12-15-22

Appendix 1 - Regulations or perspectives vary by agencies on recreational use of SACs in wild sheep habitat

We have edited this appendix and added a number of actions and scientific papers that were of significance and missing in the original compilation sent by WSI

All of the below arbitrary pack llama bans, and consideration of pack llama bans from our public lands, were exclusively derived from the work of Dr. Helen Schwantje, her colleagues and subsequent papers, and support from the Wild Sheep Foundation's Thinhorn Sheep Initiatives ("No Contact In The North"), except #1. Here are the agencies, coordinated NGO's, and cited non-peer reviewed research arbitrarily banning pack llamas:

1) 1994: NPS-SE Utah Group (Canyonlands NP, Zion NP, Arches NP)– tried to ban pack llamas for pathogen/disease transfer to wild sheep. After a thorough scientific community summit, it was reversed based upon veterinarian experts' and professionals' summation of the very low risk of pack llamas pathogen/disease transfer. However, staggeringly, pack llamas are still banned based upon the llama being undefined as an alternate pack animal by the NPS regulations. The original ban was based on a statement by Colorado State pathologist and DVM, Terry Spraeker at the 1994 Desert Bighorn Council in his presentation advising llamas were a threat to transmit Johnes Disease to Bighorn Sheep. Dr. Spraeker had no firsthand knowledge of the circumstances he referenced and incorrectly interpreted from CSU lab results. His ill-advised comments led to him organizing a summit that determined the two referenced infections were atypical. He ultimately co-signed a letter with three other CSU veterinarians stating llamas were not determined to be carriers of Johnes based on their history and the testimony of the Johnes specialists attending the summit.

2) 2003: Publication of "*Communicable Diseases Risks to Wildlife from Camelids in British Columbia".* (Schwantje 2003). *"Risks from camelids to wildlife in British Columbia remain hypothetical after this risk assessment, as no direct evidence was found to implicate camelids as sources of significant diseases in wildlife in BC or elsewhere."*

3) 2005: Publication of *"Examining the Risk of Disease Transmission between Wild Dall Sheep and Mountain Goats and Introduced Domestic Sheep, Goats, and Llamas in the Northwest Territories".* (Schwantje/Garde 2005). *"Conversely, contact between llamas and wild Dall's sheep or goats may result in disease in wild species, but there is insufficient data available to clearly assess the role of camelids as a source of disease at this time (for additional information see Communicable Diseases Risks to Wildlife from Camelids in British Columbia*) '. The RA used the hypothetical 2003 RA to support its statement.

4) On August 9, 2005, Alaska Department of Fish & Game (ADF&G) issued a News Release stating their concerns over use of llamas when hunting Dall's sheep, mountain goat, and/or muskox (Caprinae family).

5) 2012: Dr. Murray Fowler in a letter to the Alaska Department of Fish and Game (ADF&G) (Referring to RA Schwantje 2003 and RA Schwantje/Garde 2005)

"....Both of these publications contain a wealth of information, however, there are some errors of interpretation that I take exception to. There has never been a documented case of South American Camelids (SAC) being responsible for disease transmission to cattle, sheep, goats or cervids. It is true that they acquire general infectious diseases that are common to most domestic animals, but SACs are not a reservoir for any infectious disease that may occur in cattle, sheep. goats or cervids…."

https://www.packllamas.org/pdf/akban/murrayfowlervetlamaletter-9apr2012.pdf

6) 2012: *"Recommendations For Domestic Sheep and Goat Management in Wild Sheep Habitat"*. (WAFWA-WSWG). This document does not include any recommendations for separation of llamas from wild sheep and goats on public land. However, staggeringly, some federal agencies used this specific document when referencing the decision to eliminate llamas in their NEPA-EIS and land management plans.This is how poorly researched and poorly considered some of these federal decisions were with no accountability to the facts.

