SAGE-GROUSE & HABITAT: MEET AND GREET

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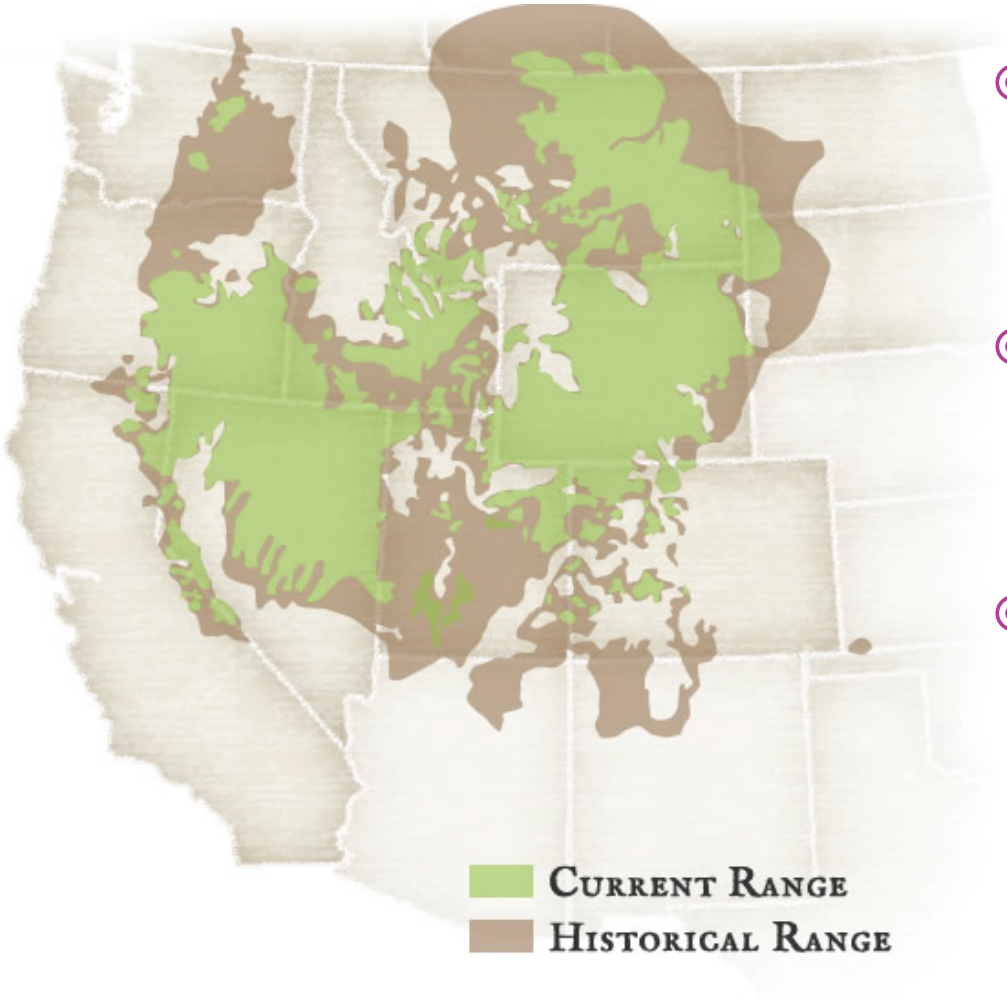
DESCRIPTION

