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RE: Okanogan-Wenatchee National Forest DEIS Forest Plan Amendment for Planning and Management of Domestic Sheep and Goat Grazing Within the Range of Bighorn Sheep.

Thank you for the opportunity to provide comment on the Okanogan-Wenatchee National Forest Plan Amendment. The Washington Department of Fish and Wildlife (WDFW) manages seven bighorn sheep herds that occur in and near lands administered by the U.S. Forest Service (USFS) within the Okanogan-Wenatchee National Forest. The need for temporal and spatial separation between domestic and bighorn sheep has been long recognized, including analysis by the USFS (Schommer and Woolever, 2008) that strongly recommends temporal and spatial separation as the most effective strategy to reduce the likelihood of bighorn respiratory disease outbreaks.

Despite this recognition, domestic sheep grazing adjacent to bighorn sheep home ranges on USFS lands has continued in the Okanogan-Wenatchee National Forest.

Since 2009, several WDFW-managed herds have suffered infections of *Mycoplasma*

ovipneumoniae, which causes severe respiratory disease in bighorn sheep. Outbreaks occurred in the Umtanum/Selah Butte herd (2009), Tieton (2013), Cleman Mountain (2020), and Quilomene (2021). Domestic sheep grazing on USFS lands has intersected with or placed all of these herds at high risk of contact-except for the Quilomene herd. Today, only three bighorn herds associated with the Okanogan-Wenatchee National Forest remain free of *M. ovipneumoniae*: Swakane, Chelan Butte, and Manson. These herds represent the last uninfected populations in the area and are critical to maintaining the species' viability across central Washington.

The consequences of USFS grazing management extend beyond the initial outbreaks as pathogen eradication and population recovery are expensive, complex, and prolonged processes with no guarantee of success. In Washington, WDFW has only been able to initiate restoration efforts for the first outbreak herd (Umtanum/Selah Butte), beginning in 2018 - and meaningful progress is not expected to be fully assessed until 2028. The other infected herds are actively monitored, but no direct management is currently feasible to restore their long-term viability. As such, USFS grazing management and policy decisions will continue to have significant consequences-either

compounding past negative impacts or supporting recovery and conservation efforts-for WDFW-managed

bighorn sheep populations.

The USFS acknowledges the legal and policy basis for protecting bighorn sheep by referencing case law and agency guidance, including U.S. District Court decisions (2016, Idaho Case 09-0507 BLW, upheld by the 9th Circuit) and directives from the Bureau of Land Management and the USFS itself. These sources consistently mandate spatial and temporal separation between bighorn sheep and domestic sheep or goats, including non-use of allotments when effective separation cannot be attained. They also direct both agencies to resolve conflicts on allotments that present a high risk of disease transmission (Draft EIS, p. 71).

From this, the USFS frames the purpose and need of their current effort as developing management direction that minimizes or avoids impacts to bighorn sheep while still providing grazing opportunities that support economic viability. The USFS acknowledges that achieving zero risk is not realistic (Draft EIS, p. 5), but seeks to balance natural resource protection with domestic grazing use.

To guide allotment-level decisions, the USFS applied the Risk of Contact (RoC) tool (O'Brien et al. 2014). A threshold of 0.08 all-herd contacts is identified as the benchmark for high risk (Draft EIS, p. 22; GeomorphIS, LLC, p. 10). While RoC estimates serve as the primary indicator, additional local factors may also be considered, including topography, herd characteristics, spatial or temporal separation opportunities, and range management actions (Draft EIS, p. 12).

Lastly, the USFS emphasizes the importance of monitoring requirements to evaluate and ensure the long-term effectiveness of the management direction adopted through this process.

With this background and criteria in mind, the Washington Department of Fish and Wildlife offer the following comments on the Forest Plan Amendments for Planning and Management of Domestic Sheep and Goat Grazing Within the Range of Bighorn Sheep Draft EIS.

Mick Cope

Director, WDFW Wildlife Program

Comments relative to bighorn sheep population impacts by Alternatives:

Alternative 1: no action

As stated by the USFS, this alternative does not meet the purpose and needs of this project. Therefore, WDFW does not support this alternative and has no additional comment.

