Objections to the

Shoshone National Forest

Draft Record of Decision

and

Final Supplemental Environmental Impact Statement for Use of Domestic Sheep, Goats and Pack Goats

Submitted by:

North American Packgoat Association

February 12, 2018

TABLE OF CONTENTS

VIA ELECTRONIC SUBMITTAL AND U.S. MAIL

RE: Objections to the Shoshone National Forest Draft Record of Decision and Final Supplemental Environmental Impact Statement for Use of Domestic Sheep, Goats and Pack Goats

To: USDA Forest Service
Attn: Objection Reviewing Officer
Glenn Casamassa, Associate Deputy Chief
EMC, Mailstop 1104
100 Independence Ave., SW
Washington, D.C. 20250
Electronic Submittal: objections-chief@fs.fed.us

Responsible Official: Brian Ferebee, Regional Forester
Rocky Mountain Region
1617 Cole Boulevard, Building 17
Lakewood, CO 80401

From: Andrew A. Irvine
of Andrew A. Irvine, P.C.
P.O. Box 3221
Jackson, WY 83001
Phone: (307) 690-8383
Email: andy@andrewirvinelaw.com

On behalf of: North American Packgoat Association
Attn: Curtis King, President
P.O. Box 170166
Boise, ID 83717
Phone: (509) 539-0982
Email: curtis.king66@yahoo.com

On behalf of the North American Packgoat Association, I hereby timely submit these Objections to the Shoshone National Forest Draft Record of Decision and Final Supplemental Environmental Impact Statement for Use of Domestic Sheep, Goats and Pack Goats. If you have any questions concerning these comments or need further information, you may contact NAPgA or Andrew Irvine at the emails and phone numbers indicated above.

Date: February 12, 2018

Andrew A. Irvine
of Andrew A. Irvine, P.C.

I. Introduction to Objections

The North American Packgoat Association ("NAPgA") timely files objections to the Shoshone National Forest ("Shoshone NF") Draft Record of Decision ("Draft ROD") and Final Supplemental Environmental Impact Statement for Use of Domestic Sheep, Goats and Pack Goats ("FSEIS"). *See* 82 Fed. Reg. 59,597 (Dec. 15, 2017) (Notice of Availability); *see also* https://www.fs.usda.gov/detail/shoshone/landmanagement/planning/?cid=FSEPRD540949 (Shoshone NF planning webpage). NAPgA also files objections to the Risk Analysis of Disease Transmission between Domestic Sheep and Goats and Rocky Mountain Bighorn Sheep dated December 2017 ("Final RADT Report"), available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd566624.pdf, and the 2017 Amendment to the 2013 Biological Evaluation for the Revised Shoshone National Forest Land and Natural Resource Management Plan dated December 14, 2017, available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd566627.pdf. Notice of the 60-day objection filing period was published in the Denver Post on December 15, 2017. *See* https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd566992.pdf (providing copy of notice). Objections are filed pursuant to the Forest Service's objection process at 36 C.F.R. § 219, Subpart B. The objection filing period expiries February 13, 2018.

The North American Packgoat Association, Inc. is an organization established specifically for promoting packing with packgoats. The organization was incorporated in March 2001 as a 501(c)(3) non-profit organization. NAPgA seeks to further the pursuit of goatpacking by sharing the knowledge, ideas and experiences of its members; by promoting the use of packgoats to the public as a means of low impact wilderness transportation and recreation; by serving as an advisory group on local and national land use issues; and by engaging in other activities related to educating the public about goatpacking.

NAPgA appreciates this opportunity to file objections on the Shoshone NF Draft ROD, FSEIS and Final RADT Report. NAPgA and its numerous goatpacking-members will be adversely affected by the management direction proposed in the Draft ROD. The proposed management direction would result in partial closure of one of the premier goatpacking areas in the nation, but of even greater concern, the proposed management direction relies on faulty and incomplete science, which may be wrongly relied upon by other Forests and set a bad precedent for other Forests to follow in managing goatpacking.

Despite years of planning and multiple risk analysis of disease transmission reports, the Shoshone NF still does not present any definitive scientific information establishing pack goats as a risk of disease transmission to bighorn sheep on the Forest. Furthermore, in singling out pack goats as a potential risk, the Shoshone NF has inappropriately and inexplicably overlooked other potential risks of disease transmission to bighorn sheep, especially cattle. The Shoshone NF has not justified a partial closure of the Forest to goatpacking, nor has it explained why pack goats—as opposed to other animals like cattle—are such a risk that they must be restricted from occupied core native bighorn sheep habitat.

These objections will better inform the ROD, FSEIS and Final RADT Report, and further develop the efficacy of the Shoshone NF's management direction. Each of the objections below contains a statement of the issues addressed in the objection and references the parts of the Draft

ROD, FSEIS and/or Final RADT Report to which the objection applies. NAPgA urges the Forest Service to thoroughly consider these objections and respond in accordance with the objection process. NAPgA welcomes, and hereby requests, the opportunity to meet with the objection reviewing officer to discuss the objections presented herein and to collaboratively develop resolutions to such objections.

II. Legal Background for Objections

1. NEPA Prohibits Uninformed Agency Action

In passing NEPA, Congress "recogniz[ed] the profound impact of man's activity on the interrelations of all components of the natural environment" and set out "to create and maintain conditions under which man and nature can exist in productive harmony." 42 U.S.C. § 4331(a). To bring federal action in line with Congress' goals and to foster environmentally informed decision-making by federal agencies, NEPA "establishes 'action-forcing' procedures that require agencies to take a 'hard look' at environmental consequences." *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 486 (9th Cir. 2011) (citing *Metcalf v. Daley,* 214 F.3d 1135, 1141 (9th Cir. 2000)). Foremost among those procedures is the preparation of an environmental impact statement ("EIS"). *Id.*

Agencies considering "major Federal actions significantly affecting the quality of the human environment" are required to prepare an EIS. 42 U.S.C. § 4332(C). The EIS "shall provide full and fair discussion of [the] significant environmental impacts" of the proposed action. 40 C.F.R. § 1502.1. That discussion serves two purposes:

> First, it ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts. Second, it guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.

W. Watersheds Project, 632 F.3d at 487 (quoting *Dep't of Transp. v. Pub. Citizen,* 541 U.S. 752, 768 (2004)). This process does not mandate particular substantive results, but "NEPA . . . prohibits uninformed . . . agency action." *Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 351 (1989). By focusing agency and public attention on the environmental effects of proposed action, "NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *Marsh v. ONRC*, 490 U.S. 360, 371 (1989).

Under NEPA, federal agencies also have a general obligation to respond to public comments under 40 C.F.R. § 1503.4(a). Specifically, the agency must "discuss at appropriate points in the final [EIS] any responsible opposing view which was not adequately discussed in the draft [EIS] and . . . indicate the agency's response to the issues raised." *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1167 (9th Cir. 2003) (quoting 40 C.F.R. § 1502.9(b)). A failure to do so is itself a NEPA violation. *Id.* at 1168. The agency must also "insure the professional integrity, including scientific integrity, of the discussions and analyses" included in an EIS. 40 C.F.R. § 1502.24.

2. Review Under the APA

The Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701-706, provides for judicial review of agency actions, such as those at issue here.[1] Under the APA, a reviewing court shall "hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; . . . [or] without observance of procedures required by law." 5 U.S.C. § 706(2)(A), (D). Although the arbitrary and capricious standard is a "narrow one," the court is required to "engage in a substantial inquiry" and a "thorough, probing, in-depth review." *Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 960 (9th Cir. 2005) (quoting *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 415-16 (1971)).

Under this standard, an agency decision is to be reversed as arbitrary and capricious if the agency has ". . . entirely failed to consider an important aspect of the problem, [or] offered an explanation that runs counter to the evidence before the agency. . . ." *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). "The reviewing court should not attempt itself to make up for such deficiencies." *Id.* (citation omitted). Most fundamentally, the agency must "examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'" *Motor Vehicle,* 463 U.S. at 53 (quotation omitted).

Where, as here, there has been a change in policy from allowing goatpacking on the Shoshone NF to eliminating goatpacking on the Forest, judicial review starts with the presumption that the change in policy is *not* justified by the administrative record. *Motor Vehicle*, 463 U.S. at 42. Additionally, the traditional presumption of agency expertise "'may be rebutted if the decisions, even though based on scientific expertise, are not reasoned.'" *W. Watersheds Project v. Ashe*, No. 11-462, 2013 WL 2433370 at *5 (D. Idaho June 4, 2013) (citations omitted).

In addition to the requirements of NEPA and the APA, Forest Service regulations require that "best available science" be taken into account in forest planning. 36 C.F.R. § 219.3. In taking "best available science" into account, the Forest Service must "document how the best available science information was used to inform the assessment, the plan decision, and the monitoring program" and such documentation must "[i]dentify what information was determined to be the best available scientific information, explain the basis for that determination, and explain how the information was applied to the issues considered." *Id.*

---

[1] NEPA claims are subject to judicial review under the APA, 5 U.S.C. § 706(2)(A). *See Dep't of Transp. v. Pub. Citizen,* 541 U.S. at 763; *Marsh,* 490 U.S. at 375–76; *League of Wilderness Defenders-Blue Mtns. Biodiversity Project v. U.S.*, 549 F.3d 1211, 1215 (9th Cir. 2008) (the APA provides authority for the court's review of decisions under NEPA); *W. Watersheds Project v. U.S. Forest Serv.*, 2006 WL 292010, *2 (D. Idaho) (same).

III. Objections to the Draft ROD, FSEIS and Final RADT Report

1. The Shoshone NF Fails to Ensure the Scientific Integrity of the FSEIS and Final RADT Report and Must Correct and/or Remove Unsupported Statements Concerning Domestic Goats and Packgoats from the FSEIS and Final RADT Report.

In evaluating the environmental impacts of a proposed action, NEPA requires federal agencies to ensure the scientific integrity of an EIS by considering appropriate studies and data. 40 C.F.R. § 1502.24. The Shoshone NF must "insure the professional integrity, including scientific integrity, of the discussions and analyses" included in its FSEIS. *Id.* An agency may not rely on conclusory statements unsupported by data, authorities, or explanatory information. *Seattle Audubon Soc'y v. Moseley*, 798 F. Supp. 1473, 1480-83 (W.D. Wash. 1992), *aff'd*, 998 F.2d 699 (9th Cir. 1993). NEPA requires that an agency candidly disclose in its EIS the risks and effects of its proposed actions, and that it respond to adverse opinions held by respected scientists. *Seattle Audubon*, 798 F. Supp. at 1482 (*citing Friends of the Earth v. Hall*, 693 F. Supp. 904, 937 (W.D. Wash. 1988)). Further, under NEPA, courts have held that agency actions based on unexplained assumptions are arbitrary and capricious. *Ctr. for Biological Diversity v. U.S. Dep't of the Interior*, 623 F.3d 633, 650 (9th Cir. 2010); *see also Dow Agrosciences LLC v. Nat'l Marine Fisheries Serv.*, 707 F.3d 462, 470 (4th Cir. 2013) (agency must explain why lab tests reflect nature).