7) 2013: Jim Herriges, AK- Eastern Interior-BLM (AK-EI-BLM) and AK-Wildlife Society authorship of the *"REDUCING DISEASE RISK TO DALL'S SHEEP AND MOUNTAIN GOATS FROM DOMESTIC LIVESTOCK POSITION STATEMENT THE ALASKA CHAPTER OF THE WILDLIFE SOCIETY"* (February 4th, 2013) (Schwantje 2003, Schwantje/Garde 2005) https://www.packllamas.org/pdf/akban/hidden/position_statement_red_disease_risk_statement.pdf

8) 2013: Jerry Hupp AK- Wildlife Society Livestock Position Statement letter (May 13th, 2013) mailed to ALL Alaska federal agencies (BLM, USFWS, USFS, NPS) based upon the Jim Herriges authorship above. (Schwantje 2003, Schwantje/Garde 2005) https://www.packllamas.org/pdf/akban/hidden/ak-tws-sheep_disease_risk_letter_to_all-federal_agencies_may_2013.pdf

(Sent to **USFWS-Arctic** National Wildlife Refuge, Kenai National Wildlife Refuge, Kodiak National Wildlife Refuge, Tetlin National Wildlife Refuge. **NPS**-Denali National Park and Preserve, Gates of the Arctic National Park and Preserve, Glacier Bay National Park and Preserve, Lake Clark National Park and Preserve, Katmai National Park and Preserve, Kenai Fjords National Park, Wrangell-St. Elias National Park and Preserve. **USFS**- Chugach National Forest, Tongass National Forest. **BLM**- Anchorage Field Office, Glennallen Field Office, Arctic Field Office, Central Yukon Field Office, Eastern Interior Field Office, Anchorage District Office, Fairbanks Field Office).

The Hupp letter eventually garnered the current pack llama bans from: **AK-BLM-Eastern Interior and AK-USFWS-Arctic National Wildlife Refuge**, without the llama industry

participation in their NEPA-EIS process and land management plans. (Schwantje 2003, Schwantje/Garde 2005)

9) The Hupp letter also garnered consideration of a pack llama ban on the **AK-USFS-Chugach National Forest**. It was an internal decision by the USFS in their Draft ROD to ban llamas. However, fortunately and through a proper NEPA process, the general public vigorously "objected" to the Draft ROD, and the arbitrary ban was rescinded in 2020 by the Regional Forester based upon the arbitrary application to include llamas with domestic sheep and goats. (Schwantje 2003, Schwantje/Garde 2005, then CCH RA-17)

10) 2012: The Alaska Board of Game (BOG) took action to ban llamas for use in hunting wild goats and sheep. The Alaska Department of Fish and Game (ADF&G) reviewed the science suggesting against the ban, and the BOG agreed, removing llamas from the ban. (Schwantje 2003, Schwantje/Garde 2005)

11) 2013: The Alaska Board of Game prohibited using pack goats for hunting but not pack llamas.

12) 2015: NPS - Alaska – Suggested and lumped pack llamas with domestic sheep and goats to be banned in their compendiums based upon the "2013 Herriges- AK-TWS" paper. The NPS compendiums were reversed to allow pack llamas with the requirement of a written authorization from the superintendent in the jurisdictions of travel. (Schwantje 2003, Schwantje/Garde 2005)

13) **2015:** USFWS-Arctic National Wildlife Refuge (ANWR) Conservation Plan for the next 15-20 years arbitrarily banned pack llamas based upon the false science and propaganda of the Schwantje 2005 study. In 2019 The past Alaska Regional Director, Gregory Siekaniec of the ANWR even went so far as to suggest llamas pose a threat of pathogen transfer causing Chronic Wasting Disease.

" …In particular, domestic sheep, goats, and camelids (e.g., llamas and alpacas) are recognized as being at high risk for carrying disease organisms, often asymptomatically, that are highly contagious, and cause severe illness and death in Dall's sheep ***(Garde et al. 2005)****. Therefore, domestic sheep, goats, and camelids are not allowed on the Arctic Refuge."*

"...we recognize that many different wild and domestic animals can be vectors for disease in wildlife. Tragedies such as the continued spread of chronic wasting disease in the lower 48 reminds us of the value of a cautious approach to these issues in our largely intact ecosystems in Alaska."

