

Chapter 15

History of Large Mammal Management

EARLY HISTORY

- CHRONOLOGIES OF:
 - ABUNDANCE AND EXPLOITATION DURING SETTLEMENT AND SPREAD OF EUROPEAN IMMIGRANTS (1600S-1850S)
 - CONCERN, OUTRAGE, AND STIRRING OF SPORTSMEN TO REDUCE KILLING AND PROTECT REMAINING STOCKS (1850S-1900S)
 - RISE AND EVOLUTION OF EFFORTS TO RESTORE AND SCIENTIFICALLY MANAGE BIG GAME ANIMALS (1900S TO PRESENT)

DEVELOPMENT OF LARGE MAMMAL CONSERVATION IN STATES AND TERRITORIES

- FOCUS WAS RESTRICTING AND APPORTIONING THE TAKE OF REMAINING STOCKS
- STATE AGENCIES FOUNDED MID TO LATE 1870S BUT POORLY FUNDED
- FOCUS WAS ON GAME WARDENS (ENFORCEMENT) AND PREDATOR CONTROL VIA BOUNTIES

DEVELOPMENT OF LARGE MAMMAL CONSERVATION IN STATES AND TERRITORIES

- NEXT, ESTABLISHING GAME PRESERVES AND REFUGES BY TRANSPORTING ANIMALS TO PRESERVES TO RESTOCK RANGES
- NEXT WINTER FEEDING

DEVELOPMENT OF BIG GAME CONSERVATION PROGRAMS AT THE FEDERAL LEVEL

- US BIOLOGICAL SURVEY
- ESTABLISHING NATIONAL PARKS—
SETTING ASIDE LANDS FOR NATURAL
VALUES INCLUDING WILDLIFE
- --YELLOWSTONE NP IN 1872
BEGINNING OF BIG GAME
MANAGEMENT

NATIONAL FOREST RESERVES ACT OF 1897— NATIONAL FORESTS -1905

- US FOREST SERVICE BECOMES LEAD AGENCY
- 1914 US FOREST SERVICE BEGINS TO CENSUS LARGE MAMMALS ON NATIONAL FORESTS
- EFFORTS TO PROTECT ANIMALS AT THIS TIME INCLUDE RESTRICTION OF HUNTING, INCREASED LAW ENFORCEMENT, PREDATOR CONTROL, REFUGES, AND TRANSLOCATION OF ANIMALS TO QUALITY HABITATS

Kaibab Plateau

- **North rim of Grand Canyon (Grand Canyon National Game Preserve set up in 1906)**
- **Area had about 4,000 mule deer – completely protected**
- **In 25 years Government “hunters” killed:**
 - **781 mountain lions, 5,000 coyotes, exterminated the wolf**
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- **By 1924 there were about 100,000 mule deer—despite the reduction in predators, expansion of the deer population was likely the result of the reduction in stocking of large numbers of domestic sheep and cattle on the plateau**
- **Food was getting scarce and that winter thousands of deer died**
- **By 1930 – 30,000 deer remained**
- **A few years later – 15,000 remained**

