

Western Livestock/Range Research Center



A Federal State Partnership to support economic well-being of western sheep/livestock production

Partnerships

- **The United States Sheep Experiment Station**
- University of Idaho
- **The Animal Disease Research Unit**
- Montana State University
- Utah State University
- Washington State University

Rationale

- These partners bring together the resources (human and infrastructure) to solve complex problems facing sheep/livestock production
- There must be an integrated approach flock/herd health directed at rangelands, health and social challenges such as wildlife management
- Loss of resources to independent voices provides advantage to “foundation” funding

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Control of Infectious Diseases

Maggie Highland & Don Knowles

- Question: What is precedent for attempting to control endemic infectious disease by culling (killing) populations that contain clinically ill members?
- Endemic infectious diseases are controlled by acquisition of immunity through exposure/recovery and/or vaccination.

Control of Infectious Diseases

- If current method of endemic disease control is followed through (this is not a suggestion that it should be) it dictates that all bighorn populations must be tested for *Mycoplasma ovipneumoniae* (for instance) and any herd found to be positive must be destroyed

Control of Infectious Diseases

- Pathogen strains and isolates: Isolate – defined by location where obtained. Strain – different levels of definition up to complete sequence of pathogen genome.
- Depending on the level of definition, strains are used to define pathogen movement (epidemiology), pathogen ability to cause disease (virulence), how pathogens cause disease (pathogenesis), and components of pathogen that induce immunity.
- These definitions of strain when known and combined are a powerful tools in guiding control of infectious diseases. **These definitions are not known for *Mycoplasma ovipneumoniae*.**

Control of Infectious Diseases

- The focus on reservoir sources of infectious diseases is only one component of endemic infectious disease control, it is paramount to look broadly at all possible influences on bighorn herd health, including management practices.
- Current risk models, what do they actually predict?