This comes from a regional director who obviously regurgitates basic errors of scientific misinformation on subjects he knows nothing about and lumps llamas with sheep and goats, while ignoring other domestic pack animals and wildlife, like horses, dogs, humans and other wildlife with endemic pathogens. It's important to note, that the llama industry was not a participant, nor informed, of their CCP/EIS and their 2015 ROD to not only eliminate the pack llamas, but historical use as a recognized pack animal on the Arctic Refuge was eliminated. The

disinformation campaign orchestrated by Kevin Hurley (WSF) and the Schwantje/Garde 2005 opinion paper eliminated an established user group from vast public lands for decades and sets precedence. It reeks of arbitrary and capricious management of public land.

(Schwantje 2003, Schwantje/Garde 2005) (Llama Industry was not included in the 2015 CCP/EIS process)

14) 2016: AK-BLM-Eastern Interior (Whites, Steese, Fortymile, and Draanjik) banned pack llamas based upon pathogen/disease transmission from pack llamas to wild sheep using their own employee's "2013 Herriges - AK-TWS" paper. The ban is still in effect. (Schwantje 2003, Schwantje/Garde 2005) (Llama Industry was not included in their 2011-2015 NEPA-EIS land management process)

15) 2016: Proposal 2160: British Columbia (BC) Ministry of Forests, Lands, Natural Resources Operations, and Rural Development has regulations for the use of pack goats and SACs for hunting, but does not apply to trekking use. BC Parks Act (through Park management Plans) prohibit the use of pack sheep, goats and SACs for trekking in Northern Provincial Parks (i.e., those overlapping thinhorn sheep range). (Schwantje 2003, Schwantje/Garde 2005)

16) 2016: WAFWA-WSWG - *"Thinhorn Sheep Conservation Challenges and Management Strategies for the 21st Century"*. Effective separation is defined, and it does not include the Camelide-Tylopoda taxa.

"Effective separation is defined as spatial or temporal separation between thinhorn sheep and domestic sheep or goats. Reducing the potential for association between those taxa and the likelihood of transmission of pathogenic organisms or parasites between species is critically important. Maintaining effective separation is presently the only meaningful tool available for minimizing pathogen transfer and the risk of respiratory disease."

17) 2016: *"BLM-1730 - Management of Domestic Sheep and Goats to Sustain Wild Sheep"* is issued. It does not include taxa outside of domestic sheep and goats as management policy for wild sheep.

18) 2017: The Canadian Provinces of the North West Territories and British Columbia ban pack llamas in wild sheep habitat based upon Dr. Helen Schwantje 2003 and 2005 studies, WSF's Kevin Hurley's (WSF) request to ban llamas, and conversations at the WSF's 2017 Thin Horn Sheep Summit II in Anchorage, AK. (Schwantje 2003, Schwantje/Garde 2005, Schwantje CCH RA-17)

"...Helen Schwantje: In BC, we are working to update a 2003 Camelid Risk Assessment; hopefully, this update will give us some resolution to the camelid question. Kevin Hurley: In AK, per BOG regulations, you cannot use pack goats or llamas for hunting, but you can use them for non-hunting recreation.WSF would like to see these domestic animals banned from THS range on all federal lands in AK year-round…"

This clearly shows the predetermined desired results from the not yet published British Columbia CCH-RA-17 paper. Also, besides being factually inaccurate on the use of pack llamas per BOG regulations in AK for hunting, this clearly shows Kevin Hurley and the WSF's desire to rid pack llamas on public land.

19) 2017: *"Invited Paper: Pneumonia in Bighorn Sheep: Risk and Resilience"* (E. Frances Cassirer)
"A host-specific pathogen commonly carried by domestic sheep and goats is consistent with the high mortality observed in captive bighorn sheep when commingled with domestic sheep but not when commingled with non-Caprinae livestock including cattle, horses, and llamas (Foreyt 1992, Foreyt and Lagerquist 1996, Besser et al. 2012a)."

20) 2017: *"RISK ASSESSMENT ON THE USE OF SOUTH AMERICAN CAMELIDS FOR BACK COUNTRY TREKKING IN BRITISH COLUMBIA"* . (Centre for Coastal Health), CCH-RA-17.

This became the reference document for llama ban initiatives thereafter.