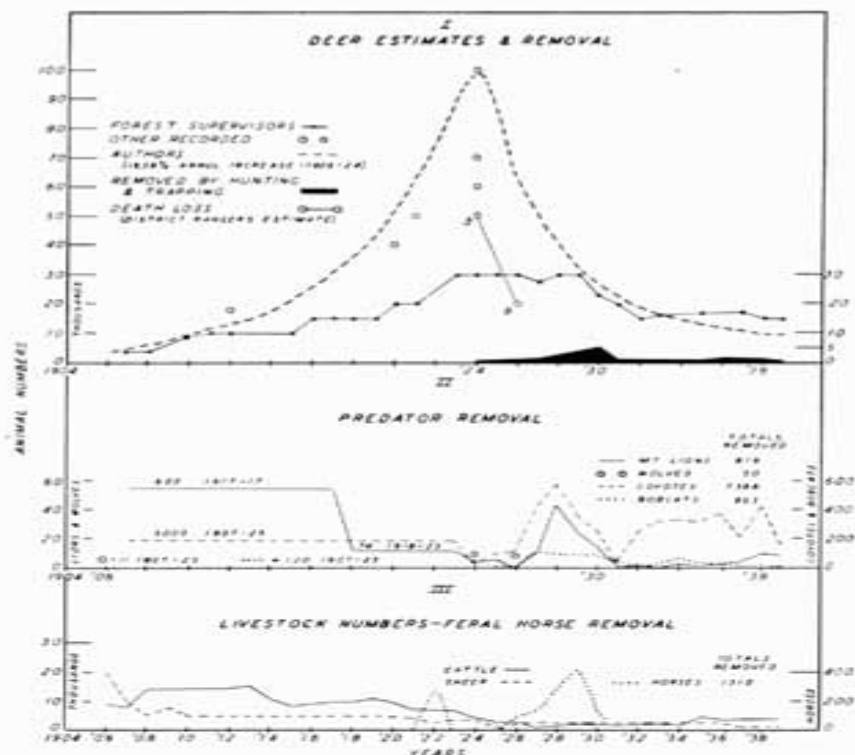


FIG. 5. Estimated numbers of deer and removals; predator removal; livestock numbers and feral horse removal, Kaibab Plateau, Arizona. *I* shows: forest supervisors' estimates of deer numbers recorded in their annual reports based on general estimates previous to 1930, since 1930 based on organized winter counts; also estimated numbers obtained from reports of men visiting the Kaibab Plateau to make observations on the deer. The death loss of 1924-26, record (line a—b) is based on a report by United States Forest Service Ranger Benjamin Swapp, who was in charge of the area where the deer died. The broken line represents an estimated population trend from 4,000 deer in 1906 to near 100,000 in 1924. This represents an accumulative annual increase of 19.58%. Following 1924 a decrease took place due to the die-off, until there was an estimated 20,000 in 1931, and less than 10,000 in 1939. The shaded portion indicates the total removal from hunting, trapping, and fawn removal during the period. *II* gives record of predator removal in the period 1906-39. No lions and very few coyotes were removed in 1931, although trapping for fur and hunting of mountain lions for sport has continued since that date. *III* shows number of livestock permitted on the area from all available Forest Service records and the number of feral or wild horses removed by hunting during the period of 1922-39 inclusive.

STATE CHALLENGES TO EARLY FEDERAL MANAGEMENT PROGRAMS

- REGULATION RETURNED
ADMINISTRATION OF RESIDENT GAME
ANIMALS AND POPULATION CONTROL
TO STATES

BIRTH AND DEVELOPMENT OF SCIENCE-BASED MANAGEMENT-1920-1940

- FEDERAL AID TO WILDLIFE RESTORATION ACT—1937
- FOREST SERVICE DEVELOPS STANDARDIZED GAME AND RANGE SURVEYS
- EARLIEST STATE DEER MANAGEMENT STUDIES CONDUCTED—MICHIGAN
- PROBLEMS WITH OVERABUNDANCE OF BIG GAME POPULATIONS
- FIRST MODERN BOOKS ON MANAGEMENT OF BIG GAME

INTENSIVE MANAGEMENT—1940-1970

- OBJECTIVES

- TO DEVELOP AND SUSTAIN MAXIMUM GAME POPULATIONS CONSISTENT WITH AVAILABLE HABITAT
- TO ENSURE MAXIMUM PRODUCTION AND UTILIZATION OF ANNUAL GAME SURPLUSES
- TO PROVIDE MAXIMUM RECREATIONAL OPPORTUNITIES TO SPORTSMEN

INTENSIVE MANAGEMENT—1940-1970

- FOCUS ON WINTER RANGE USE
(OVERUSE)
- BROWSE AND PELLET GROUP
SURVEYS

Major Data Sets

- Browse condition
- Population size or trend and sex and age from counts
- Harvest estimates or trends, population age structure from check stations

Major Focus Areas

- Game-Livestock Grazing and competition
- Effects of forest practices
- Acquiring winter ranges
- Habitat enhancement
- Deer Wars