In addition to the requirements of NEPA, Forest Service regulations require that "best available science" be taken into account in forest planning. 36 C.F.R. § 219.3. In taking "best available science" into account, the Forest Service must "document how the best available science information was used to inform the assessment, the plan decision, and the monitoring program" and such documentation must "[i]dentify what information was determined to be the best available scientific information, explain the basis for that determination, and explain how the information was applied to the issues considered." *Id.*

The Shoshone NF has failed to ensure the professional integrity, including scientific integrity, of the discussions and analyses in the FSEIS and Final RADT Report as required under NEPA. The Shoshone NF has also failed to take "best available science" into account in the FSEIS and Final RADT Report. Further, the Shoshone NF appears to be operating on incomplete information concerning disease transmission from domestic goats and pack goats to bighorn sheep, and also appears to be ignoring important aspects of the problem of disease transmission as well as offering explanations in the FSEIS and Final RADT Report that run counter to the evidence before the Shoshone NF. Much of the analysis and discussion in the Final RADT Report concerning pack goats lacks factual or scientific support.

A. The Shoshone NF Must Not Rely on Besser et al. (2017) in the FSEIS and/or Final RADT Report as the Findings and Conclusions from that Research Article are Unsupported by Data and Have Been Subject to Later Corrections.

In its response to comments on the DSEIS and Draft Risk Analysis of Disease Transmission between Domestic Sheep and Goats and Rocky Mountain Bighorn Sheep dated

April 6, 2017 ("Draft RADT Report") the Shoshone NF provided that the June 2017 research article by Dr. Besser and others "demonstrated that bighorn sheep comingled with domestic goats testing positive for M. ovipneumoniae developed pneumonia." *See* FSEIS at 48; *see also id.* at 49 (same); *id.* at 18 (similar). The Shoshone NF in the Final RADT Report made the same statement. *See* Final RADT Report at 10 (citing Besser et al. (2017)). NAPgA presented extensive comments concerning Dr. Besser's then upcoming article (which had not been published at the time the DSEIS and Draft RADT Report were released) as well as comments concerning the scientific integrity of, and best available science in, the DSEIS and Draft RADT Report. *See*, *e.g.*, NAPgA Comments 6.h, 5.a – j, 6.a – k, 22, 29, 48 – 49, 51, 62 – 65, available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd565699.pdf. As NAPgA asserted then, and reasserts now, the statement that Dr. Besser "demonstrated that bighorn sheep comingled with domestic goats testing positive for M. ovipneumoniae developed pneumonia" is *false* and *must be removed* from the FSEIS and Final RADT Report.

Dr. Besser's research article is filled with inaccuracies and exaggerations and lacks objectivity. *See* http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0178707. Indeed, the publisher *PLOS ONE* has recently issued a correction to the article to correct some of the inaccuracies and exaggerations. *See* http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0192006 (Attachment 1). More corrections are warranted, if not complete retraction of the article. Regardless, the Shoshone NF is required to rely on best available science and cannot disregard available scientific evidence that runs counter to, or is more reliable than, that relied upon by the agency. *See*, *e.g.*, *Kern Cnty. Farm Bureau v. Allen*, 450 F.3d 1072, 1080 (9th Cir. 2006) (quoting *Southwest Ctr. for Biological Diversity v. Babbitt*, 215 F.3d 58, 60, 342 U.S. App. D.C. 58 (D.C. Cir. 2000)). The analysis below demonstrates that the research article by Dr. Besser is flawed. The Shoshone NF must consider this analysis and correct its discussion of Dr. Besser's research article in the FSEIS and Final RADT Report to ensure that it has used the best available science and to comply with the requirements of NEPA. *See*, *e.g.*, *Cf. Ecology Ctr. v. Castaneda*, 574 F.3d 652, 659 (9th Cir. 2009).

i. Misrepresentation of Data

Dr. Besser's research article is filled with inaccuracies and exaggerations and lacks objectivity. First and foremost, Dr. Besser improperly and repeatedly misrepresents data in his research article. For example, on page 1 of 13 of the article, under "Methodology/Principal findings," the article states: "At the end of experiment 3, gross and histological evidence of pneumonia similar to that observed in experiment 1 bighorn sheep was observed in both affected bighorn sheep and domestic goats." Similarly, on page 10 of 13 in the "Discussion" the article states: "All bighorn sheep exposed to goats carrying *M. ovipneumoniae* in experiments 1 and 3 developed signs and lesions of pneumonia. . . ." And, on page 7 of 13 with respect to "Necropsy findings" the article states, "All animals in the study had similar histopathologic lesions." Finally, with respect to Figure 3 on page 9 of 13, the article states, "Similar lesions were observed in all necropsied experimental animals."

In direct contradiction to these statements, Table 3 of the article on page 7 of 13, titled "Microbiological status and pathologic lesions of animals in experiments 2 and 3," states, "*No lesions seen*" for bighorn sheep BHS31. (emphasis added). The same is stated in Table 3 for

domestic goat DG6. So, evidently, not "all" bighorn developed "lesions" of pneumonia, nor did "all animals" have similar "histopathologic lesions," as Dr. Besser states in his article. Dr. Besser misrepresents the data in the research article.

More indicative of Dr. Besser's misrepresentations, however, is the histopathology report from the Washington Animal Disease Diagnostic Laboratory ("WADDL") upon which Dr. Besser supposedly based the above statements. A copy of the histopathology report, WADDL #2015-7604 dated June 10, 2015, was obtained from WADDL and is included here as an attachment (Attachment 2). The histologic diagnoses for bighorn sheep BHS28, BHS28L and BHS31 on page 2 of 2 of WADDL #2015-7604 provide:

1. Mild (#31) to moderate (#28 and 28L) lymphoid peribronciolitis with mild bronchiolar epithelial hyperplasia
2. Mild lypmphoplasmacytic tracheitis (all sheep)

Further, the "comments" on page 2 of 2 of WADDL #2015-7604 state: "Lesions in lungs and tracheas are compatible with experimental infections with *Mycoplasma ovipneumoniae*. M. ovi has been demonstrated in all animals by PCR."

There is *no* diagnosis of "pneumonia" in the histopathology report, WADDL #2015-7604. Yet, Dr. Besser somehow concludes in his research article that "gross and histological evidence of pneumonia" was observed in experiment 3 bighorn sheep and that "all bighorn sheep" in experiment 3 "developed signs and lesions of pneumonia." Dr. Besser's conclusions appear contrary to the evidence in the histopathology report, WADDL #2015-7604.

Furthermore, in Figure 3 on page 9 of 13, titled "Representative histological lung lesions in experimental animals," images B and C do not appear to show pneumonia. Also, with respect to the images in Figure 3, on page 7 of 13, under the "Necropsy findings," the article states, "All animals in the study had similar histopathologic lesions that varied in severity, consisting of inflammation centered around bronchi and bronchioles and extending to include adjacent alveoli (Fig. 3). Inflammation was characterized by peribronchiolar and perivascular lymphoid hyperplasia with secondary suppurative bronchiolitis and alveolar atelectasis."

Only image "A" from Figure 3 on page 9 of 13 of the article shows "suppurative bronchiolitis," which corresponds to one bighorn sheep from experiment 1. The other images ("B" and "C") do not show "suppurative bronchiolitis." Likewise, the histopathology report, WADDL #2015-7604, does not describe "suppurative bronchiolitis" in any of the bighorn sheep from experiment 3, nor does it describe inflammation "extending to include adjacent alveoli."

Thus, there are significant discrepancies between the histopathology report and images in Figure 3 on one hand, and Dr. Besser's reported findings and discussion on the other hand. Most significant, however, is that the histopathology report and images for experiment 3 fail to provide any evidence of pneumonia. As a result, the Shoshone NF cannot rely upon Dr. Besser's conclusions concerning pneumonia in bighorn sheep from experiment 3 as they are not consistent with the histopathology report and histologic images.

In addition to the above, Dr. Besser's presentation of histologic images in Figure 3 is odd because it deviates from his past and standard practice of showing both gross and histologic images in a research article. Dr. Besser has reported on pneumonia in bighorn sheep in previous studies. *See*, *e.g.*, Besser TE, Cassirer EF, Potter KA, Lahmers K, Oaks JL, Shanthalingam S, et al. (2014) Epizootic Pneumonia of Bighorn Sheep following Experimental Exposure to *Mycoplasma ovipneumoniae*. PLoS ONE 9(10): e110039. https://doi.org/10.1371/journal.pone.0110039. So, it would appear that he knows what pneumonia looks like in bighorn sheep and how to show both the gross and histologic images of lungs of bighorn sheep. As presented in the referenced article on page 5, Figure 2, Dr. Besser shows and compares gross and histologic images of lungs of bighorn sheep. In his recent research article, though, Dr. Besser fails to show any of the gross images and thus precludes any comparison of gross and histologic images of lungs of bighorn sheep. Where are the gross images? Why weren't they shown as they have been before? Standard practices should be followed in Dr. Besser's research article, which include presentation of both the gross and histologic images of the lungs of bighorn sheep, instead of the limited set of data and images that was presented. The representations and conclusions in Dr. Besser's research article are not substantiated by the underlying data, histopathology reports and histologic images and cannot be relied upon by the Shoshone NF.

ii. Exaggeration of Findings

Dr. Besser's article repeatedly exaggerates his findings to implicate domestic goats as a cause of pneumonia in bighorn sheep. The actual data and findings, however, suggest otherwise. To start, the title of the article is misleading: "Exposure of bighorn sheep to domestic goats colonized with Mycoplasma ovipneumoniae induces sub-lethal pneumonia." Such title is unrepresentative of the above-reported data. Exposure of bighorn sheep to domestic goats colonized with Mycoplasma ovipneumoniae was *not* shown to induce sub-lethal pneumonia or any other kind of pneumonia in experiment 3.

For similar reasons, the statement on page 1 of 13, under "Conclusions/Significance," is unjustified: "M. ovipneumoniae strains carried by domestic goats were transmitted to comingled bighorn sheep, triggering development of pneumonia." Pneumonia was not show to be "trigger[ed]" in experiment 3.

Further, on page 7 of 13 with respect to "Necropsy findings," the article provides, "several animals had strong fibrous adhesions." By definition, "several" means "more than two." Yet, when you look at the referenced tables (Tables 1 and 3 in the article), only *two* animals (BHS33 (Table 1) and BHS28 (Table 3)) are listed as having "PA," which indicates "plueral adhesions." Use of language like the term "several" demonstrates the author's clear bias against domestic goats and inappropriately leads the reader to believe that the findings are more substantial than they actually are. These types of bias and exaggeration should not be present in a research article and should not be relied upon by the Shoshone NF.