Alternative 2: Adopt Interim Adaptive Grazing Management Strategy and add standards and guidelines to the LRMPs

WDFW does not believe this alternative meets the project's purpose and need and therefore does not support this alternative as proposed based on the following assessment.

Under this alternative, the USFS proposes formalizing the interim strategies currently in place by reducing the number of permitted animals within allotments and experimental conversion from domestic sheep to cattle for some or portions of allotments. The USFS suggests that Alternative 2 would result in a lower-but not discountable-risk to bighorn sheep due to reduced permitted livestock numbers across multiple allotments (p. 72). Further, the USFS asserts that lowering domestic sheep stocking numbers is a "best management practice employed to keep domestic and bighorn sheep separated" (p. 19) and cites the Western Association of Fish and Wildlife Agencies' 2025 publication, Recommendations for Domestic Sheep and Goat Management in

Wild Sheep Habitat (Appendix A, referenced in "Mitigation and Other Requirements" p. 21). However, the referenced WAFWA publication does not include or recommend reduced domestic sheep stocking rates as an effective strategy to mitigate *Mycoplasma ovipneumoniae* transmission. Instead, it emphasizes spatial and temporal separation as the primary and most reliable mitigation effort and specifically recommends federal land management agencies "provide effective separation between wild sheep" and to "reduce risk of association either by closing or converting (to another species with lower transmission risk) domestic sheep or goat allotments, grazing permits, or tenures that overlap, or are within foray distances of, wild sheep habitat" (WAFWA 2025).

Notably, the RoC for the Chelan Butte, Swakane, Tieton, and Umtanum bighorn populations are the exact same for Alternatives 1 and 2, which exceed the USFS's benchmark of 0.08 contacts per year (GeomorphIS, 2025). The only herd with (nominal) risk reduction is the Cleman herd, due to the transition to cattle grazing in the eastern portion of the Naches allotment, which removes the overlap with the Cleman Core Herd Home Range (CHHR). However, overlap remains between the manipulated CHHR and the Nile allotment, and the default CHHR still identifies an extremely high risk of contact estimate with the Nile allotment. Importantly, domestic sheep herds at the sizes proposed under Alternative 2 carry *Mycoplasma ovipneumoniae* at extremely high prevalence rates (USDA CEAH, Sheep 2015; Heines et al. 2016).

Essentially, Alternative 2 maintains the same level of risk for contact and pathogen transmission between domestic and wild sheep as Alternative 1 because reducing domestic grazing stocking rates does not necessarily

reduce the disease risk to bighorn sheep. As stated by the USFS, Alternative 1 does not meet the project's purpose and need; accordingly, Alternative 2-which carries the same risks of contact as Alternative 1-would also fail to meet the project's purpose and need.

Alternative 3

The USFS states that this alternative does not meet the purpose and needs of this project. WDFW assumes the USFS is not seriously considering this alternative and will therefore not comment on its proposed actions.

Alternative 4

WDFW supports some of the proposed actions under Alternative 4. However, as proposed WDFW does not believe this alternative meets the purpose and need of this project. WDFW encourages the USFS to reconsider the proposed actions under this alternative to more appropriately address disease risk to bighorn sheep populations.

Under this alternative, the USFS proposes converting some allotments to cattle or vacating those unsuitable for either cattle or domestic sheep and goats. Importantly, the USFS will not permit domestic sheep grazing in the Western Naches Allotment, thereby avoiding risk of transmitting *Mycoplasma ovipneumoniae* to the Blazed Ridge mountain goat herd. However, the plan retains domestic sheep grazing in portions of the Switchback Allotment, which will be combined with the Limekiln-Sugarloaf Allotment.

Risk of Contact (RoC) estimates for this new Limekiln-Sugarloaf/Switchback Allotment are alarmingly high - ranging from 0.176 to 0.277 (GeomorphIS 2025). These values vastly exceed the USFS benchmark threshold of 0.08 and would represent a persistent and significant risk of disease transmission. The USFS attempts to justify these exceedances by asserting that reduced grazing time on the range will mitigate risk. However, they provide no contemporary data, quantitative analysis, or scientific literature to support this assumption. This rationale directly conflicts with the design of the RoC tool, which incorporates sex- and season-specific foray probabilities but deliberately excludes grazing duration as a variable. As O'Brien et al. (2014) and subsequent research (e.g., Festa-Bianchet, 1986; DeCesare & Pletscher, 2006; Schroeder et al., 2010; Marcisz, 2021) demonstrate, there is no empirical evidence that bighorn sheep forays occur at predictable intervals that could be adjusted for time-on-range. Thus, the USFS reasoning is unsupported by the best available science.