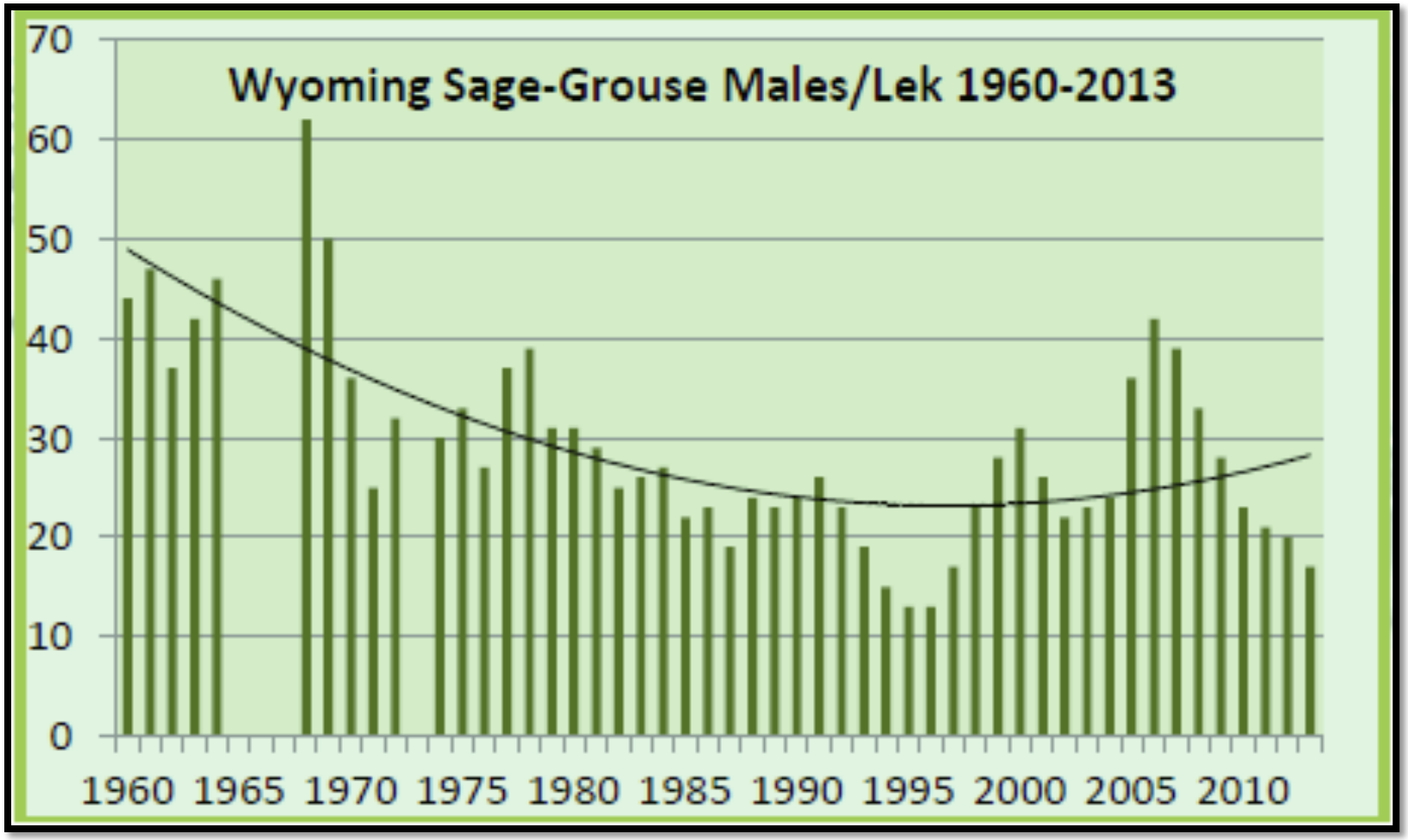
- Largest of the 7 North American grouse spp.

DISTRIBUTION



- Closely aligned with sagebrush distribution
- 75% of population within 27% of the range
- 54% of SG populations in Wyoming

POPULATION (LEK ATTENDANCE AS INDEX)



Sage-grouse Ave. Males/Lek in Wyoming 1960-2009 (Min 100 leks checked each year).

CHICK PRODUCTION

- Ratio of chicks/hen determined from wings of hunter-harvested sage-grouse.
  - 2013 Statewide average =1.08
  - Need 1.4-1.6 to maintain
  - 1.8 to grow.