Dr. Besser also states at page 11 of 13 of the article, "bighorn sheep comingled with M. ovipneumoniae carrier goats consistently developed respiratory disease and pneumonia." That is not true. Likewise the following statement from page 10 of 13 of the article, in the "Discussion," is untrue: "Despite the consistent development of bighorn sheep pneumonia following contact

with domestic goats carrying M. ovipneumoniae . . . ." The data and findings do not show that the bighorn sheep in the experiments "consistently" developed pneumonia.

iii. Other Inaccuracies

Comparison of other WADDL reports to the data presented in Dr. Besser's research article reveals other inaccuracies. For example, Table 2 on page 6 of 13 of the article indicates that M. ovipneumoniae was not detected ("NotDet") in bighorn sheep BHS31L2 using polymerase chain reaction ("PCR") testing. Yet, the "Molecular Diagnostics" presented in WADDL #2014-5187 at page 2 of 4, attached herein (Attachment 3), state that Mycoplasma ovipneumoniae *was* "Detected" by PCR on a "Culture Medium-Bronchus" specimen. The data presented in Table 2 appears to be inaccurate. The WADDL report clearly states that M. ovipneumoniae was detected and, thus, the result should have been presented in Table 2 as "Det: B." Likewise, the statement in the article at page 6 of 13 that bighorn sheep BHS31L2 was "*M. ovipneumoniae*-negative" would also appear inaccurate.

Although unclear, perhaps Dr. Besser chose to report the data inaccurately, considering that bighorn lamb BHS31L2 is described as never having contact with domestic goats or with other bighorn sheep that had contact with domestic goats, yet it died and tested positive for Mycoplasma ovipneumoniae. That does not fit with the assertion made by Dr. Besser that the bighorn sheep that were captured from the wild for his research experiments were free of Mycoplasma ovipneumoniae prior to contact with domestic goats in the experiments. Whether a convenient oversight or based on improper motive, the data in Dr. Besser's article was misreported and the discussion misinformed. These, and the other inaccuracies in the research article corrupt the research article, making it unreliable and making it improper for the Shoshone NF to rely upon it.

iv. Lack of Objectivity

The chain of events leading to *PLOS ONE*'s publication of Dr. Besser's article is also something that should be considered by the Shoshone NF. In particular, rather than going to an independent and objective third-party lab to have microbiological and other testing done for his experiments, Dr. Besser's testing is done, in large part, by his wife and co-author of the research article, Dr. Kathleen Potter. Notably, "Kathleen Potter, Senior Pathologist" authorized the histopathology report provided herein (WADDL #2015-7604, Attachment 2). As shown on the third page of that report, Dr. Besser specifically asked that histopathology be assigned to Dr. Potter. While there may not be any wrongdoing in having Dr. Potter perform required testing, it certainly raises a question about objectivity.

Additionally, Dr. Besser's article was edited by Dr. Marco Festa-Bianchet, which also raises questions of objectivity, as Dr. Festa-Bianchet is himself a bighorn sheep researcher and has long been dedicated to conservation of bighorn sheep. *See* http://marco.recherche.usherbrooke.ca/marco.htm; http://marco.recherche.usherbrooke.ca/iucnwork.htm. In particular, Dr. Festa-Bianchet's immediate advertisement of Dr. Besser's article on his Twitter feed under the title "Experimental evidence: domestic goats transmit pneumonia to bighorn sheep" does not give the impression of objectivity. *See* https://twitter.com/festa_bianchet/status/875012348695777280. One can begin

to question how and why Dr. Festa-Bianchet apparently missed the inaccuracies and exaggerations in his review of Dr. Besser's article and failed to correct or even question why the discussion of the data and the descriptions of the images in the article did not correspond to what the data and images actually show.

v. Exposure of Bighorn Sheep to Domestic Goats Colonized with M. ovi Does Not Induce Fatal Pneumonia

At the end of the day, Dr. Besser cannot justifiably conclude in his article that exposure of bighorn sheep to domestic goats colonized with Mycoplasma ovipnuemoniae induced sub-lethal pneumonia in both of the experiments described within the *PLOS ONE* article. The data and findings do not justify such a broad-based conclusion. What Dr. Besser can conclude with confidence, based on the data and findings, is that not a single bighorn sheep died from exposure to domestic goats in any context throughout Dr. Besser's experiments. Indeed, as discussed on pages 5 through 7 of 13 of the article, to the extent bighorn sheep exhibited signs of respiratory problems when initially commingled with domestic goats, *all bighorn sheep exhibited fewer signs of respiratory problems over time, indicating recovery from such problems prior to being euthanized*. In following, the title of Dr. Besser's article could just have easily been: "Exposure of bighorn sheep to domestic goats colonized with *Mycoplasma ovipneumoniae* does not induce fatal pneumonia." Such title would be more reflective of the actual and objective data and findings from Dr. Besser's article.

Regardless, now that the Shoshone NF has been presented with the actual scientific evidence for Dr. Besser's article, which runs counter to the misrepresentations, exaggerations and inaccuracies presented in his article, the Shoshone NF must consider the evidence, as analyzed above, and correct its discussion of Dr. Besser's research article to ensure that it has used the best available science and complied with the requirements of NEPA. *See*, *e.g.*, *Kern Cnty. Farm Bureau*, 450 F.3d at 1080 (quotation omitted); *Cf. Ecology Ctr.*, 574 F.3d at 659. The Shoshone NF must also ensure the scientific integrity of the FSEIS and Final RADT Report under NEPA, 40 C.F.R. § 1502.24, and reliance upon Dr. Besser's article for the statements made in the FSEIS and Final RADT Report would be improper without consideration of the actual scientific evidence presented and analyzed above and without justification for Dr. Besser's findings and conclusions.

Conclusion and Recommendation: The Shoshone NF's reliance upon Besser et al. (2017) is misplaced. The research article does *not* "demonstrate[ ] that bighorn sheep commingled with domestic goats testing positive for M. ovipneumoniae developed pneumonia." To the extent the article can even be cited after being determined inaccurate and after being partially corrected, the data underlying the article (which have been provided to the Shoshone NF) do not support Dr. Besser's findings and conclusions concerning pneumonia. Such data must be considered and analyzed by the Shoshone NF. After such consideration and analysis, the Shoshone NF must, consistent with the data, correct the statements in the FSEIS and Final RADT Report indicating that the bighorn sheep in Dr. Besser's research article "all" developed pneumonia. Such statement is inaccurate. Moreover, because of the misrepresentations, inaccuracies and lack of objectivity in Dr. Besser's article, the Shoshone NF should entirely remove the article from the FSEIS and Final RADT Report. The Shoshone NF should not rely upon faulty science.

B. The Shoshone NF Must Remove Statements in the Final RADT Report Indicating that Pack Goats and Bighorn Sheep are Somehow Attracted to Each Other and/or that There is an Increased Probability of Contact Between the Species, as Such Statements are Unsupported.

The Final RADT Report states, "[e]vidence suggests that bighorn sheep and domestic sheep, or bighorn sheep and domestic goats, are attracted to each other which increases the probability that they will make close contact necessary for disease transmission." Final RADT Report at 6. No references are provided for this statement, but the Final RADT Report continues by adding that (1) "Drew et al. (2014) found that contact between bighorn sheep and domestic sheep and goats was weakly associated with the bighorn sheep rut and estrus in domestic species, and did not appear to be associated with foraging," and (2) "Wehausen et al. (2011) and Foreyt and Lagerquist (1996) both observed that the lack of disease transmission observed between bighorn sheep and wild and domestic animal species other than sheep and goats was better explained by interspecific behavioral patterns (i.e., lack of social attraction) that largely preclude contact and disease transmission, rather than an implication that other species do not carry pathogens that can cause pneumonia in bighorn sheep." *Id.* (citing Wehausen et al. (2011); Foreyt and Lagerquist (1996)). The Final RADT Report then relies on this so called "evidence" of "social attraction" to conclude: "[c]onsidering the evidence of social attraction between bighorn sheep and domestic goats discussed elsewhere in this document, spatial and temporal overlap could lead to contact between bighorn sheep and pack goats." *Id.* at 24, 25, 26.

The Shoshone NF's statements that "evidence" suggests that bighorn sheep and domestic goats are somehow "attracted" to each other and that such attraction "increases the probability that they will make close contact necessary for disease transmission" is deceptive, especially as it applies to pack goats. None of the "evidence" provided supports, or even "suggests," that pack goats and bighorn sheep are "attracted" to each other. The Shoshone NF also has no basis for stating that there is an "increase[d]" probability that bighorn sheep and pack goats "will make close contact necessary for disease transmission" or that "spatial and temporal overlap could lead to contact between bighorn sheep and pack goats." These statements are wrong and must be removed from the Final RADT Report, along with any and all conclusions drawn from these false statements.

The Shoshone NF also concluded without support in the Draft RADT Report that bighorn sheep and pack goats were "attracted" to each other and that such attraction would lead to an increased probability that the two species would make the close contact necessary for disease transmission. *See* Draft RADT Report at 6. There, as in the Final RADT Report, the Shoshone NF's conclusion was unsupported. So, NAPgA requested that the Shoshone NF remove the misleading conclusion from the Draft RADT Report or otherwise provide a scientific basis for applying the conclusion to pack goats. *See* NAPgA Comments 5.e. The Shoshone NF has done neither. Instead, the Shoshone NF has improperly twisted science to attempt to implicate pack goats in disease transmission to bighorn sheep.

In truth, Drew et al. (2014) did *not* find "that contact between bighorn sheep and domestic sheep and goats was weakly associated with the bighorn sheep rut and estrus in domestic species." Drew et al. (2014) actually found that "contact with domestic sheep or goats *did not correlate with either the bighorn breeding season or estrus in the domestic species*."

Drew et al. (2014) (emphasis added). Further, Drew at al. (2014) added, "[t]he association between translocation of 6 bighorns and contact with domestic ruminants or the time interval between translocation and contact are *unknown*." *Id.* (emphasis added). The Shoshone NF has misrepresented Drew et al. (2014). Drew et al. (2014) does *not* suggest in any way that pack goats and bighorn sheep are somehow attracted to each other, or that such attraction increases the probability of contact between the species.

Likewise, the Shoshone NF misrepresents Wehausen et al. (2011) and Foreyt and Lagerquist (1996) in its attempt to implicate pack goats in disease transmission to bighorn sheep. First, Wehausen et al. (2011) involved a study involving only domestic sheep, not domestic goats, so its scientific value to conclusions about attraction between domestic goats and bighorn sheep is unsubstantiated. Second, after a review of available experimental evidence, including evidence concerning "domestic goats," Wehausen et al. (2011) provided, "these findings suggest that the presence of other species in pens itself is unlikely to lead to bighorn sheep deaths and, furthermore, that *species other than domestic sheep* and their relatives are considerably less likely to transmit pathogens potentially fatal to bighorn sheep." Wehausen et al. (2011) (emphasis added). While Wehausen et al. (2011) references the Rudolph et al. (2003) study, which does *not* establish that domestic goats and bighorn sheep are somehow "attracted" to each other, it provides no data or other "evidence" concerning attraction between pack goats and bighorn sheep. Instead, Wehausen et al. (2011) provides, "[s]uch contact can occur in two ways: stray *domestic sheep* contacting bighorn sheep, or bighorn sheep contacting *domestic sheep* bands and spreading pathogenic microbes to other bighorn sheep. Keeping an adequate spatial buffer between bighorn sheep and domestic sheep has been considered the most reliable method to prevent contact between these species." (citations omitted; emphasis added). Wehausen et al. (2011) does *not* make conclusions about attraction or contact between pack goats and bighorn sheep.