EXPANDING HORIZONS AND NEW DIMENSIONS-1970-NOW

- OVERABUNDANCE PROBLEMS WITH GAME SPECIES
- FOCUS ON DEVELOPING INDICES OF NUTRITIONAL CONDITION
- INCREASE IN PUBLIC INVOLVEMENT—
NATIONAL ENVIRONMENTAL POLICY ACT
- ENDANGERED SPECIES ACT—WOLVES
- NOTE: MOST INFORMATION ON LARGE MAMMALS COLLECTED DURING THE LAST 50 YEARS

New Factors affecting Management

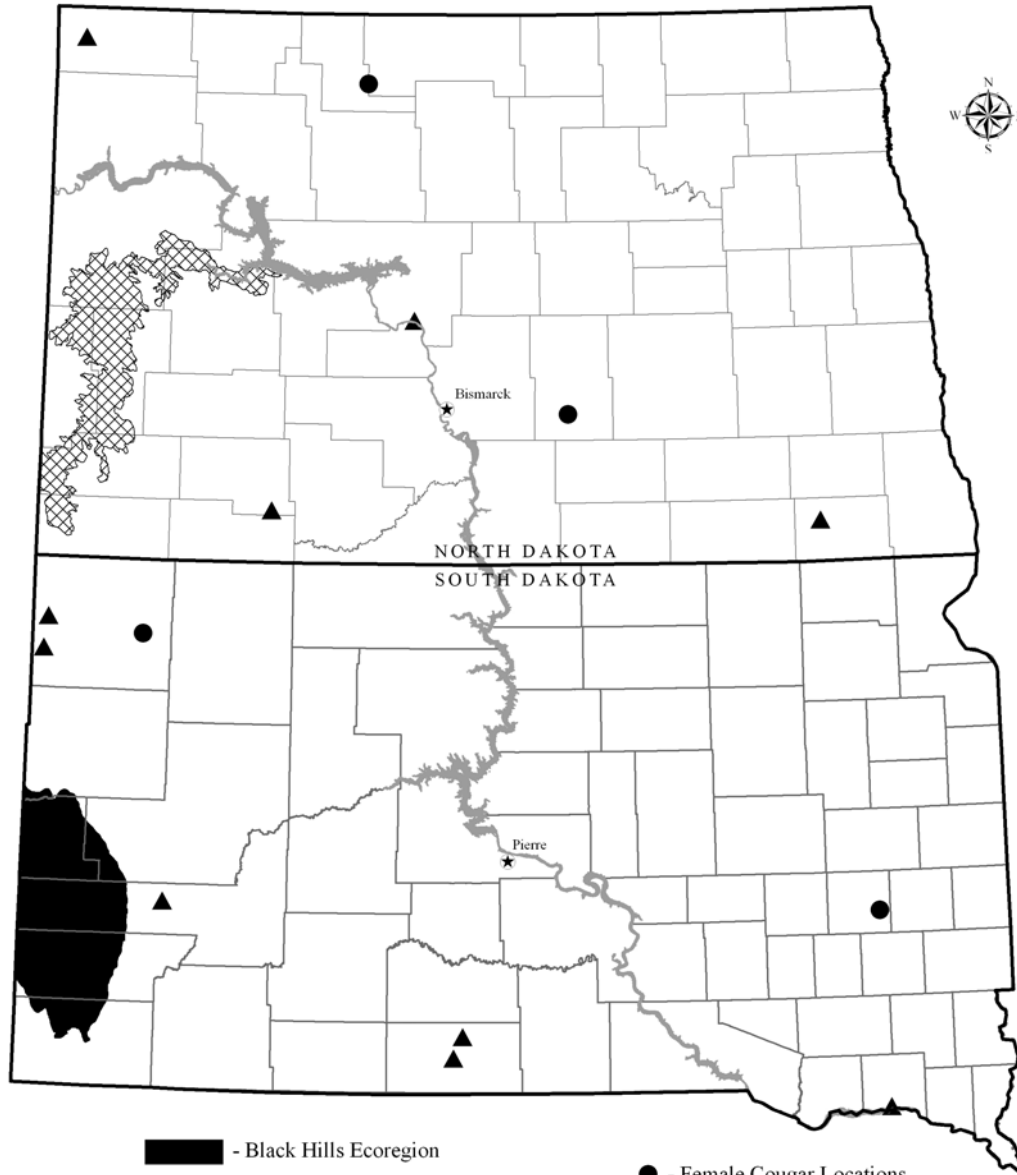
- Use of radio collars
- Use of computers
- Animal welfare and rights
- Endangered Species
- National Environmental Policy Act