MATING SYSTEM

- Lekking species

NESTING

- Within a few miles of the lek
- Pre-nesting nutrition important
- Nest-initiation variable
- Clutch size is 6-10 eggs
- Some hens may re-nest if nest fails
- Brood success variable

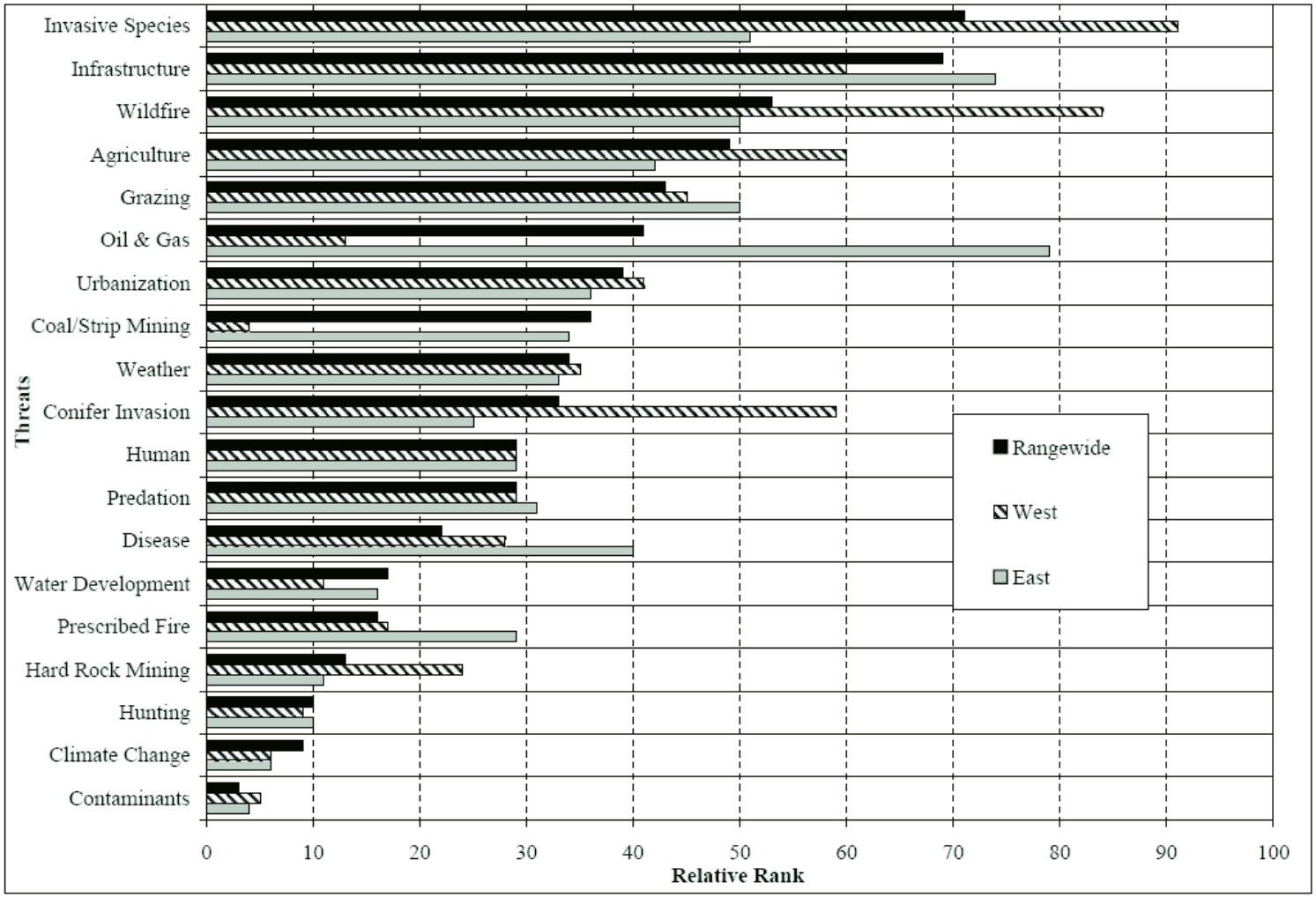
CHICKS/ BROOD-REARING

- Hatch within 25-29 days
- Fly weakly by 10 days, long distance by 5 weeks
- Broods stay together for 10-12 weeks
- Early brood near nesting sites
- Late brood in mesic areas
- Diet= forbs and insects
- Increasing sagebrush consumption