This issue mirrors a recent Colorado case, *WildEarth Guardians; Western Watersheds Project v.*

U.S. Forest Service (Appellate Case No. 24-1187, Document 57-1). There, the USFS attempted to reduce RoC estimates by modifying allotment boundaries and grazing periods, citing "local factors" to justify reduced risk. The

court ruled this approach arbitrary and capricious, emphasizing that NEPA requires a "hard look at environmental consequences" of its proposed actions, requiring an objective evaluation of project design, cumulative environmental effects, and application of the best available science.

Applied to the Okanogan-Wenatchee Draft Grazing EIS, these same deficiencies are evident. The USFS arbitrarily claims that shortened grazing seasons reduce risk yet offers no quantification or analysis. It also fails to assess the broader ecological impacts on the Swakane bighorn herd, on neighboring populations at Chelan Butte and Manson, and on documented herd connectivity identified by WDFW biologists. No attention is given to cascading effects on WDFW's management efforts or the Chelan County economy tied to bighorn sheep. Most importantly, the USFS dismisses high RoC risk levels without scientific justification and provides no plan to monitor the effectiveness of its proposed strategies.

The consequences of these shortcomings are profound. Alternative 4 does not ensure effective spatial or temporal separation between domestic sheep and the Swakane herd, permitting risk levels far above the high-risk threshold for the foreseeable future. This persistent risk will almost certainly lead to the transmission of *M. ovipneumoniae* to the Swakane herd and nearby herds, undermining the long-term viability of bighorn sheep across Chelan County. The Colorado case makes clear that such disregard for environmental consequences violates NEPA, and the same legal vulnerability applies here.

Despite these risks, the USFS concludes with a MIIH determination ("May Impact Individuals or Habitat, but Will Not Likely Contribute to a Trend Toward Federal Listing or Loss of Viability to the Population or Species"). While short-term federal listing may be unlikely, the long-term viability of Washington's bighorn sheep is clearly threatened. Currently, 11 of 17 herds statewide are already affected by *M. ovipneumoniae* and three face infestations of *Psoroptes* spp. Initial outbreaks often cause all-age die-offs followed by chronically reduced lamb recruitment (Paolini et al. 2023, Butler et al. 2018, Smith et al. 2014). Natural clearance of *M. ovipneumoniae* may take up to 40 years, during which populations continue to decline. Permitting additional disease risk to as many as three more bighorn populations would compound these challenges and could irreversibly harm Washington's already vulnerable bighorn sheep.

Comments on socioeconomic assessments

The USFS conducts an assessment of socioeconomic impacts for each alternative, stating their intent to minimize impacts to local economies. The WDFW appreciates this intent, but we contend the USFS's analysis overlooks important considerations when conducting this analysis:

- The USFS inaccurately portrays the monetary value of hunting activity in bighorn populations within the Okanogan-Wenatchee National Forest. While it is accurate that bighorn special hunt permits are limited in number and that most of these permits generate relatively small sales revenue, the USFS overlooks the significant sales revenue generated by auction and raffle hunt opportunities. These monies are critical to funding management and conservation efforts for bighorn in this state. The value of the WDFW statewide bighorn auction tag alone would significantly depreciate upon disease outbreak in any one of several populations in the

Okanogan-Wenatchee National Forest.