HISTORY OF COUGAR MANAGEMENT IN THE US AND CANADA

- 1900—COUGARS EXTERPATED FROM EAST OF THE ROCKY MOUNTAINS EXCEPT FLORIDA
- 1900'S –MANAGEMENT EMPHASIZED PREEMPTIVE ERADICATION
- BOUNTIES PAID UNTIL THE 1950S-1960S
- REMOVAL OF BOUNTIES—POSSIBLE WIDESPREAD INCREASE IN COUGAR POPULATIONS
- 1960-1970—SOME STATES (SD) RECLASSIFY COUGAR AS THREATENED

BASIC PRINCIPLES OF COUGAR MANAGEMENT:

- LANDSCAPE APPROACH
- ADAPTIVE MANAGEMENT APPROACH
- SHOULD CONTAIN INPUT FROM ALL STAKEHOLDERS
- DUE TO NO. 3, COUGAR RESEARCH, MANAGEMENT, AND CONSERVATION SHOULD NOT COME FROM HUNTING-RELATED PROGRAMS ALONE



■ - Black Hills Ecoregion

▨ - Little Missouri Badlands Ecoregion

▬ - Missouri River

● - Female Cougar Locations

▲ - Male Cougar Locations

Frequency of occurrence (%) of prey species in diet of Dakota cougars, 2003-2007.

• Prey Species	N	FreqOcc (%)
• <i>Odocoileus</i> spp.	7	50.0
• Medium size mammals*	4	28.6
• Small mammals**	2	14.3
• <i>Rodentia</i> spp.	2	14.3
• Domestic cat	2	14.3
• Empty	3	21.4
• Vegetation	3	21.4

MAJOR PRINCIPLES

1. IF UNGULATE POP IS IN POOR CONDITION, COUGAR PREDATION HAS LITTLE EFFECT ON PREY BUT IF UNGULATE POP IS IN GOOD CONDITION, COUGAR PREDATION CAN AFFECT RECRUITMENT AND CONTROL COULD INCREASE PREY NUMBERS

MAJOR PRINCIPLES

2. AFTER SUDDEN DECLINE IN PREY K , INCREASE IN COUGAR HARVEST COULD AVOID PROBLEMS CAUSED BY A TIME LAG IN RESPONSE OF COUGARS TO CHANGE IN PREY

MAJOR PRINCIPLES

3. COUGAR PREDATION KEEPS PREY POP AT UNNATURALLY LOW DENSITY

MAJOR PRINCIPLES

4. PRESENCE OF ALTERNATIVE PREY, EXCELLENT PREY CONDITION AND REPRO, HIGH MORT DUE TO PREDATION, AND HISTORIC EVIDENCE OF LARGER PREY POP INDICATE PREDATOR PIT

MAJOR PRINCIPLES

5. MANAGERS SHOULD USE ADAPTIVE MANAGEMENT TO DESIGN CASE STUDIES OF PREDATOR PITS

MAJOR PRINCIPLES

6. COUGAR PREDATION CAN LIMIT SMALL ISOLATED BIGHORN SHEEP POPULATIONS

MAJOR PRINCIPLES

7. TARGETED REMOVAL OF COUGARS
COULD BENEFIT SMALL BH SHEEP
POPULATIONS

MAJOR PRINCIPLES

8. COUGARS SELECT VULNERABLE PREY AND ARE OPPORTUNISTIC

MAJOR PRINCIPLES

9. PREY SELECTION REQUIRES
COMPARISON WITH AVAILABILITY

MAJOR PRINCIPLES

10. COUGARS ARE AFFECTED BY
OTHER CARNIVORES

MAJOR PRINCIPLES

11. COUGARS AFFECT THE STRUCTURE AND DIVERSITY OF ECOLOGICAL COMMUNITIES.