



Mt. Goat

- Pop has not declined
 - Range has expanded
 - CO, MT, OR, SD, UT, WA
- Goat distribution from textbook



Habitat
 High elevation, Open areas
 Generally alpine but some pops below timberline



Near cliffs
 Habitat is island in ocean of forest, steppe, etc
 Why have goat introductions been relatively successful?

Introduced Populations

- Management in National Parks
- In Rocky Mountain NP
 - will be removed if it shows up
- In Olympic NP
 - Introduced and did very well
 - Overgrazing and “digging” to make beds
 - Activity at mineral licks a problem
 - Trapping and transplanting

Harvest

- Would unlimited license sale be good idea?
 - Open habitat makes goats susceptible to firearm harvest
 - Island-like habitat limits movement from lightly harvested populations to areas of heavy harvest
 - Goats not sexually dimorphic
- Harvest conservative and closely monitored
 - Census populations and set quotas (4-7% of fall pop)
 - Lottery used to issue licenses



Big Horn Sheep

- Pop decline from 1.5-2 million to 70,000
- Small, fragmented pops, <100 sheep
- CO pops stable or increase in 1990s
- Dall and Stone sheep a different species in NW Canada and AK.

Big horn sheep range from textbook





Sheep Decline

- WSB 16:346-352
- Early decline due to unregulated hunting
- Now harvest closely monitored; poaching likely to be for large males, which would not reduce pop growth rates
- Populations still declining
- Why? Must understand species' ecology

Sheep Evolution

- Sheep evolved in glaciated mountains with abundant predators. Predator evasion strategy
 - Forage diurnally Predators easy to see
 - In large, dispersed groups Many eyes
 - In open habitat Pred & sheep visible
 - Near escape cover Run to escape cover
- Characteristics of sheep habitat:
 - High visibility
 - Abundant, continuous forage
 - Cliffs for escape terrain

Sheep Ecology

- These conditions found in special spots in the landscape
- A sheep herd may have several of these spots within its home range
- Herd moves among these spots
- Moving among areas important part of sheep ecology
- What are advantages of moving through the landscape?

Sheep Movement

- Advantages of moving around the landscape:
 - Respond to weather and patterns in forage avail.
 - Provides options when sheep are disturbed
 - Allows for gene flow among herds
 - Increases prob that unoccupied, suitable habitat will be colonized
 - Enables large herds to exist
 - Reduces chance of disease problems

Sheep Decline

- Variety of changes disrupt movement patterns
 - Human caused changes: roads, reservoirs, development, fire suppression
 - Succession: Grass → Shrubs → Forest
 - Pop declines → Loss of knowledge of movement patterns and corridors
- Results in small, isolated, sedentary herds
- This sets up a cycle from which it is difficult for sheep populations to recover

WSB 16:346-352 Fig. showing cycle of sheep decline

Management Efforts

- Range protection and improvement
 - Try to improve winter range; may not be limiting
 - Open travel corridors; create more suitable habitat
- Transplants
 - Often sheep put back into areas they were once found without evaluating current habitat
- Drug treatment
 - Must address cause, not symptoms (JWM 64:505)
- Protect habitat and corridors, create new habitat
 - What techniques?