21) 2018: The Alaska Department of Fish and Game (ADF&G) drops consideration to ban llamas in Alaska based upon the inconclusive results and a questionably derived CCH- RA-17. **https://www.packllamas.org/pdf/akban/alaska_department_fish_game_to_gala_06-11-18.pdf**

"*...in regards to the Risk assessment on the use of the South American camelids for back country trekking in British Columbia study and report (RA) commissioned by British Columbia's Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNR). We appreciate your interest on this issue and want you to know that at this time we have no intentions to promote or support limiting the use of South American camelids on public land in the state of Alaska"*

"After discussing the document internally and with other biologists from several jurisdictions (including the Western Association of Fish and Wildlife Agency Wild Sheep Work Group - WSWG), we will continue to focus and enhance our evaluation of disease risk from species other than llamas or related camelids"

22) 2018: *"Minimum Requirements Decision Guide Workbook"*(MRDG) drafted by employees of the BLM, NPS, USFS, USFWS, and biologists with the Nevada Department of Wildlife for the *"Bighorn Sheep Monitoring in the Alta Toquima and Arc Dome Wilderness Areas"*. It included possible recommendations to preclude the use of pack goat or llamas in the wilderness. It was not used because it was outside the scope of the wild sheep collaring project that has since been completed. But the MRDG, once again, by misinformed biologists, arbitrarily lumps llamas with sheep and goats. (Schwantje 2003, Schwantje/Garde 2005, Schwantje CCH RA-17)

23) 2018: The Wild Sheep Foundation: In their widely circulated and published *"North American Conservation Vision 2020"* (pages 4 and 6), recommend the spatial and temporal separation of pack llamas on public land based upon CCH RA-17. (Schwantje CCH RA-17)

This WSF Vision 2020 document goes against the grain and contradicts the WSWG's own 2016 *"Conservation Challenges and Management Strategies for the 21st Century"*

"Effective separation is defined as spatial or temporal separation between thinhorn sheep and domestic sheep or goats. Reducing the potential for association between those taxa and the likelihood of transmission of pathogenic organisms or parasites between species is critically important. Maintaining effective separation is presently the only meaningful tool available for minimizing pathogen transfer and the risk of respiratory disease."

24) 2019: UT-BLM unit denied a llama trekking special recreational permit application based upon pathogen/disease transfer to wild sheep. Jace Taylor, then UT Division of Wildlife Resources and past Wild Sheep Working Group member made the recommendation to the BLM based solely upon the CCH RA-17. (Schwantje CCH RA-17)

25) 2019: Through revision of their Wildlife Act Phase II, the Northwest Territories enacted regulations to prohibit domestic sheep, goats and SACs from the Mackenzie and Richardson Mountains, as a measure to reduce risk to wild sheep. (Schwantje 2003, Schwantje/Garde 2005)

26) 2019/2020: The USFS-Chugach National Forest in Alaska (CNF) proposed a llama ban based upon NO cited research for pathogen/disease threat from llamas to wild sheep in their Draft Record of Decision (DROD). The llama industry vigorously opposed the Draft ROD to ban llamas. The Draft ROD and Final Resource Management Plan was amended to not include the pack llama ban in its final plan. (CNF cited, In part, the precautionary principle but disagreed with the arbitrary inclusion and application of llamas with sheep and goats for a ban. (Schwantje CCH RA-17)

27) 2019: Idaho Department of Fish and Game, in their Mountain Goat Management Plan (2019-2024), inexplicitly included llamas as a risk to both mountain goats and bighorn sheep without any cited reference or research at all and included them with domestic sheep and goats as a threat. (no citation on llamas)

28) 2020: The Tonto National Forest, under the leadership of Neil Bothworth, along with the advice of the Arizona Game and Fish Department declined a commercial use permit with the use on llamas based upon the high risk of disease transmission from pack llamas to wild sheep. They scientifically blundered, lumping llamas with domestic sheep and goats as their reasoning. The Tonto NF has a long history of arbitrarily trying to ban pack llamas since the 1990's. It is our understanding this commercial use permit application process with pack llamas has since been reversed and allowed.