Similar to Wehausen et al. (2011), Foreyt and Lagerquist (1996) was a study that did *not* involve domestic goats, and thus it provides scant scientific value to the Shoshone NF's conclusions about attraction between domestic goats and bighorn sheep. What Foreyt and Lagerquist (1996) actually conclude is the following: "some strains of *P. haemolytica* carried by cattle are potentially lethal to bighorn sheep." Foreyt and Lagerquist (1996). Because "the social interactive behavior between cattle and bighorn sheep is less compatible when compared to domestic sheep and bighorn sheep interaction," however, "the nose to nose contact required for transmission of *P. haemolytica* is less likely to occur between cattle and bighorn sheep." Foreyt and Lagerquist (1996). Although contact may be "less likely" to occur between cattle and bighorn sheep, Foreyt and Lagerquist (1996) concluded: "[b]ased on the in vitro results in which bighorn neutrophils were susceptible to *P. haemolytica* A1, 2 isolates from cattle, and the death of one bighorn in the cattle compatibility study in which *P. haemolytica* A2 was recovered at necropsy, we recommend that further studies be conducted to determine the compatibility of cattle and bighorn sheep." *Id.* Those studies have been conducted, as discussed below, and based on those studies, it does *not* appear that cattle and bighorn sheep are compatible. While Foreyt and Lagerquist (1996) provide evidence of the risk of disease transmission that cattle pose to bighorn sheep on the Shoshone NF, there is no "evidence" in the study suggesting that pack goats and bighorn sheep are somehow attracted to each other, or that such attraction in someway increases the probability of contact between the species.

Conclusion and Recommendation: The Shoshone NF misrepresents the available science concerning attraction between pack goats and bighorn sheep in the Final RADT Report. In fact, the available science, including that cited by the Shoshone NF, does *not* show that pack goats and bighorn sheep are somehow "attracted" to each other. Nor does it show that there is an increased probability of contact between the species. As a result, the Shoshone NF must remove all statements from the Final RADT Report alleging "attraction" between pack goats and bighorn sheep, as well as any and all conclusions indicating that there is an increased probability of contact between pack goats and bighorn sheep on the Shoshone NF. There is no basis for the Shoshone NF's findings and conclusions concerning attraction and increased probability of contact between pack goats and bighorn sheep on the Forest.

Still, even if there were some sort of "evidence" of "attraction" (which there is not), a basic analysis of attraction between the species would be incomplete without considering that pack goats are accompanied by a human owner, and often dogs, and that they generally wear bells and travel in groups. Even if there were attraction, which, based on the available science there is not, the presence of humans with pack goats, as well as dogs, and the fact that pack goats wear bells and travel in groups, would act as a deterrent to interaction between pack goats and bighorn sheep on the Shoshone NF.

C. The Shoshone NF Must Not Rely on Coggins et al. (2002) as Evidence of Contact and Subsequent Disease Transmission Between Domestic Goats and Bighorn Sheep as that Article is an Opinion Paper that Fails to Provide Any Reliable Evidence of Contact and/or Subsequent Disease Transmission.

In the Final RADT Report, the Shoshone NF cites Coggins et al. (2002) for "evidence" of contact and subsequent disease transmission between domestic goats and bighorn sheep. *See* Final RADT Report at 11. The Final RADT Report states, "Coggins et al. (2002) reported on two additional bighorn sheep die-offs in Idaho and California where there was circumstantial evidence that domestic goats may have been the cause. These authors also concluded that there was evidence for domestic goats causing pneumonia outbreaks in bighorn sheep but that the evidence was not as strong as that for domestic sheep." *Id.* Contrary to these statements in the Final RADT Report, Coggins et al. (2002) does *not* present any "evidence," circumstantial or otherwise, to indicate domestic goats contacted bighorn sheep resulting in disease transmission.

NAPgA's comment concerning the Coggins et al. (2002) study appears to have been ignored by the Shoshone NF, but remains relevant here:

> Coggins (2002) presents the 'opinion' of Victor L. Coggins of the Oregon Department of Fish and Wildlife, who is tasked with management of bighorn sheep through his job and who is a known opponent of livestock use on public lands. In Coggins (2002), there is not a shred of 'evidence' establishing the risk of disease transmission from domestic goats.
>
> * * *

> The second incident concerns bighorns affected by scabies Psoroptes spp. that 'were reported' to be near a large herd of 1200 range goats. There is no documentation of interaction between the bighorns and goats, and indeed Coggins (2002) provides no evidence the bighorn sheep and goats ever interacted or that the two species carried disease or that any disease was transferred between the two species. Later, several bighorns in neighboring herds died and certain of those were found to have died because of pneumonia (Coggins 2002), although Coggins (2002) does not present any evidence of such. Despite several deaths, Coggins (2002) notes that '[m]any individual bighorns were apparently not affected.' Based on that undocumented story, Coggins (2002) shares, '[c]ause and effect evidence is admittedly lacking, but I believe this disease outbreak started with the goats and adjacent Big Canyon bighorns and spread to the other two herds.' While Mr. Coggins is entitled to his beliefs, they are not considered 'evidence' and do not constitute 'science' and cannot be relied upon by the Shoshone NF to conclude that domestic goats pose a risk of disease transmission to bighorn sheep.
>
> Finally, the third incident in Coggins (2002) concerns California bighorns, not the Rocky Mountain bighorn sheep that are at issue on the Shoshone NF, and 'suspects' that feral goats were on the range potentially used by California bighorn rams that were part of a herd that experienced a die-off. Once again, Coggins (2002) notes that 'proof of contact is lacking' and fails to provide any documentation or other 'evidence' that goats had anything to do with the die-off of California bighorns.
>
> Notably, Coggins (2002) states, '[r]ecommendations in a September 3, 1998 letter to goat packers indicate domestic goats should 'avoid approaching wildlife within 50 feet' (Hunter et al. 1998).' NAPgA concurs with this recommendation and would be amenable to including such as a best management practice on the Shoshone NF. The Coggins (2002) paper does not support the statement that domestic goats are the cause of disease outbreaks, the paper does not present scientific research and the paper should not be relied upon by the Shoshone NF.

NAPgA Comments 5.b.

NAPgA now provides the above comment as an objection. Coggins et al. (2002) does not provide any valid scientific support for the Shoshone NF's suggestion that domestic goats have somehow contacted bighorn sheep in the wild, leading to disease transmission. As a result, the reference to Coggins et al. (2002) and discussion thereof in the Final RADT Report should be removed.

Conclusion and Recommendation: In its struggle to try to implicate pack goats in disease transmission to bighorn sheep on the Forest, the Shoshone NF relies on an opinion paper by Coggins et al. (2002) that provides absolutely no evidence of contact or subsequent disease transmission between domestic goats and bighorn sheep. As a result, the Shoshone NF's reference to Coggins et al. (2002) in the Final RADT Report must be removed, as well as any and all conclusions drawn from inclusion of the reference. There is no scientific basis for concluding or suggesting that pack goats have contacted bighorn sheep in the wild, leading to disease transmission.

2. The Shoshone NF has Failed to Consider Disease Transmission from Cattle to Bighorn Sheep in Violation of NEPA, the APA and Forest Service Direction on Sensitive Species.

The Forest Service Rocky Mountain Region (Region 2) has designated Rocky Mountain bighorn sheep (*Ovis canadensis*) as a sensitive species on National Forest System lands within the region. *See* Final RADT Report at 1 (citing USDA Forest Service 2017a). The sensitive species designation implies there is a concern for the long-term viability and/or conservation status of bighorn sheep on National Forest System lands in the Region. *Id.* (citing Forest Service Manual 2670.5; Beecham et. al 2007).

As the Shoshone NF recognizes, Forest Service Manual ("FSM") sections 2670.32 and 2672.1 direct National Forests to avoid or minimize impacts to species listed by the Regional Forester as a sensitive species, such as the Rocky Mountain bighorn sheep. *Id.* Specifically, FSM § 2670.32 directs the Shoshone NF to:

> 1. Assist States in achieving their goals for conservation of endemic species.
> 2. As part of the National Environmental Policy Act process, review programs and activities, through a biological evaluation, to determine their potential effect on sensitive species.
> 3. Avoid or minimize impacts to species whose viability has been identified as a concern.
> 4. If impacts cannot be avoided, analyze the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole. (The line officer, with project approval authority, makes the decision to allow or disallow impact, but the decision must not result in loss of species viability or create significant trends toward Federal listing.)
> 5. Establish management objectives in cooperation with the States when projects on National Forest System lands may have a significant effect on sensitive species population numbers or distributions. Establish objectives for Federal candidate species, in cooperation with the FWS or NMFS and the States.

Echoing this direction, FSM § 2672.1 provides:

> There must be no impacts to sensitive species without an analysis of the significance of adverse effects on the populations, its habitat, and on the viability of the species as a whole.

Likewise, the Region 2 Amendment to FSM § 2760 adds to this direction and further discusses the standards the Shoshone NF must meet in preparing a biological evaluation, which includes the standard to:

> [A]naly[ze] … the direct, indirect, and cumulative effects of the actions under all alternatives considered through the NEPA process on … sensitive species, or habitat required for recovery or to meet Forest Service objectives.

R2 Amendment, FSM § 2672.42(2).

Under the direction from the Forest Service Manual as well the requirements of NEPA discussed above, the Shoshone NF *must* analyze the effects of its actions on Rocky Mountain bighorn sheep. When it comes to pack goats, a species rarely found on the Shoshone NF and which has never been shown to cause disease transmission to bighorn sheep in a laboratory setting or in the wild, the Shoshone NF appears quite concerned about fulfilling the Forest Service Manual direction and achieving the requirements of NEPA to analyze the effects of its actions on Rocky Mountain bighorn sheep. When it comes to other species, however, namely cattle, a species commonly found on the Shoshone NF and which *has* been shown to cause disease transmission to bighorn sheep in laboratory settings and in the wild, the Shoshone NF turns a blind eye. The Shoshone NF's complete failure to analyze the effects of cattle grazing on the Forest on Rocky Mountain bighorn sheep is a blatant violation of Forest Service Manual direction and the requirements of NEPA.

