

Questions and Answers on Proposed Regulation to Protect Dall's Sheep on Arctic National Wildlife Refuge

1. What are the proposed regulatory changes being considered?

The Arctic National Wildlife Refuge's Revised Comprehensive Conservation Plan (CCP) <https://www.fws.gov/home/arctic-ccp/>, approved in 2015, directs that "domestic, sheep, goats, and camelids are not allowed on Arctic Refuge" (Chapter 2, 2.4.12.9 Disease Prevention and Control). It further states that this restriction is subject to the promulgation of regulation. The following regulation change to 50 CFR fulfills that directive:

50 CFR § 36.39 (k) Arctic National Wildlife Refuge.

(1) All domestic sheep, goats and camelids are prohibited.

ANILCA Section 1110(a) and 43 CFR 36.11 outline Special Access provisions for Refuge lands in Alaska, including the use of non-motorized surface transportation. However, the United States Fish and Wildlife Service (USFWS) may close an area on a temporary or permanent basis if the agency finds that such a use would be detrimental or poses unnecessary risk to the resource values of the area. It can be stated that the proposed prohibition on domestic sheep, goats and camelids on Refuge lands is reasonable and prudent given the disease threat they pose to the wild Dall's sheep populations in the Eastern Brooks Range, thereby being consistent with the legal justification for permanent restriction. Recent information and research illustrates Dall's sheep are susceptible to disease transmission from interactions for domestic sheep, goats and camelids causing considerable health concerns.

2. Why is the U.S. Fish & Wildlife Service considering these changes?

Certain disease organisms, viruses, or vectors of disease may threaten human health or the health and survival of native wildlife or plant species. These threats may be managed or eliminated through the implementation of options in consultation with the State and other concerned parties. In this case, domestic sheep, goats and camelids (i.e. Llamas and alpacas) have been categorized as likely vectors for pathogen delivery to wild ungulate populations, especially Dall's sheep and to a lesser extent, other wildlife such as caribou.

A number of studies have clearly shown that domestic sheep and goats can transmit pathogens to wild populations of sheep if they live in close proximity to and/or within wild sheep ranges. There are fewer studies investigating the potential transmission of pathogens from camelids to wild sheep. However, the lack of scientific studies investigating pathogen transmission between camelids and wild sheep does not mean that transmission does not or cannot occur. There is consensus among wildlife biologists and veterinarians that maintaining healthy sheep populations requires that we err on the side of caution by preventing contact between domestic sheep, goats, camelids and wild sheep throughout their ranges, including on the Arctic National Wildlife Refuge.

Numerous studies document the risk of pathogen transmission from domestic goats and sheep to wild sheep. Drew and Weiser (2017) found that several pathogens and parasites common to domestic goats pose a threat, especially contracting pneumonia, to wild sheep. In experiments in which domestic goats and wild sheep were housed together, Besser et al (2017) determined that goats transmitted pneumonia (via *Mycoplasma ovipneumoniae*) to the wild sheep. Mlodik (2012) carried out a risk analysis of disease transmission from domestic goats and sheep with bighorn sheep. He found that bighorn population die-offs (commonly caused by bacterial pneumonia) are closely correlated with recent contact with domestic goats or sheep. Garde et al. (2005) identified nine pathogens common in domestic goat and sheep that threaten Dall's sheep: *Mycobacterium avium paratuberculosis*, *Mycoplasma onjunctivae* and *M. ovipneumoniae*, *Pasteurella spp.*, *Mannheimia haemolytica*, contagious ecthyma, Parainfluenza-3, *Muellerius capillaris*, and *Oestrus ovis*. They found that contact between domestic sheep or goats and wild sheep would likely cause widespread disease in wild sheep and recommended goats not be used as pack animals and both sheep and goats not be pastured within Dall's sheep range.

While few peer-reviewed studies have directly investigated the transmission of pathogens from camelids to wild sheep, there have been assessments that advise caution. Schwantje and Stephen (2003) stated that llamas commonly carry pathogens that can cause disease in wild ungulates. They expressed particular concern for fecal-borne disease, such as Johne's disease, and *Pasteurella spp.* Johne's disease is fatal, easily transmitted among ruminants, long-lived in the environment, and has no known treatment. In another study by the Centre for Coastal Health (2017), seven common camelid pathogens were identified that could potentially present significant risks to wild sheep populations: *Mannheimia haemolytica*, *Pasteurella spp.*, contagious ecthyma, bovine viral diarrhea virus, *Mycobacterium avium paratuberculosis* (Johne's Disease), Bluetongue virus, and *Mycobacterium bovis*. They concluded that *M. haemolytica*, *Pasteurella spp.*, contagious ecthyma, and Johne's Disease (*Mycobacterium avium subsp. paratuberculosis*) were of particular concern. Both studies expressed a high level of concern regarding disease transmission from contact between camelids and wild sheep and their habitat.