- Similarly, the USFS does not evaluate the cost of *M. ovipneumoniae* infection and pneumonia outbreaks in bighorn to local economies, to state agencies like WDFW, or to tribal governments. Impacts to wildlife viewing, hunting (as above), and general recreation and related industries may be significant in the absence of healthy, uninfected bighorn sheep populations.
- The USFS states that socioeconomic impacts for all alternatives are minimal relative to both grazing and bighorn sheep economic and social values. However, it appears the USFS provides special consideration of economic impacts to domestic grazing because a single permittee is affected despite the low economic production from domestic grazing ("less than one percent of total employment and income"; p. 152). The degree to which this special consideration impacts the USFS analysis of alternatives is unclear. Furthermore, given our preceding comments, the assertion that economic impacts from disease transmission to bighorn in the project area is minimal is unsubstantiated and does not take into consideration the breadth of economic impacts to the public or to state and tribal governments. Lastly, a more appropriate socioeconomic analysis would consider social and economic values for bighorn sheep separately, as is done for domestic sheep grazing, and with greater emphasis on the significant cultural value of this native species for indigenous peoples of Washington.
- The USFS does not provide an evaluation of the livestock industries financial gain or losses for each alternative. For example, the conversion of suitable allotments to all cattle without the presences of sheep on the landscape may provide more revenue for the livestock owner, than the current business plan Alternative 1, therefore actually benefiting the local economy and the protection of bighorn sheep. As written the reader cannot adequately understand the economics of each Alternative.

Comments related to environmental impacts by resource Riparian

A switch from sheep to cattle could have significant riparian impacts as cattle are known to use riparian areas more than sheep. While the USFS have many measures listed that attempt to mitigate impacts, many are vague and do not adequately address the impacts:

- Measures such as range riding, virtual fencing, etc. are listed but provide few details. In the Fisheries Biological Evaluation (BE) it states that virtual fencing will be designed to keep the cattle out of streams, yet many erosion effects can happen in the riparian area that will contribute sediment to the stream. We recommend any virtual fence boundary at or near the edge of the riparian area rather than stream edge to reduce impacts.
- Appendix B of the DEIS, under page xii, Soils, S-1 states, "minimize the number and length of stream crossings". This is vague and needs to be clarified. In general stream crossings should be avoided except in rare circumstances where needed, and when needed the exact location should be agreed upon by the USFS specialist.
- Timing restrictions: the DEIS states for Rock Creek that cattle would be excluded within

[frac12] mile prior to June 16. The WDFW permitted work window for Rock Creek starts on July 16. We recommend further clarifying that no cattle should be in Rock Creek or its adjacent riparian areas prior to July 16.

- The WDFW permitted work window for Nile Creek and its tributaries starts on July 16, yet Table 3 in the Fisheries BE states June 15 for rotation. Please clarify that no animals will be in the stream prior to July 16.

Wildlife Habitat Connectivity

In Washington State, several wildlife habitat connectivity analyses have been performed. One was a statewide analysis and a second was focused on the Columbia Plateau. Both analyses looked at core habitat for focal species and the connectivity between the core habitat patches. Additional habitat connectivity analysis includes the Washington Shrubsteppe Restoration and Resiliency Initiative and the Washington Habitat Connectivity Action Plan. Many of the grazing units in the DEIS significantly overlap the core habitat (HCAs) identified in these analyses. The best movement corridors or least-cost paths between the core habitat patches were also identified in these analyses. Several of the grazing units contain one or more of the best movement corridors for species to move through to connect to the nearest core habitat patches. This conservation network of cores and connections is important to maintain a larger suite of species across the landscape, allowing movement in response to a changing climate, deep snow accumulation or landscape scale events such as fire. The DEIS alternatives should be informed by these analyses. They can be found at:

* <https://waconnected.org/>

* <https://wdfw.maps.arcgis.com/home/item.html?id=cd2f9ff6e6cf47fb8630daa02a70c45f>

* <https://wsrri-wdfw.hub.arcgis.com/>

Invertebrates

Many invertebrate species' host plants and preferred nectar resources are generally in decline, particularly from late summer through the fall. Invertebrate reproductive success and recruitment are dependent on these resources being available. Climate stressors have already pushed these phenological overlaps further apart. Livestock grazing can shift the bloom season as well as the natural height, nectar, pollen and seed production of host and nectar plants, negatively impacting

the reproductive success of these species. Unlike cattle, sheep and goat foraging behavior often results in the loss of entire plants meaning there will be no recruitment from those plants.