Besides this violation, the Shoshone NF's failure is also a violation of the APA. An agency decision is to be reversed as arbitrary and capricious if the agency has "entirely failed to consider an important aspect of the problem." *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43. The Shoshone NF's silence on the issue of disease transmission from cattle to bighorn sheep will not suffice. The agency's path must be reasonably discerned. *Id.* A court "cannot infer an agency's reasoning from mere silence or where the agency failed to address significant objections and alternative proposals." *Beno v. Shalala*, 30 F.3d 1057, 1073 (9th Cir. 1994) (citing *Motor Vehicle,* 463 U.S. at 57); *see also*, *e.g.*, *SEC v. Chenery Corp*., 332 U.S. 194, 196-97 (1947) ("[i]t will not do for a court to be compelled to guess at the theory underlying the agency's action."). The Shoshone NF has "entirely failed to consider" the important problem of disease transmission from cattle to bighorn sheep on the Shoshone NF.

The Shoshone NF has designated 375,368 acres as generally suitable for cattle grazing on the Forest according to the May 2015 Record of Decision for the Land Management Plan Revision at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3837255.pdf (last visited July 14, 2017). This acreage overlaps considerably with reported bighorn sheep habitat on the Shoshone NF. *See*

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3837057.pdf (last visited July 14, 2017). Despite the presence of cattle in bighorn sheep habitat on the Shoshone NF, the Shoshone NF wholly failed to consider what impact cattle might have on bighorn sheep. Neither the Final Environmental Impact Statement for the Shoshone National Forest Land Management Plan Revision ("FEIS"), available at https://www.fs.usda.gov/detail/shoshone/landmanagement/planning/?cid=stelprdb5199919 (Shoshone NF Land Management Plan revision webpage), nor the retracted 2012 and 2013 versions of the Risk Analysis of Disease Transmission between Domestic Sheep and Goats and Rocky Mountain Bighorn Sheep ("2012 and 2013 RADT Reports") discussed the science concerning disease transmission from cattle to bighorn sheep, nor did these documents present and/or analyze the impacts of cattle on the Forest to this sensitive species.

Yet, in the Draft RADT Report, the Shoshone NF indicated that *contact between bighorn sheep and cattle is more frequent than contact between bighorn sheep and domestic goats*. *See* Draft RADT Report at 6. The Shoshone NF also reported, "*pathogenic bacteria can be transferred from cattle to wild sheep*" and cautioned that "*intimate interactions between wild sheep and cattle (e.g., shared feed lines or troughs) should be discouraged as part of a comprehensive approach to health management and conservation of North American wild sheep* (Wolfe et al. 2010)." *Id.* (emphasis added). So, the Shoshone NF clearly acknowledges that cattle pose a significant risk of disease transmission to bighorn sheep on the Forest and has even provided some of the science indicating such risk.

NAPgA also recognizes the significant risk of disease transmission from cattle to bighorn sheep on the Shoshone NF, and as a result provided the following comments:

> <u>NAPgA Comments 5.h</u>: The Shoshone NF Indicates that Contact Between Cattle and Bighorn Sheep, and Subsequent Disease Transmission, is More Likely than Contact and Subsequent Disease Transmission Between Domestic Goats and Bighorn Sheep. This Finding Must be Presented and Discussed in the RADT Report and SDEIS, and the Shoshone NF Must Take Action to Limit Contact and Subsequent Disease Transmission Between Cattle and Bighorn Sheep on the Shoshone NF.
>
> <u>NAPgA Comments 6.j</u>: If the Shoshone NF is Going to Randomly Report on Other Disease Organisms Carried by Domestic Goats, It Must Also Do the Same For Domestic Sheep, Cattle and All Other Animals on the Forest that Carry Other Disease Organisms to Which Bighorn Sheep May be Susceptible.
>
> <u>NAPgA Comments 20</u>: The Risk of Contact Tool Can and Should be Used to Model Contact Between Bighorn Sheep and Cattle on the Shoshone NF.
>
> <u>NAPgA Comments 5.a</u>: "According to the Shoshone NF's own references, M. ovi has also been detected in cattle (Wolfe et al. 2010). As a result, the Shoshone NF should research and provide further information on the full suite of potential hosts of M. ovi, including cattle."
>
> <u>NAPgA Comments 40</u>: "To the extent 'respiratory disease' is an impact to the

species, it should be avoided or minimized from all potential sources, not just from domestic sheep, domestic goats and packgoats. To single out one single species and only address potential risk from that species, when other species also pose a risk, would be arbitrary and capricious, and would also ignore a significant aspect of the problem. For example, the RADT Report indicates that cattle pose a significant risk of disease transmission to bighorn sheep on the Shoshone NF. As that is the case, cattle cannot be ignored in the analysis of disease transmission in the RADT Report and SDEIS. Other species also pose a risk of disease transmission to bighorn sheep on the Shoshone NF, and such risk should also be considered in the RADT Report and SDEIS."

NAPgA Comments 42: "There is also potential for disease transmission from cattle, other wild animals and from wild bighorn sheep themselves. What aren't these avenues of disease transmission being considered in the SDEIS? Under the APA and NEPA, they must be. As a result, Issue #1 should be revised to state: there is potential for disease transmission from domestic sheep, domestic goats, pack goats, cattle, other ruminants, wild animals, wild bighorn sheep to wild bighorn sheep."

NAPgA Comments 56: "The Shoshone NF's discussion of 'Cumulative Effects' on page 20 of the SDEIS is inadequate and incomplete. First, although cattle are known to pose a significant risk of disease transmission to bighorn sheep, the Shoshone NF fails to provide any analysis of cattle on adjacent lands within 35 kilometers of core native bighorn sheep herds on the Forest. Such analysis is necessary in the Cumulative Effects section of the SDEIS and should be added."

NAPgA Comments 63: "The SDEIS also fails to consider that other animals on the Shoshone NF, like elk, deer, birds, etc., may carry the pathogens that can lead to diseases. Thus, contact between cattle and other animals, besides packgoats, and bighorn sheep may lead to disease transmission on the Shoshone NF. The SDEIS does not discuss this possibility."

In response to these numerous substantive comments, the Shoshone NF scrubbed the Final RADT Report of all references to "cattle" and even deleted its previous discussion of the science establishing disease transmission from cattle to bighorn sheep. Instead, the Shoshone NF simply provided: "[a]llocation of cattle grazing allotments is beyond the scope of this decision to be made, because that decision has already been made as part of the 2015 Forest Plan decision. FSEIS at 46. This one line response to NAPgA's numerous substantive comments does not meet the Shoshone NF's obligation to respond to comments under NEPA and in and of itself constitutes a NEPA violation. *See* 40 C.F.R. § 1503.4; *Ctr. for Biological Diversity*, 349 F.3d at 1167 (discussing agency requirement to respond to comments).

So, where is the analysis of the impacts on bighorn sheep from cattle required under the Forest Service Manual, under NEPA and under the APA? It is not contained in the FSEIS or Final RADT Report. It is not contained in the FEIS. It is not contained in the 2012 and 2013 RADT Reports, and indeed cannot be, as those reports have been held illegal and removed from use. The fact is *there is no analysis of the impacts on bighorn sheep from cattle on the Shoshone*

NF. The Shoshone NF has completely failed to provide any analysis of the significant adverse impacts of cattle on bighorn sheep at any point in the NEPA analysis for the Shoshone NF revised Land Management Plan. Such failure constitutes an obvious violation of direction in the Forest Service Manual, NEPA and the APA.

While the Shoshone NF's attempt to skirt the law is interesting, especially after recognizing the significant risk of disease transmission from cattle to bighorn sheep on the Forest within the Draft RADT Report, it is not consistent with legal authority nor does it protect the Shoshone NF from litigation as the statute of limitations for challenging the FEIS has not yet run and there are now grounds for challenging either the FEIS or the FSEIS. Notably, in its 2014 Objections to the Shoshone Land Management Plan Draft Decision and its 2012 Comments on the Draft Environmental Impact Statement and Draft Land Management Plan for the Shoshone Land Management Plan Revision, NAPgA indicated that the Shoshone NF must analyze the risk of disease transmission from other animals, including cattle, to bighorn sheep on the Forest in order to satisfy the requirements of NEPA and the APA. The Shoshone NF failed to satisfy these requirements then, and does so again in the FSEIS and Final RADT Report. The FSEIS fails to consider that contact between cattle and other animals, besides pack goats, and bighorn sheep, on and off the Forest, may lead to disease transmission to bighorn sheep on the Shoshone NF. The FSEIS also fails to consider disease transmission from other bighorns on the Shoshone NF.

The Forest Service Manual, NEPA and the APA are not constructed so narrowly that the Shoshone NF can avoid analysis of the impacts on bighorn sheep from cattle and other animals by pointing to a past decision and/or constructing the purpose and need of the FSEIS so narrowly to eliminate such analysis. Under the National Forest Management Act ("NFMA") and associated regulations (36 C.F.R. § 219.19), and under Forest Service Manual §§ 2670.32, 2672.1 and 2672.4, the Shoshone NF is not directed to single out domestic sheep, domestic goats and/or pack goats in managing bighorn sheep habitat on the Forest; rather, the Shoshone NF is directed to avoid or minimize any and *all impacts* to the sensitive species. To the extent "respiratory disease" is an impact to the species, it should be avoided or minimized from all potential sources, not just from domestic sheep, domestic goats and pack goats. To single out one species and only address potential risk from that species, when other species also pose a risk, would be arbitrary and capricious, and would also ignore a significant aspect of the problem.

As a result, the purpose and need for the proposed federal action being considered in the FSEIS should be changed. The purpose and need should read: To comply with NFMA requirements and Forest Service Manual direction to manage habitat to support viable populations of bighorn sheep and to avoid or minimize impacts to such species on the Shoshone NF, and to determine what, if any, recreational, stock or other uses are appropriate within the Shoshone NF by analyzing the risk of respiratory disease within bighorn sheep populations on the Forest, and to determine what, if any, direction should be included in the revised Forest Plan.

Moreover, in the FSEIS, the "significant issues" identified by the Shoshone NF and which are to be considered in its NEPA review are inappropriately narrow and fail to capture issues that warrant detailed study in the FSEIS. *See* FSEIS at 4. To start, Issue #1 states: "[t]here is potential for disease transmission from domestic sheep, domestic goats, and pack goats to wild bighorn sheep." There is also potential for disease transmission from cattle, other wild animals and from wild bighorn sheep themselves. Why aren't these avenues of disease

transmission being considered in the FSEIS? Under the Forest Service Manual, NEPA and the APA, they must be. As a result, Issue #1 should be revised to state: "there is potential for disease transmission from domestic sheep, domestic goats, pack goats, cattle, other ruminants, wild animals, and wild bighorn sheep to wild bighorn sheep."