WINTER

- Sagebrush availability primary factor
- Migratory vs. non-migratory populations
  - Linked to availability of seasonal habitat types within area

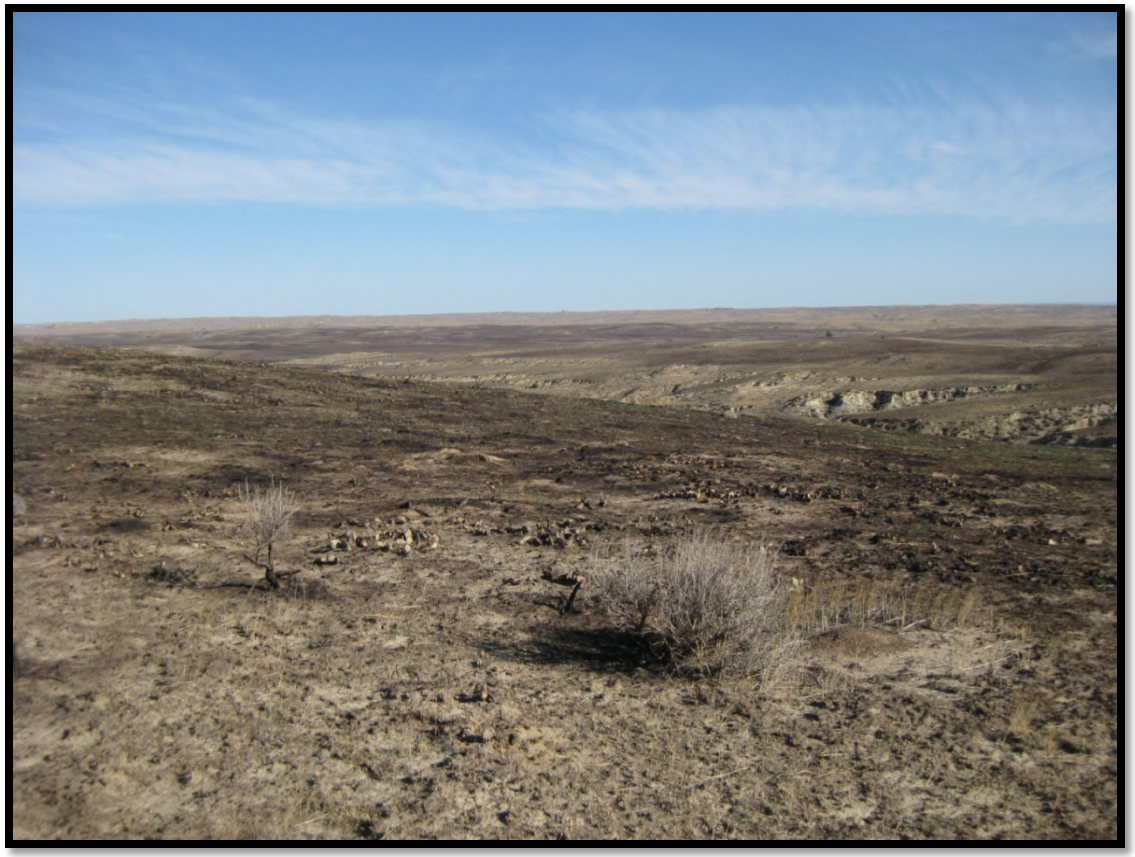
THREATS & LIMITING FACTORS



Threats to sage-grouse as ranked by an expert panel convened by the U.S. Fish & Wildlife Service in 2004. The rationale for these rankings can be found in the final listing decision document (U.S. Fish & Wildlife Service, 2005).