The USFS EIS should closer evaluate the impact of rangeland management standards to riparian and wetland sensitive species. Meadow and wetland habitats are sensitive to disturbance and repeated intense utilization of these habitats may lead to a decline in resource availability for wildlife. Depending on the timing, duration,

stocking density, and available Animal Unit Months, livestock pressure may negatively impact invertebrates and other riparian and wetland sensitive species. Rotating grazing in these habitats between spring and fall in alternating years, alternating year rest, implementing a High-Intensity/Short-Duration rotation, or reduction in stocking rates could be successful in spreading out the impacts to habitats and species.

The following are additional considerations for invertebrates:

- * In Table 22, *Bombus vagans* is incorrectly listed as "N" under the column header "Species present?" and "N" under "Species or Habitat Potentially Affected?". These should both be changed to "Y" for yes.

- * Table 22 does NOT include *Bombus suckleyi*; however, historic records exist for this species nearby, and with such limited surveys it cannot be assumed this species is not in the allotment areas. *Bombus suckleyi* should be added to Table 22 and for included for consideration on page 77 reviewing overall Environmental Consequences.

- * Table 22 lists *Lycaena cupreus* (Lustrous copper) as "Y" in "Species Present?" column, and it should be "N".

- * On pg. 77, species impacted should include *Bombus vagans* and *Bombus suckleyi*.

- * On pg. 77 Peck's skipper (*Polities peckius*) and Tawny-edge skipper (*Polites themistocles*) should be removed; they do not occur near the project region.

- * In table 22 on page 67 of the DEIS, the distribution of the Giant Palouse Earthworm

(*Driloleirus americanus*; GPE) is described as, ". . . only documented in the bunchgrass prairies of Palouse, Washington.". This statement is incorrect, as the GPE has been found well outside of the area reported in the DEIS. GPE have been found on the Chelan Butte Wildlife Area, just east of the northernmost grazing units analyzed in the DEIS. Additionally, an individual GPE was found between Ellensburg and Cle Elum.

- * The GPE is an imperiled species (S2) in Washington's State Wildlife Action Plan (SWAP). The Global Rank is G1 Critically Imperiled, which is defined as follows: At very high risk of extinction or collapse due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors. The GPE should be included in the analysis of species impacts.

Northern Spotted Owl

While it likely will not change the effects analysis, on Page 55 of the DEIS, the USFS only analyzed critical habitat for northern spotted owl and not the potential impacts of different grazing options at the actual nest site. The DEIS should include an analysis of how many

potentially active nest sites are within the grazing allotment and a mitigation measure that the permittees will be discouraged from any concentrated use/actions within the nest site core area.

Water Quality

On Table 25 on page 84, spawning habitat is quantified. Table 34 on page 136 indicates that under alternative 4, there would be 14,913 acres of riparian reserve in cattle allotments. It is unclear if a distinction is being made between just spawning habitat for a particular species or if all streams are being quantified. The concern is that all of the stream network upstream of spawning habitat contributes to water quality. Stream flies and other aquatic insect habitat is reduced with increased stream sedimentation. The small first, second and third order streams comprise the bulk of a stream network in a watershed. Since these low order streams may not be spawning habitat, their contribution to water quality and their susceptibility to degradation may not have been considered in the DEIS. Please clarify how the spawning habitat for various fish species, the riparian reserve acreage figure above, and the low order stream mileage is considered and analyzed in the DEISs.

General Comments

- Page 24 (PDF Page 35): Table 8 lists 174 as the permitted number of cow/calf pairs for the Naches allotment under Alternative 4, but the text below the table states that up to 374 c/c pairs would be allowed on the Naches allotment. Clarification is needed for which number is correct.

- Page 25 (PDF page 36): WDFW recommends clarifying wording of Rock Creek exclusion area. It seems to indicate all of Rock Creek, when it is only a portion of Rock Creek.

- In references to cattle grazing on the Naches and Manastash allotments, there are references to cattle "drifting" onto allotments from adjacent lands or other allotments. This should be clarified or further defined. This statement implies limited use, and that cows will only move there on their own and not be pushed there by technology (virtual fence) or by horse or ATV. Specifically, for Manastash it also means this allotment will not have its own herd and cattle would never be trucked in which limits producers' use of the allotment.

- Use of technology vs physical fencing is great and WDFW supports its use, however it is a tool with limitations. WDFW recommends against trying to manage cattle movements at too fine a scale, by creating too small of pastures or complicated exclusion areas.

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