Issue #2 should be updated to reflect the above changes to Issue #1, noting that there are differences in the potential for disease transmission by different species to wild bighorn sheep. Issue #3 is also too narrow. Issue #3 states: "[t]here are minimal options for reducing potential contact and disease transmission." *Id.* at 4. Issue #3 appears to foreclose consideration of the numerous options available for reducing potential contact and disease transmission, such as implementation of NAPgA's proposed best management practices, use of vaccines, removing cattle grazing allotments from the Forest, etc. Issue #3 should be changed to read: "there are options for reducing potential contact and disease transmission."

Finally, Issue #4 should also be updated to reflect the above changes to Issue #1, and it should be further revised to indicate that contact between bighorn sheep and other species, or other bighorn sheep, increases the risk of disease transmission to bighorn sheep *only* if those other species or other bighorn sheep are carrying and shedding disease that the bighorn sheep may be susceptible to. The best available science on disease transmission, especially with regard to pack goats, shows that pack goats that are not carriers/shedders of offensive pathogens are not a risk for disease transmission to bighorn sheep.

As NAPgA provided in its comments to the Shoshone NF, the Shoshone NF indicates that contact between bighorn sheep and cattle is more frequent than contact between bighorn sheep and domestic goats. *See* Draft RADT Report at 6. The Shoshone NF also reported, "pathogenic bacteria can be transferred from cattle to wild sheep" and cautioned that "intimate interactions between wild sheep and cattle (e.g., shared feed lines or troughs) should be discouraged as part of a comprehensive approach to health management and conservation of North American wild sheep (Wolfe et al. 2010)." *Id.* The findings from Wolfe et al. (2010) are actually more telling than the Shoshone NF reported. In Wolfe et al. (2010), a pneumonia epizootic in bighorn sheep was determined to be caused by cattle. Wolfe et al. (2010). The study further indicated:

> Segregating wild sheep from domestic sheep has long been recognized as important to preventing epizootics in bighorn sheep (Warren, 1910; Shillinger, 1937; Foreyt and Jessup, 1982). Thus far, similar emphasis has not been placed on preventing interactions between cattle and bighorn sheep, most likely because species differences and a tendency toward interspecies avoidance are thought to help minimize opportunities for pathogen exchange (Foreyt and Lagerquist, 1996). However, the similarities between *Pasteurellaceae* and other respiratory pathogens of cattle and domestic sheep suggest similar adverse consequences to bighorn sheep if pathogen transmission were to occur between cattle and bighorns (Onderka et al., 1988; Singer et al., 2000). Such consequences have been demonstrated experimentally: five of eight bighorns died within 4 days of receiving intradermal

> injections of a cattle vaccine containing attenuated, live *Mannheimia haemolytica* (Onderka et al., 1988), four bighorns died within 2 days after intratracheal inoculation with *M. haemolytica* isolated from cattle (Dassanayake et al., 2009b), and one of five captive bighorns died 6 days after being copastured with Holstein calves (Foreyt and Lagerquist, 1996). We conclude from our findings, combined with other published observations, that intimate interactions between wild sheep and cattle (e.g., shared feed lines or troughs) also should be discouraged as part of a comprehensive approach to health management and conservation of North American wild sheep species.

Id.

Although the Shoshone NF does not discuss the evidence, the Shoshone NF's scientific references show a much stronger correlation between disease transmission from cattle to wild sheep populations than they do a correlation between disease transmission from domestic goats to wild sheep populations. In addition to Wolfe et al. (2010), the Shoshone NF referenced Drew et al. (2014) which analyzes the health of 18 bighorns that were in contact with domestic ruminants in the northwestern United States between 1994 and 2008. Of the four bighorn sheep that allegedly contacted domestic goats, all of them were euthanized (i.e., they were killed instead of dying of other causes) and none of them showed evidence of pneumonia (Drew et al. (2014)). In contrast, of the four bighorn sheep that contacted cattle, two were euthanized and two died (i.e., died of causes other than euthanization) and one of the bighorns that died showed evidence of pneumonia. Drew et al. (2014).

Likewise, in Foreyt (1994) and Foreyt and Lagerquist (1996) *no* bighorn sheep died after being penned with domestic goats, yet a bighorn sheep died shortly after being penned with cattle. Foreyt and Lagerquist (1996). The Onderka et al. (1988) study referenced by the Shoshone NF states, "[i]t is suggested that bighorn sheep are very susceptible to *P. haemolytica* from domestic livestock and *should not be allowed in contact with sheep or cattle*." (emphasis added). In addition to these scientific studies referenced by the Shoshone NF, there is overwhelming scientific literature indicating that cattle carry the pathogens that the Shoshone NF states are of concern with regard to disease transmission to bighorn sheep on the Forest. Here is a small sampling of such literature for the Shoshone NF to review and discuss in the Final RADT Report and FSEIS:

1. Klima et al. 2014. Pathogens of Bovine Respiratory Disease in North American Feedlots Conferring Multidrug Resistance via Integrative Conjugative Elements. Journal of Clinical Microbiology 52(2):438-48, available at http://jcm.asm.org/content/52/2/438.full (Attachment 4).

2. Griffin et al. 2010. Bacterial pathogens of the bovine respiratory complex. Veterinary Clinics of North America: Food Animal Practice 26(2):381-94, available at https://www.ncbi.nlm.nih.gov/pubmed/20619191 (Attachment 5).

3. Paulsen, D. B. 2013. Respiratory Diseases of Cattle. Louisiana Animal Disease Diagnostic Laboratory, available at http://mail.acvp.org/meeting/2013/appFiles/212_Paulsen.docx (Attachment 6).

4. Brishard, S. 2004. *Mycloplasma* Disease in Cattle. Indiana Animal Disease Diagnostic Laboratory, Fall 2004 Newsletter, available at https://www.addl.purdue.edu/newsletters/2004/fall/mycoplasma.htm (Attachment 7).

5. Rehmtulla, A. J., Thompson, R. G. 1981. A review of the lesions in shipping fever of cattle. Can. Vet. J. 22, 1-8, available at https://www.researchgate.net/publication/16179700_A_Review_of_the_Lesions_in_Shipping_Fever_of_Cattle.

6. Nicholas, R., Baker, S., Ayling, R., Stipkovits, L. 2000. Mycoplasma infections in growing cattle. Cattle Practice 8(2):115-118, available at https://www.cabdirect.org/cabdirect/abstract/20002213576 (Attachment 8).

7. Maunsell, F.P., Woolums, A.R., Francoz, D., Rosenbusch, R.F., Step, D.L., et al. 2011. *Mycoplasma bovis* infections in cattle. J Vet Intern Med 25(4):772-783, available at https://www.ncbi.nlm.nih.gov/pubmed/18460630 (Attachment 9).

8. Maeda, T., Shibahara, T., Kimura, K., Wada, Y., Sato, K., et al. 2003. *Mycoplasma bovis*-associated suppurative otitis media and pneumonia in bull calves. J Comp Path 129(2-3):100–10, available at https://www.ncbi.nlm.nih.gov/pubmed/12921715 (Attachment 10).

9. Salam Hala, S.H., Hotzel, H. 2013. Investigation of phenotypic variations amongst *Mycoplasma bovis* field German isolates using SDS-PAGE. Beni-Suef University Journal of Basic and Applied Sciences 2(2):103-07, available at http://www.sciencedirect.com/science/article/pii/S2314853513000310#bib36.

These publications are attached and/or available online as indicated above.

With the abundance of evidence and science indicating that cattle pose a significant risk of disease transmission to bighorn sheep on the Shoshone NF, the Shoshone NF is compelled to model potential contact between cattle and bighorn sheep on the Forest and take appropriate action to avoid or minimize risk of contact and subsequent disease transmission. While the Bighorn Sheep Risk of Contract Tool discussed by the Shoshone NF in the Draft RADT Report was not developed for application to pack goat use on the Shoshone NF, it *can* be used to model contact between cattle and bighorn sheep. *See* https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd527641.pdf. Considering the significant risk of disease transmission between cattle and bighorn sheep, the Shoshone NF

should use the Risk of Contact Tool to model contact between bighorn sheep and cattle.

Consistent with the Shoshone NF's methodology and rationale for risk rankings, as presented in the Draft and Final RADT Reports, the Shoshone NF would then need to consider closure of cattle allotments on the Shoshone NF within 35 kilometers (21 miles) of bighorn sheep core herd home range on the Shoshone NF. Based on the best available science and in order to avoid arbitrary and capricious decision-making under NEPA and the APA, the Shoshone NF should apply the Risk of Contact Tool to cattle allotments on the Shoshone NF and subsequently consider closure of those cattle allotments that show at "high" or "moderate" risk of contact (i.e., are located within 35 kilometers of a core native bighorn sheep herd on the Shoshone NF).

Finally, the Shoshone NF's discussions of "Cumulative Effects" on pages 29-30 of the FSEIS and pages 33-34 of the Final RADT Report are inadequate and incomplete. Although cattle are known to pose a significant risk of disease transmission to bighorn sheep, the Shoshone NF fails to provide any analysis of cattle on adjacent lands within 35 kilometers of core native bighorn sheep herds on the Forest. Such analysis is necessary in the Cumulative Effects sections of the FSEIS and Final RADT Report and must be added.

Conclusion and Recommendation: The Shoshone NF has violated NFMA, Forest Service direction, NEPA, and the APA by failing to present and analyze the impacts to bighorn sheep, a sensitive species, from cattle on the Forest. The Shoshone NF has itself acknowledged that cattle pose a significant risk of disease transmission to bighorn sheep and has presented, and been presented with, the evidence and science establishing such risk. Rather than presenting this evidence and science and adequately presenting and analyzing the impacts to bighorn sheep from cattle on the Forest as required under NFMA, the Forest Service Manual, NEPA, and the APA, the Shoshone NF has "entirely failed to consider" this important aspect of the problem of disease transmission to bighorn sheep on the Forest. To single out pack goats and only address potential risk from that species, when other species, specifically cattle, pose a more significant risk, is arbitrary and capricious. As a result, the Shoshone NF must: (1) revise the purpose and need of the FSEIS to consider the risk of disease transmission from cattle to bighorn sheep; (2) revise the issues in the FSEIS to consider the same; (3) present and analyze in the FSEIS the impacts to bighorn sheep from cattle on the Shoshone NF, including cumulative impacts; (4) present and discuss in the Final RADT Report the evidence and science establishing the significant risk of disease transmission from cattle to bighorn sheep; (5) model in the Final RADT Report, using quantitative methods, such as the Bighorn Sheep Risk of Contract Tool, the risk of contact and subsequent disease transmission between cattle and bighorn sheep on the Shoshone NF; and (6) update the management direction in the Draft ROD and FSEIS to avoid or minimize the impacts to bighorn sheep from cattle on the Forest.

3. The Shoshone NF Arbitrarily and Capriciously Only Considers Disease Organisms from Domestic Goats, Rather than from All Domestic Livestock, Including Domestic Sheep and Cattle, and Other Animals that May Carry and Transmit Such Organisms to Bighorn Sheep.

