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Comments:
I am writing to comment on elements of the Draft Revised Forest Plan for Custer Gallatin National Forest which pertain to the use of pack goats. Alternatives B, C, and D listed under the Suitability section (FW-OBJ-REC) would prohibit the use of pack goats on all or significant portions of the Custer Gallatin National forest. The apparent motivation for prohibiting pack goats is to minimize the risk of disease transmission from domestic sheep and goats to bighorn sheep.

I support efforts to protect wild bighorn sheep, however, I do not believe banning pack goats is necessary to protect bighorn sheep.

I recommend that the forest service continue to allow the use of pack goats (Alternative E). The forest service could also either recommend or require pack goat users to follow best management practices to limit the chance of pack goats coming in close contact with bighorn sheep. Best management practices that would limit the chance of pack goats contacting bighorn sheep would include tying up packgoats at night, and not allowing pack goats and wildlife to approach each other.

Throughout the Draft Forest Plan the phrase "domestic sheep and goats" is often used when discussing possible disease transmission to bighorn sheep. However, scientific studies have shown that the risk posed to bighorn sheep by domestic goats is much lower than the risk posed by domestic sheep. Because of the small size of pack goat strings and the close personal supervision involved in taking them into the forest, it is also more practical for pack goat users to mitigate potential risks to bighorn sheep through best management practices than it may be for owners of large herds of livestock grazing or controlling brush on the national forest.

Diseases from many domestic and wild animals can kill bighorn sheep, but diseases passed from domestic sheep, particularly pneumonia caused by the bacteria Mycoplasma ovipneumoniae (Movi) poses the most significant threat to bighorn sheep populations. A compilation of scientific studies put together by Montana Fish Wildlife and Parks which is available at http://fwp.mt.gov/fwpDoc.html?id=81875 showed the percentage of bighorn sheep that died after being purposely commingled livestock varied depending on the type of disease carrying livestock the bighorn sheep were exposed to. 95% of the bighorn sheep commingled with domestic sheep died, 17% died after exposure to horses, 12.5% after exposure to domestic goats and 11% died after exposure to cattle. (studies cited where Foreyt: 1982, 1989, 1990, 1994, 1996, 1998, 2009; Onderka1988; Besser2012&2016).

A more recent study (Besser TE, Cassirer EF, Potter KA, Foreyt WJ. Exposure of bighorn sheep to domestic goats colonized with Mycoplasma ovipneumoniae induces sub-lethal pneumonia. PLoS One. 2017 Jun 7) commingled bighorn sheep with domestic goats infected with the movi bacteria. While goats and sheep can carry the Movi bacteria, the strain of Movi carried by goats was found to be less harmful to bighorn sheep than the stain carried by domestic sheep. In this study none of the bighorn sheep exposed to domestic goats died.

The scientific data above show that the strain of Movi carried by domestic goats is did not kill any of the exposed bighorn ship, the strain of Movi carried by domestic sheep is very often lethal to bighorn sheep.

Studies of the prevalence of Movi in domestic sheep herds and pack goats show that movi is quite common in domestic sheep, but rare in pack goats. Movi was found in 90% of the 450 domestic sheep flocks studied by the USDA Center for Epidemiology and Animal Health (https://www.aphis.usda.gov/animal_health/nahms/sheep/downloads/sheep11/Sheep11_is_Myco.pdf). In the infected flocks, 60% of the domestic sheep carried the Movi bacteria. In contrast, research conducted in 2016 by Dr. Maggie Highland, a Veterinary Medical Officer and Researcher with the USDA-ARS-Animal Disease Research Unit, in collaboration with USDA-APHIS personnel found only 30 of 576 (5.2%) of pack goats tested positive for the Movi bacteria. Of the goats that tested positive 27 of 30 (90%) were less than a year old, which means they would be too young to carry a pack.

Research currently being conducted under Federal Aid in Wildlife Restoration Grant W-159-R by Dr. Robert Garrott, Et al. found that most herds of wild bighorn sheep sampled already carry Movi and several other pathogens. Movi was detected in every bighorn sheep herd that was sampled in the Custer Gallatin National Forest. (The 2016 annual report is available here:http://www.mtbighorninitiative.com/mtbi-science.html) Many of the herds found carrying pathogens associated with die offs are not experiencing disease outbreaks.While these pathogens may have originated in domestic animals, they are likely to persist in bighorn sheep even if the herds do not continue to commingle with domestic animals.

In summary, domestic sheep, horses goats and cattle can pose a risk of disease transmission to bighorn sheep. Domestic sheep should not be grouped with domestic goats when evaluating potential impacts to bighorn sheep because domestic sheep pose a much higher risk to bighorn sheep than domestic goats.

The nature of packing with goats reduces potential risks to bighorn sheep and provides opportunities to utilize best management practices. Pack goat users typically only make occasional trips of short duration to the forest, and attend their small group of goats at all times. This minimizes the likely hood of close contact between pack goats and bighorn sheep. The small size of most goat pack strings also limits the chance that there is a goat in the group that is infected with a pathogen. When compared to large groups of domestic animals on grazing allotments or used for weed control, a string of pack goats is much less likely to come into direct contact with bighorn sheep, and the pack goat string is less likely to be carrying potentially harmful pathogens.

Allowing continued use of pack goats (Alternative E) supports desired conditions including providing sustainable recreational activities and improving access for persons unable to carry a heavy pack, such as the elderly and/or disabled. Use of pack goats is sustainable because they have a low impact on resources.

Thank you for your consideration,
Zeb Breuckman