THREATS/LIMITING FACTORS

- Landscape/Rangewide-scale
  - Primarily habitat fragmentation and loss



THREATS/LIMITING FACTORS

- Population-scale
  - Factors such as predation, disease, weather
- Local-scale
  - Habitat “quality” –primarily during nesting and brood-rearing
  - Scale at which land managers can have a direct impact

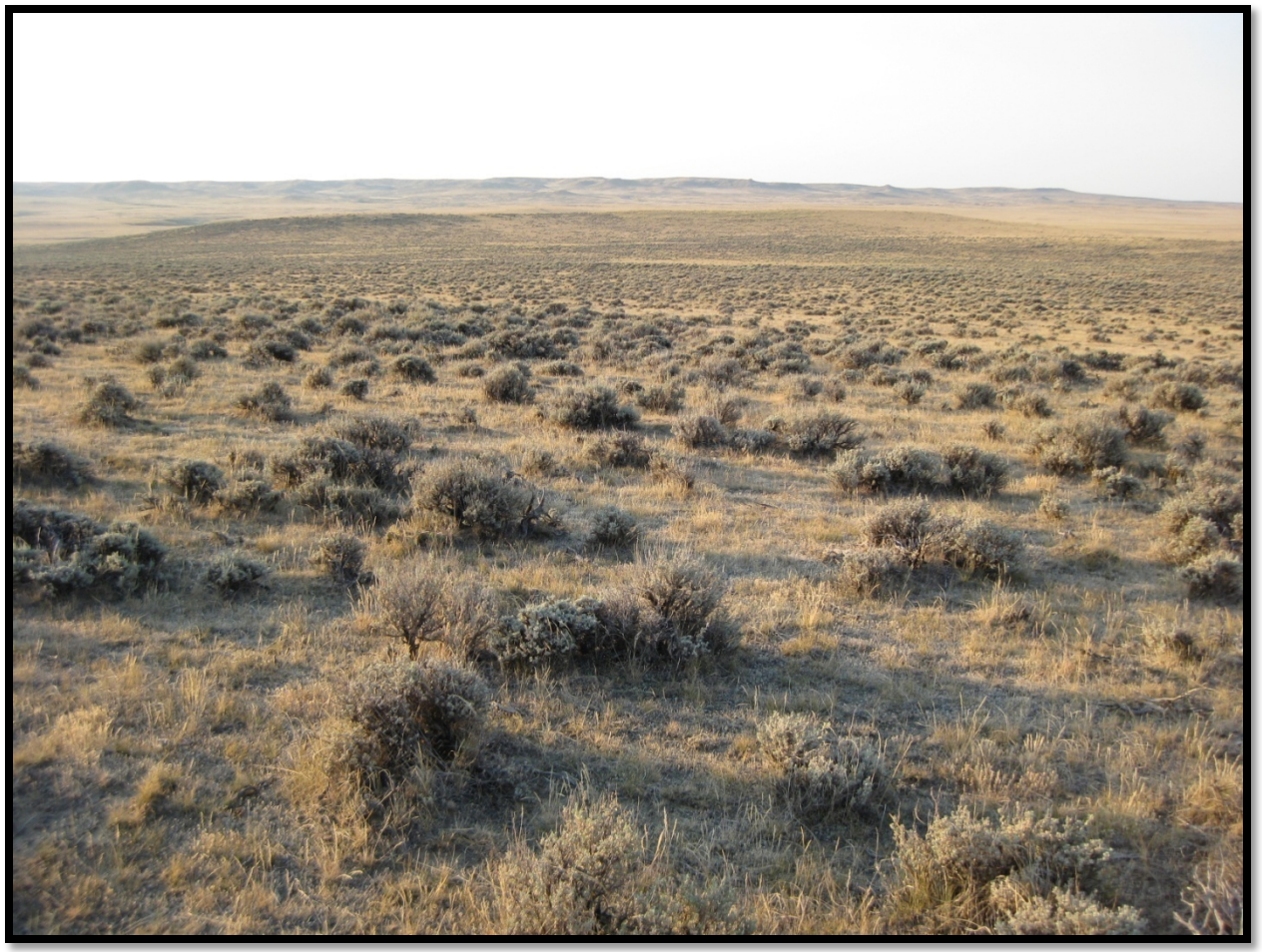
HABITAT QUALITY

- Defined as the degree to which habitat influences individual fitness and survival
  - Vegetative Cover
    - "Hiding" cover from predation
    - "Thermal" cover for weather
      - Sagebrush and residual grass cover
  - Forage
    - Succulent forbs
      - Resulting increase in insects
    - Sagebrush

INFLUENCE QUALITY?