In the Final RADT Report, in an apparent attempt to bolster its case against pack goats, the Shoshone NF discusses several studies indicating that domestic goats may carry other

"disease organisms" with consequences for bighorn sheep. *See* Final RADT Report at 10-11. Since these disease organisms are not directly related to respiratory disease, NAPgA questioned why the Shoshone NF was discussing studies on these disease organisms and why, if these disease organisms were so important, the Shoshone NF has not discussed studies on these disease organisms with respect to other domestic animals. *See* NAPgA Comments 6.j.; *see also id.* 6.k. (discussing how the Shoshone NF's discussion of other disease organisms is irrelevant to the issue of transmission of respiratory disease and does not implicate goats in disease transmission and subsequent bighorn sheep die-offs). The Shoshone NF responded to NAPgA in its responses to comments in the FSEIS that, for at least one study, "[t]he study is relevant because the authors conclude that transmission of lungworm from domestic goats may predispose bighorn sheep to development of pneumonia." FSEIS at 49. If this is true, that other disease organisms may predispose bighorn sheep to development of pneumonia, then why has the Shoshone NF *only* discussed studies on these disease organisms concerning domestic goats, and not also studies on these disease organisms with respect to other domestic animals, such as domestic sheep and cattle? In order to avoid arbitrary and capricious decision-making, the Shoshone NF should either remove the discussion of other disease organisms from the Final RADT Report or include such discussion for all animals that carry other disease organisms that can be transmitted to bighorn sheep, such as domestic sheep and cattle, among other species.

Conclusion and Recommendation: The Shoshone NF has arbitrarily and capriciously, in violation of NEPA and the APA, only considered whether other disease organisms from domestic goats may present "serious consequences" for bighorn sheep. Instead, to the extent these other disease organisms are actually related to "respiratory disease" in bighorn sheep on the Shoshone NF, the real issue of concern on the Forest, and to avoid arbitrary and capricious decision-making, the Shoshone NF must also consider in the FSEIS and Final RADT Report whether other disease organisms from other domestic animals, including those from domestic sheep and cattle may present "serious consequences" for bighorn sheep. Otherwise, the Shoshone NF should remove the discussion of other disease organisms from the Final RADT Report, as it is not relevant to the transmission of respiratory disease from pack goats to bighorn sheep on the Shoshone NF.

4. The Shoshone NF Should Provide Further Details Concerning the Proposed Permit System and Properly Analyze the Potential Impacts of the Permit System on Pack Goat Users.

The Draft ROD presents and discusses Alternative 3b, which would allow pack goat use on the Shoshone NF through a permit system in areas outside occupied core native bighorn sheep habitat. *See* Draft ROD at 5-7. The permit system would require adherence to certain avoidance and mitigation measures listed in the Draft ROD. *See id.* at 6-7. Further discussion of the proposed permit system under Alternative 3b is provided in the FSEIS. *See* FSEIS at 7-9, 24. While many of the conditions of the proposed permit system are spelled out in the Draft ROD and FSEIS, including conditions 2-7 and 9-12, a couple of conditions, namely conditions 1 and 8, are not well defined. *See* Draft ROD at 6-7 (providing conditions); FSEIS at 8-9 (same).

Condition 1 states:

> A permit for all pack goat use will be required. The permit will identify the required and recommended actions for reducing the risk of contact and potential for disease transmission between pack goats and bighorn sheep.

Draft ROD at 6; FSEIS at 8.

Condition 8 states:

> In order to obtain a permit for pack goat use on the Shoshone National Forest, the requester must present documentation of veterinary health inspection and disease testing of all pack goats before entering Shoshone National Forest lands. The permit will require pack goat handlers to be in possession of a health and disease testing certificate for each pack goat while on the Shoshone National Forest. Inspection and testing protocol will be based on best available science and could change as new science becomes available. Testing requirements will be identified on the Shoshone National Forest website.

Draft ROD at 7; FSEIS at 8.

Condition 1 is not problematic on its own, but in combination with the other conditions and in light of the entire discussion of the proposed permit system in the Draft ROD and FSEIS, Condition 1 is incomplete. Either in Condition 1, or elsewhere in the Draft ROD and FSEIS, the Shoshone NF should provide more information on how much the permit for pack goat use will cost, if anything, and how long it will take a permit applicant to obtain such permit. Without specifics on the proposed permit system, such as cost, details concerning the application process, application processing times, etc., the Shoshone NF's presentation of the proposed permit system is incomplete and the Draft ROD and FSEIS lack proper analysis of the permit system. If the permit is too costly or if the application process is too cumbersome, the Shoshone NF could effectively eliminate or reduce the use of pack goats on the Shoshone NF. In such case, the permit system would have significant adverse impacts on pack goat use, which would need to be analyzed in the FSEIS under NEPA.

Condition 8 presents similar deficiencies to Condition 1, in that it lacks sufficient detail and is not accompanied by any sort of discussion or analysis in the Draft ROD and FSEIS. Condition 8 states that "[i]n order to obtain a permit for pack goat use on the Shoshone National Forest, the requester must present documentation of veterinary health inspection and disease testing of all pack goats before entering Shoshone National Forest lands." Draft ROD at 7; FSEIS at 8. What is meant by "veterinary health inspection and disease testing?" What will be required under such inspection and testing? What aspects of health will be inspected and which diseases will be tested for? Providing such information is crucial to understanding and analyzing the impacts of the permit system under NEPA.

In addition, what will the "health and disease testing certificate" consist of? And, what will the "[i]nspection and testing protocol" and "[t]esting requirements" be? When will the

permit system be designed and implemented? Until these questions are answered, the Shoshone NF's presentation of the proposed permit system is incomplete and the Draft ROD and FSEIS lack proper analysis of the permit system. Again, if the veterinary health inspection and disease testing processes are too costly or burdensome, the Shoshone NF could effectively eliminate or reduce the use of pack goats on the Shoshone NF. In such case, the permit system would have significant adverse impacts on pack goat use, which would need to be analyzed in the FSEIS under NEPA.

Conclusion and Recommendation: In order to satisfy NEPA requirements, as well as NAPgA's concerns about permit system requirements, the Shoshone NF should provide as much detail about the proposed permit system as possible in the Draft ROD and FSEIS, and subsequently analyze the impacts of the permit system under NEPA. To the extent the full details about the permit system requirements cannot be spelled out in the Draft ROD and FSEIS, the Shoshone NF should set up and guarantee a process to allow stakeholders, including NAPgA, to be involved in the design of the permit system, so that the Shoshone NF is prevented from using the permit system to effectively create a ban on pack goat use on the Forest by making it too costly and/or burdensome for pack goat users.

5. The Shoshone NF Has Violated the Orders of the United States District Court for the District of Idaho Prohibiting the Shoshone NF from Relying Upon the Findings and Conclusions of the RADT Committee and Payette Principles Committee in the FEIS and Final RADT Report.

In 2009, the United States District Court for the District of Idaho prohibited the Shoshone NF's use of the findings and conclusions of two illegal advisory committees, known as the RADT Committee and Payette Principles Committee. *See Idaho Wool Growers Assoc. v. Schafer*, 637 F. Supp. 2d 868 (D. Idaho 2009); *Idaho Wool Growers Assoc. v. Schafer*, 2009 WL 3806371 (D. Idaho). In violation of this prohibition, the Shoshone NF used the findings and conclusions of these Committees to prepare its 2012 and 2013 RADT Reports and the associated May 6, 2015 Record of Decision for the Shoshone NF revised Land Management Plan ("LMP") and FEIS. As a result, the Shoshone NF was found in contempt of court on February 23, 2016. *See* Memorandum Decision and Order, *Idaho Wool Growers Assoc. and North American Packgoat Assoc. v. Vilsack*, No. 1:08-cv-00394-BLW (D. Idaho, Feb. 23, 2016). Following the Court's February 23, 2016 Memorandum Decision and Order, the parties agreed to a Stipulated Settlement Agreement which was entered with the Court and required the Shoshone NF to prepare a new RADT Report and supplemental environmental impact statement. *See* Order Entering Stipulated Settlement Agreement, *Idaho Wool Growers Assoc. and North American Packgoat Assoc. v. Vilsack*, No. 1:08-cv-00394-BLW (D. Idaho, July 14, 2016). Despite these previous violations of the Federal Advisory Committee Act ("FACA") and the Court's associated orders prohibiting the Shoshone NF from using the findings and conclusions of the RADT Committee and Payette Principles Committee, it appears that the Shoshone NF has once again used the findings and conclusions of the Committees; this time to prepare its Final RADT Report and FSEIS.

Several references in the Final RADT Report and FSEIS rely on the reports from the RADT Committee and Payette Principles Committee in violation of the Court's orders. These references, as well as any discussion relying upon them, should be removed from the Final

RADT Report and FSEIS to avoid violation of FACA and the Orders of the United States District Court for the District of Idaho. These references include:

- USAHA (U.S. Animal Health Association). 2009. Recommendations on best management practices for domestic sheep grazing on public land ranges shared with bighorn sheep. U.S. Animal Health Association Joint Working Group Committee on Wildlife Diseases and Committee on Sheep and Goats. Accessed April 11, 2017 at http://www.bighornsheep.org/article_USAHA%20Joint%20Working%20Group%20FINAL2_091109.pdf. Final RADT Report at 40.

- Western Association of Fish and Wildlife Agencies (WAFWA). 2012. Wild Sheep Working Group (WSWG), Recommendations for domestic sheep and goat management in wild sheep habitat. Western Association of Fish and Wildlife Agencies, Cheyenne, Wyoming, USA. Final RADT Report at 41; FSEIS at 36.

- The Wildlife Society. 2015. Domestic sheep and goats disease transmission risk to wild sheep Joint Issue Statement. Accessed April 10, 2017, at http://wildlife.org/wp-content/uploads/2015/03/WS-DS_DiseaseTransmission_TWS-AAWV_JointStatement_APPROVED.pdf. Final RADT Report at 41.

USAHA (2009) relies on only three references, one of which is:

- Western Association of Fish and Wildlife Agencies (WAFWA). 2007. Wild Sheep Working Group, Initial Subcommittee. Recommendations for Domestic Sheep and Goat Management in Wild Sheep Habitat, June 21, 2007. 27 pp. http://www.wafwa.org/documents/wswg/WSWGManagementofDomesticSheepandGoats inWildSheepHabitatReport.pdf. USAHA at 8 (2009).

WAFWA (2007), in turn, relies primarily on the following:

- USDA Forest Service 2006a. Risk Analysis of Disease Transmission Between Domestic Sheep and Bighorn Sheep on the Payette National Forest. 41 pp.

- USDA Forest Service. 2006b. Payette National Forest Science Panel Discussion on risk for disease transmission analysis between bighorn and domestic sheep. P. Soucek, editor. 24 pp.

WAFWA at 21 (2007).