29) 2020: Commentary from Kevin Hurley, Wild Sheep Foundation on the promulgation of rules change for the USFWS - Arctic National Wildlife Refuge (ANWR) to eliminate the historical pack llama use. (Wild Sheep Foundation (WSF), CCH-RA-17)

https://www.packllamas.org/pdf/akban/hidden/2020-06-08_wsf_letter_on_anwr_proposed_regulations.pdf

"...For evidence in support of the regulation, we refer to the Risk Assessment on the Use of South American Camelids for Backcountry Trekking in British Columbia (2017). British Columbia's Ministry of Forests, Lands, Natural Resources Operations, and Rural Development contracted the Centre for Coastal Health in 2017 to update a previous disease risk assessment on South American camelids [SACs] (e.g., llamas, alpacas). The Alaska Department of Fish and Game assisted the project with funding. Based on this most recent and comprehensive published risk assessment, ***South American camelids can serve as host to at least 7 pathogens that could potentially impact wild sheep.*** *Thinhorn sheep, such as Dall's sheep, are generally immunologically naïve to many pathogens compared to bighorn sheep in the lower 48 states. While some of these pathogens may not be commonly found in SACs, there is very little evidence on their presence or prevalence in SACs, and precaution around contact between the species was advised until a better understanding of risk could be developed..."*

What Kevin Hurley and the WSF failed to disclose to the USFWS - ANWR and the general public is that the Alaska Department of Fish and Game along with members of the WSWG disavowed and will not accept the CCH-RA-17 as a legitimate scientific document to be used for land management to not allow pack llamas based upon disease transfer to wildlife. It's not surprising in Kevin's statement *"...While some of these pathogens may not be commonly found in SACs, there is very little evidence on their presence (pathogens) or prevalence in SAC's…"*

Kevin Hurley regurgitated the false and arbitrary claim that llamas serve as a host of the 7 pathogens listed in CCH'17 that could harm wild sheep. These pathogens are specifically addressed in the AASRP 2020 statement as not documented to occur in llamas.

30) 2020: The American Association of Small Ruminant Practitioners (AASRP), over 1000 veterinarians strong, has issued the following policy statement on any proposed bans of camelids based upon the threat of disease to wild sheep on public land.
https://www.packllamas.org/pdf/akban/Llama_Ban_rev2020.pdf

"There exists concern that the entry of camelid pack animals (llamas, alpacas) onto public lands poses a potential risk of disease to resident endangered or threatened ungulate populations including Boreal Caribou, Northern Mountain Caribou, Central Mountain Caribou, Southern Mountain Caribou, Bighorn Sheep, Mountain Goat, Dall's Sheep, Stone's Sheep and Roosevelt Elk. The diseases of concern by National Parks and wildlife managers include: Mycoplasma ovipneumoniae, Mannheimia haemolytica, Mycobacterium avium paratuberculosis,

Mycobacterium bovis, Pasteurella spp., contagious ecthyma, bovine viral diarrhea virus (BVDV), and bluetongue virus. Transmission of pathogens from cattle and sheep to wild ungulates under natural conditions has been well documented in the literature. Examples include respiratory disease and fatal pneumonia following contact between domestic and bighorn sheep (Schommer & Woolever, 2008), M. bovis from cattle to elk in Riding Mountain National Park (Garde et al., 2009), and BVDV from cattle to deer (Passler & Walz, 2010). However, there have been no peer-reviewed publications documenting pathogen transmission from camelids to wild ungulates or to domestic sheep and goats for the pathogens of concern. The American Association of Small Ruminant Practitioners is opposed to banning camelid pack animals on public lands until there is scientific justification for this action."