- Cover
  - Maintenance of residual grass cover
    - Grazing management

INFLUENCE QUALITY?



Adequate sagebrush cover, could use residual grass cover improvement

INFLUENCE QUALITY?

- Excellent residual and sagebrush cover

INFLUENCE QUALITY?

- Cover
  - Maintenance of sagebrush cover
    - Esp. Wyoming big sagebrush in <14in precip zones

INFLUENCE QUALITY?

- Cover
  - Reduce fire potential
    - Cheatgrass management
  - Proper utilization
    - Domestic and wildlife
  - Avoid direct removal or displacement

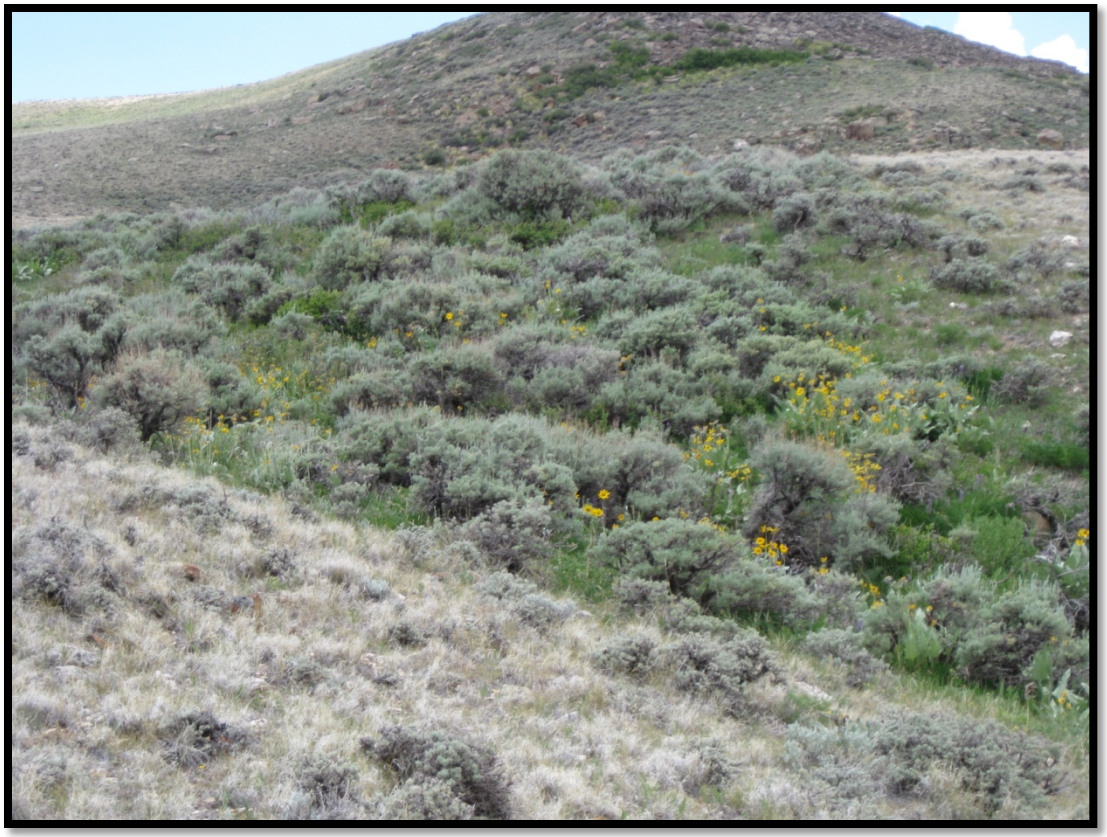
Cheatgrass in sagebrush community

INFLUENCE QUALITY?