The Arctic National Wildlife Refuge exemplifies the pristine and wild qualities of Alaska and North America, and the prohibition of these animals is intended to maintain these qualities. Although we have not yet detected disease transmission from domestic stock to wild ungulates in the Arctic National Wildlife Refuge, out of an abundance of caution, we want to minimize potential disease vectors.

3. Why is the U.S. Fish and Wildlife Service proposing prohibiting sheep, goats and camelids, but not other traditional pack animals such as horses and mules?

Current scientific knowledge and evidence suggest that domestic sheep, goats and camelids pose the greatest threat of disease transmission to Dall's sheep. Horses are only distantly related to wild sheep as compared to sheep, goats, and llamas/alpacas. There are some important differences between horses and the animals included in this proposed rule as it relates to disease presence and transmission. Horses present a species barrier (a natural mechanism that prevent a virus or disease from spreading from one species to another) that provides some protection

against disease transmission due to taxonomic distance and physiologic differences between even-toed ungulates (sheep and alpacas are included) and horses.

4. Why is the USFWS proposing to ban camelids when Alaska Department of Fish and Game regulations and Western Association of Fish and Wildlife Agency (WAFWA) recommendations focus solely on domestic sheep and goats?

Various public land and wildlife agencies and wildlife associations are guided by their own unique set of laws, mandates, regulations, policies and directives. Policies and management direction also evolve and change as more information and greater awareness are achieved. Organizational flexibility is vital as new challenges and/or threats emerge that previous plans or regulations either did not address or did not foresee.

The Arctic National Wildlife Refuge establishing legislation is the Alaska National Interest Lands Conservation Act, which defines the Refuge's purposes. The first purpose of the Refuge is to conserve fish and wildlife populations and habitats in their natural diversity. As outlined in the answer to question 2, there is a high level of concern about the potential for disease transmission from camelids to wild ungulates. The Refuge's management approach is to minimize the risk by restricting the presence of potential disease vectors such as domestic sheep, goats and camelids. The intent of this proposal is to conserve the natural diversity of the Refuge's wildlife resources.

5. What are other public land and wildlife managers in Alaska and in other parts of the nation doing in regards to restricting the use of these types of pack animals?

Public land managers and wildlife agencies have taken a variety of actions regarding the use of these types of pack animals. For example, the State of Alaska prohibits the use of domestic sheep and goats for the hunting of Dall's sheep, mountain goats and musk ox. The National Park Service in Alaska prohibits all uses of domestic goats and sheep, but bovids and camelids can be used as pack animals with a permit from the Superintendent. Other agencies in Alaska, such as the U.S. Forest Service and the Bureau of Land Management, have a suite of allowances and/or prohibitions on the use of domestic livestock. Similarly, the public land and wildlife agencies in the contiguous United States have a variety of regulations to address concerns for disease transmission from livestock to wildlife depending on Agency policy, wildlife and habitat realities as well as local and national political influences.

Additional information regarding best practices and recommendations for managing domestic sheep and goats can be found in the Western Association of Fish and Wildlife Agencies [Recommendations for Domestic Sheep and Goat Management in Wild Sheep Habitat](#).

6. Will this proposed regulation have a direct effect on any current commercial operators or on the local communities?

Currently, there are no commercial operators that use any of the livestock animals the Refuge is proposing to prohibit. The 2015 Revised CCP prohibited the use of these pack animals for commercial purposes. That prohibition did not require promulgation of regulations. There is no evidence that any Refuge permitted commercial operators have used them in the past.

Additionally, there are no reports or knowledge that the local communities, in this case Arctic Village and Kaktovik, use or have ever used these types of livestock for subsistence uses or any other purpose.

The Arctic Village Council has expressed support for this proposed regulation in the interest of protecting Dall's sheep in the Eastern Brooks Range.

7. What is the process and timeline for making these regulatory changes? How can I participate?

This proposed regulatory change has been published in the Federal Register and is available for public comment until June 8, 2020. Please [click](#) here to review it and comment.

You can also submit comments by hard copy by U.S. mail or hand delivery to: Public Comments Processing, Attn: FWS-HQ-NWRS-2020-0013; U.S. Fish and Wildlife Service; 5275 Leesburg Pike, MS: PRB/PERMA (JAO); Falls Church, VA 22041-3803.