31) 2020: DOI: Federal Register / Vol. 85, No. 69 / Thursday, April 9, 2020 / Proposed Rules
We propose one change to 50 CFR part 36, the regulations concerning Alaska NWRs. Specifically, we propose to prohibit domestic sheep, goats, and camelids on the Arctic National Wildlife Refuge. The purpose of this prohibition is to prevent the spread of diseases and parasites to native wildlife populations, including mountain goats, musk oxen, and especially Dall's sheep. Dall's sheep in Alaska, including on the Arctic National Wildlife Refuge, are free of domestic livestock diseases and are believed to have very low immunity to many of these diseases. Domestic sheep, goats, and camelids (e.g., llamas and alpacas) are recognized as being at high risk for carrying disease organisms, often asymptomatically, that are highly contagious and cause severe illness or death in Dall's sheep. (Kevin Hurley-Wild Sheep Foundation, CCH-RA-17)

32) 2020: BLM-Central Yukon Draft Resource Management Plan/Environmental Impact Statement. All the action alternatives would require *"maintaining effective separation between domestic animals and Dall sheep. Domestic sheep and goats are prohibited in Dall sheep habitat. The use of camelids (such as alpacas and llamas) as pack animals would be authorized as appropriate through the normal permitting process."* (Schwantje 2003, Schwantje/Garde 2005)

33) 2020: AK-BLM Western Interior/Bering Sea: The Draft RMP/EIS specifically lumped llamas with domestic sheep and goats: *"To minimize the potential for disease transmission to wildlife, applications for the use of domestic sheep, goats, alpacas, llamas, and other similar species in Dall sheep habitat will be reviewed on a project-specific basis"*

The llama industry opposed the suggestion that llamas pose a threat of disease transmission to wildlife, and was an arbitrary inclusion. The BLM Western Interior/Bering Sea agreed and In December 2020, the Final RMP/EIS wording was changed to: *"To minimize the potential for disease transmission to wildlife, applications for the use of pack animals will be reviewed on a project-specific basis."* (Schwantje 2003, Schwantje/Garde 2005, Schwantje CCH RA-17)

34) 2021: 2021 NORTH AMERICAN POLICY STATEMENT: REDUCING CONFLICT BETWEEN WILD SHEEP AND DOMESTIC SHEEP AND GOATS ON PUBLIC LANDS.

Backcountry Hunters and Anglers (BHA): The 2020 policy review committee proposed a BHA policy ban on pack llamas in wild sheep habitat based upon the encouragement and misinformation from Kevin Hurley (WSF). The BHA North American Board Action: Adopted on February 8, 2021. It was circulated widely in hunting blogs and on the BHA website.

35) 2021: The Llama industry ad-hoc public land access committee met with the BHA Leadership in April 2021. After giving them extensive information on the issue, and the misinformation promulgated by the WSF, the BHA-BOD reversed its policy statement to NOT include a pack llama ban on public lands.

36) 2022 Idaho Department of Fish and Game, in their Bighorn Sheep Management Plan (2022-2027) rightfully did not include pack llamas as being a threat to Bighorn Sheep, however it was pointed out, in the public comment period, that this would be a conflict with their own 2019 Mountain Goat Management Plan (2019-2024), and the llama industry requested the arbitrary inclusion of the pack llama be taken out of the Mountain Goat Management Plan. No word yet from the IDFG.

37) 2020: Presented to the WSWG-WSWG in January 2020: "*Mycoplasma ovipneumoniae: Highlights of Research and Investigative Findings in Alaska."* (Kimberlee Beckmen, M.S., D.V.M., Ph.D., Camilla Lieske, D.V.M., M.P.V.M, diplABVT)

38) 2022: WSI issues a brief on the camelid question stating:

"The 2017 Risk Assessment stated that Mycoplasma ovipneumoniae (M. ovi), a bacterial pathogen considered to be an initiating agent in pneumonia in wild sheep, was not detected from limited sampling of SAC's kept alone or comingled with domestic sheep. The 2017 Assessment also stated that other pathogens associated with wild sheep and mountain goat disease (e.g., bovine viral diarrhea, contagious ecthyma, parapox virus, Mannheimia haemolytica, Pasteurella spp, Johne's Disease, and Bluetongue virus) are rare to uncommon in SAC's. ***CCH found no peer-reviewed literature on disease transmission from SAC's to mountain ungulates."***

The fact no peer-reviewed literature was found to support the CCH'17 renders it and the RA's '03 & "05, on which it was based, without merit. Accordingly, all policies and papers relying on the hypothetical information contained in those 3 RA's has no merit and should be abandoned.