- Forage
  - Forbs
    - Big influence for a small period of time
    - Important for pre-laying and brood nutrition
    - Insects, brood forage source, increase with forb abundance
      - Key factor to maintenance: grazing and weed management

INFLUENCE QUALITY?

- Forage -Forbs
  - Protection/management of mesic draws and riparian areas



INFLUENCE QUALITY?

- Forage
  - Sagebrush
    - Similar considerations as cover factor.

- Common theme of sagebrush cover?
  - How do we get back something that's lost and takes decades to centuries to return naturally?

RESTORING SAGEBRUSH COVER

- Diff b/w reclamation and restoration
- Restoration
  - Typically following fire or sagebrush spraying
  - Good herbaceous understory
  - Existing grass competition limits sagebrush seeding success
  - Sagebrush **seedling plantings** may be an option

SAGEBRUSH SEEDLINGS

SAGEBRUSH GROWTH

- Typically green-house grown, bare-root stock may come from outside location
  - Grown for 3 months
  - Hardened for 2 weeks
- Fall planting
  - Typically growing season growth and outdoor dormancy
- Spring planting
  - Previous year plants overwintered and dormant or new plants green-house grown and hardened off.

INCREASING SUCCESS

- Native soil for mycorrhizal benefits
  - Increase nutrient and water absorption by plants
- Microsite planting
  - Locating plantings where more moisture can accumulate
- Protection
  - From herbivory and trampling
- Competition Reduction
  - Weed barrier, scouring, mulching, etc.

OBJECTIVES

- Design is directly associated with objectives
  - Create seed source for future establishment
  - Plant at densities to achieve functioning sage-grouse habitat in the short-term
  - Increased snow retention

"ANTI-QUALITY"

- Controllable factors that may increase mortality
  - Predator perches/hiding places
    - Remove non-functioning structures, powerlines, etc.

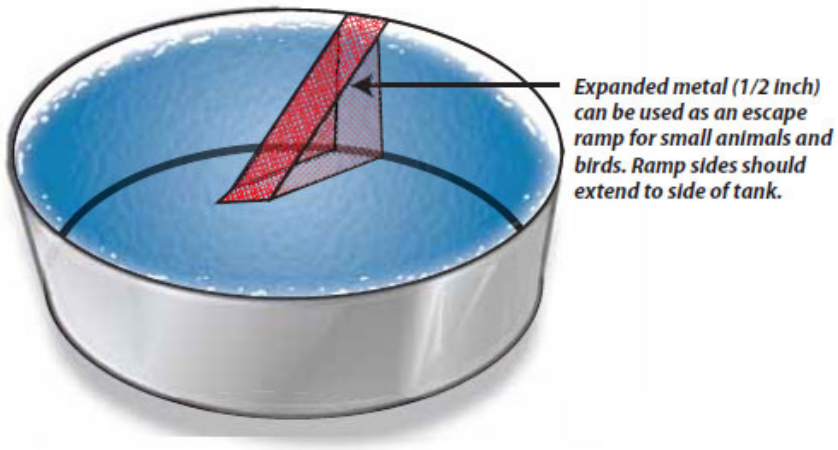
"ANTI-QUALITY"

- Un-marked fences
  - Typically more of an issue in open, flat country, near leks.

"ANTI-QUALITY"

- Man-made water sources
  - Mosquito (vector for West Nile) havens
    - Reduce shore-line and emergent vegetation
  - Install water tank escape ramps

LIVESTOCK WATER TANK WITH ESCAPE RAMP



(Note: No obstructions or obstacles should be present on the surface to allow birds and bats to skim water.)

SUMMARY

- Sagebrush cover, residual grass, and forbs are primary factors of quality habitat
- Grazing and weed management are important factors controlled by individual land managers that influence quality habitat
- Maintenance of sagebrush is critical, planting where it's lost may be an option
- Reduce "anti-quality" factors that may result in direct mortality

QUESTIONS?