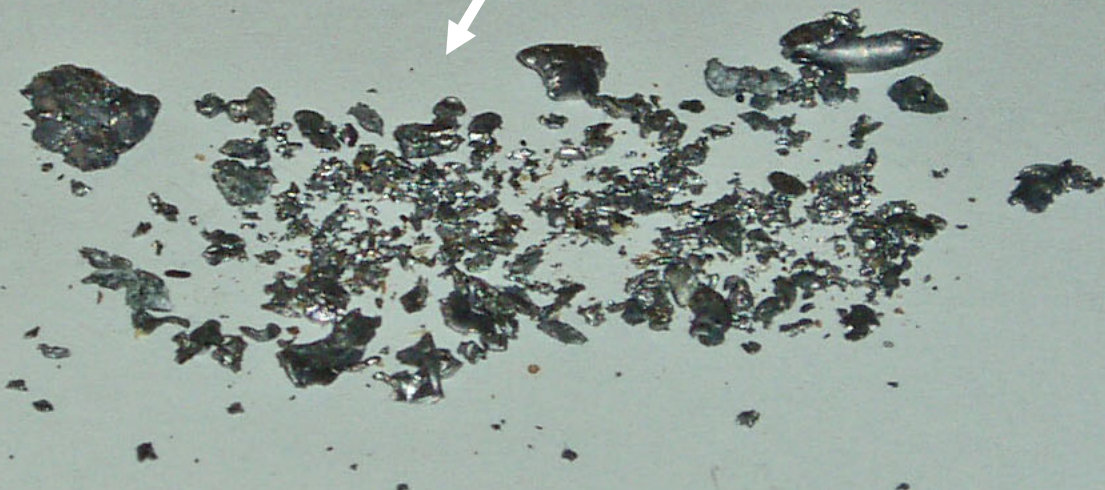
98 grains



Fired into a milk jug  
at 40m



29 grains



24 grains missing → ???

53 grains of fragments = 3,434 mg



Barnes solid copper "X bullets"





# Windfarm Mortality





# How to Minimize Golden Eagle Blade-strike Deaths

1. Develop less-lethal turbines
2. Erect fewer of them
3. Arrange them differently
4. Stop their motion when raptors are present
5. Build wind farms in habitat unsuitable for golden eagles
6. Make habitat within existing wind farms less attractive



## Altamont Pass is a Golden Eagle Trap

Open grassland, numerous ground squirrels, numerous wind turbines





Photo by Jeff Smith





**Windfarms can be raptor traps... Do not bait them!**