These two references are better known as the RADT Committee Report and the Payette Principles Committee Report, respectively. These are the two reports that the Court ordered, and the Shoshone NF agreed, not to use in preparing the Final RADT Report and FSEIS. These

reports were integral to WAFWA (2007) and discussed at length. *See* WAFWA at 3, 4-5, 6, 7, 13. Indeed, WAFWA (2007) states, "[o]ur [Wild Sheep Working Group] concurs with the statements development and adopted by the interdisciplinary Payette NF Science Panel, and *they form the foundation for our recommendations*." WAFWA at 5 (2007) (emphasis added).

The RADT Committee Report and the Payette Principles Committee Report "formed the foundation" for WAFWA's 2007 recommendations. Then WAFWA's 2007 recommendations formed the foundation for USAHA's 2009 recommendations. As stated directly in USAHA (2009), the "document primarily focuses on the domestic sheep portion of best management practices," which "can be found" in more comprehensive form "in the Western Association of Fish and Wildlife Agencies (WAFWA) Bighorn Sheep Working Group Recommendations for Domestic Sheep and Goat Management in Wild Sheep Habitat" (a.k.a. WAFWA (2007)).

Notably, the Forest Service's review of the Final RADT Report (Attachment 11), performed by Patty Klein, Washington Office, Veterinary Medical Officer, was dependent on USAHA (2009). Indeed, the review just repeats the "recommended best practices for grazing domestic sheep (and goats) on public lands where contact with bighorn sheep may occur" from USAHA (2009). The Forest Service's review is cited and used in the Final RADT Report and FSEIS, along with citation and use of USAHA (2009).

The Forest Service's review also relies heavily on WAFWA (2012) and again copies recommendations from that reference. WAFWA (2012), in turn, relies largely on WAFWA (2007) and USAHA (2009). *See*, *e.g.*, WAFWA at 3, 4, 6, 8, 16, 20 (2012). WAFWA (2012) indicates that the report titled, "Recommendations for Domestic Sheep and Goat Management in Wild Sheep Habitat (WAFWA 2007)," as revised, "has represented the official position of WAFWA on the management of domestic sheep and goats and wild sheep." WAFWA at 3 (2012). So, basically, WAFWA (2007), USAHA (2009) and WAFWA (2012), as well as the Forest Service's review, have simply continued the findings and conclusions of the RADT Committee Report and Payette Principles Committee Report. The Wildlife Society (2015) suffers from the same defect by copying the recommendations of, and citing to, WAFWA (2012).

In its comments, NAPgA asked the Shoshone NF to remove the reference to WAFWA (2012) and to rely on scientific research instead of people's opinions on domestic sheep and goat management in wild sheep habitat. *See* NAPgA Comments 5.b. In response, the Shoshone NF provided, "[t]he reference to WAFWA (2012) was removed from the final RADT as evidence of the risk of disease transmission risk from domestic goats to wild sheep." *See* SDEIS Comments and Responses at 66, available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd565730.pdf. Removal of the reference was not completed. With regard to USAHA (2009) the Shoshone NF's reliance on the reference was revealed through the communication from Ms. Patty Klein, which was not provided to NAPgA until January 22, 2018 when it was mailed to a NAPgA member. The communication is from October 2, 2017. Ms. Klein relies substantially on WAFWA (2012), which the Shoshone NF was supposed to remove as a reference. Regardless, all of these later references improperly rely on the findings and conclusions of the illegal RADT Committee and Payette Principles Committee and simply restate the recommendations from the Committees. The Court specifically forbade the Shoshone NF from using such references as "an end-run

around the Court's mandate."

The Court ordered that "[t]he Committees' findings and/or conclusions are not to be relied upon by the Forest Service *with respect to any future agency decisions*." *Idaho Wool Growers*, 637 F. Supp. 2d at 880 (emphasis added); *see also Idaho Wool Growers Assoc. v. Schafer*, 2009 WL 3806371, *4 ("The Forest Service may not rely upon the Committee's findings and/or conclusions in reaching future agency decisions."). To be clear on what that meant and how it would apply to future agency decisions, the Court clarified that the Forest Service should not "grandfather" RADT Committee and Payette Principles Committee findings and conclusions to support Forest Service decisions—"[s]imply put, and consistent with the Court's existing directive, the Forest Service may not rely upon the Committees' findings and/or conclusions in reaching future agency decisions – either directly or indirectly, through an end-run around the Court's mandate . . . ." *Idaho Wool Growers Assoc.*, 2009 WL 3806371, *2.

Here, in the Final RADT Report and FSEIS the Shoshone NF does not rely directly on the findings and conclusions of the RADT Committee and Payette Principles Committee by citing directly to the Committee reports, as it did for the 2012 and 2013 RADT Reports. Instead, here, the Shoshone NF indirectly relies on the findings and conclusions of the RADT Committee and Payette Principles Committee "through an end-run around the Court's mandate;" by citing to reports that incorporate the findings and conclusions of the RADT Committee and Payette Principles Committee. The Court specifically prohibited this type of "end-run around." The Shoshone NF cannot continue to rely upon the findings and conclusions of the RADT Committee and Payette Principles Committee "either directly or indirectly." The Shoshone NF is in violation of the Court's Orders and must remove the above listed references, as well as any and all discussion reliant on those references, from the Final RADT Report and FSEIS.

Conclusion and Recommendation: The Shoshone NF has once again violated the Orders of the United States District Court for the District of Idaho, which prohibited the Shoshone NF from relying upon the findings and conclusions of the RADT Committee and Payette Principles Committee in preparing the Final RADT Report and FSEIS. Through an "end-run around" the Court's Orders, the Shoshone NF has indirectly relied on the findings and conclusions of the Committees by citing to and relying upon references that incorporate the findings and conclusions of the Committees. Such indirect use of the findings and conclusions of the Committees was specifically prohibited by the Court's Orders. As a result, and in order to achieve compliance with the Court's Orders, the Shoshone NF must remove reference to USAHA (2009), WAFWA (2012) and The Wildlife Society (2015) in both the Final RADT Report and FSEIS. Likewise, the Shoshone NF must remove reference to the Forest Service's review of the Final RADT Report performed by Patty Klein, Washington Office, Veterinary Medical Officer. Then, any and all discussion that cited to or relied upon these references must also be corrected and/or removed. Finally, the discussions in the Final RADT Report and FSEIS must be revised so that they are no longer influenced by or reliant on these improper references in any way.

6. The Shoshone NF's Methodology and Rationale for Risk Rankings in its Qualitative Risk Assessment are Unexplained, Uninformed and Unjustified.

As discussed in the FSEIS and Final RADT Report, the Shoshone NF prepared a qualitative assessment of the risk of disease transmission between pack goats and bighorn sheep on the Forest, based on "the risk of contact along with other factors such as disease prevalence, pathogen virulence, and potential for transmission." *See* FSEIS at 18-19, 49-50 (explaining qualitative assessment methodology); Final RADT Report at 21-23 (same). NAPgA commented extensively on the Shoshone NF's qualitative assessment methodology. *See* NAPgA Comments 14-23. These comments included:

- The Risk Assessment and Viability Analysis Outlined by the Shoshone NF in the RADT Report Is Not Applicable to Domestic Goats and is Misrepresented by the Shoshone NF. NAPgA Comments 14.

- The Shoshone NF Has the Necessary Data and the Issue of Disease Transmission is Sufficiently Complex on the Forest to Warrant a Quantitative Bighorn Sheep Viability Analysis. NAPgA Comments 15.

- The Shoshone NF's Sequence of Events by Which Contact and Disease Transmission Between Bighorn Sheep and Packgoats Might Occur Is Incomplete and Uninformed. NAPgA Comments 17.

- The Shoshone NF Should Use Actual Data on Forays by Bighorn Sheep on the Forest. NAPgA Comments 21.

- The Shoshone NF's Assumptions that Contact Between Bighorn Sheep and Packgoats Would Occur on the Forest Have No Basis in Science or Reality. NAPgA Comments 23.

- The Shoshone NF Has the Modeling Tools and Science Available Concerning Disease Transmission to Better Determine the Probability of Contact, Disease Transmission and Subsequent Mortality Events on the Forest. NAPgA Comments 33.

It does not appear that the Shoshone NF responded to or addressed any of these comments.

To start, in the "Methods" section on page 21 of the Final RADT Report, the Shoshone NF indicates that the Deputy Chief of the Forest Service outlined "an approach to risk assessment and viability analysis (USDA Forest Service 2011)." The risk assessment and viability analysis, however, were designed and issued for domestic "sheep," *not* domestic "goats," so it is unclear how the assessment and analysis apply to domestic goats. The Shoshone NF was asked to explain how the risk assessment and viability analysis apply to domestic goats, rather than domestic sheep, and provide justification for use of the assessment and analysis in the Final RADT Report, but the Shoshone NF failed to do so.

Rather than adhering to the risk assessment and viability analysis proposed by the Deputy Chief in 2011, the Shoshone NF modifies the analysis and misrepresents the steps of the analysis in the Final RADT Report. *See* RADT Report at 21. For example, Step 2 reads: "[a]ssess spatial and temporal overlap of bighorn sheep core herd home ranges with *domestic sheep*

allotments, use areas, and driveways." USDA Forest Service (2011) (emphasis added). The step only applies to domestic "sheep." *Id.* Yet, the Shoshone NF indicates in the Final RADT Report that Step 2 states: "[a]ssess spatial and temporal overlap of bighorn sheep core herd home ranges with *domestic livestock* allotments, use areas, and driveways." Final RADT Report at 21 (emphasis added). That is *not* the Step 2 provided by the Deputy Chief.

Likewise, Step 4 provided by the Deputy Chief reads: "[i]dentify management practices with the goal of separation between *domestic and bighorn sheep* where necessary to provide for Forest-wide bighorn sheep viability." USDA Forest Service (2011) (emphasis added). Again, comparison of this statement to what is provided by the Shoshone NF shows that the Shoshone NF has changed Step 4. *See* Final RADT Report at 21 ("Identify management practices with the goal of separation between *domestic livestock* and bighorn sheep where necessary to provide for Forestwide bighorn sheep viability." (emphasis added).). Contrary to what is provided by the Deputy Chief, the Shoshone NF attempts to make Step 4 applicable to domestic "livestock," including domestic goats, even though the step was designed and issued *only* to apply to domestic "sheep."

As a result of these misrepresentations, NAPgA requested that the Shoshone NF "disclose to the public that it has manipulated and misrepresented the risk assessment and viability analysis proposed by the Deputy Chief, and indicate that the analysis only applies to domestic 'sheep,' not domestic 'goats.'" NAPgA Comments 14. NAPgA added, "[t]o the extent that the assessment and analysis are applied to domestic goats, justification for doing so should be provided." *Id.* Rather than providing these disclosures and justification, the Shoshone NF simply added in the Final RADT Report that "[a] subsequent letter (USDA Forest Service 2012b) expanded the approach to include domestic goat grazing, and we believe using this approach is generally applicable to evaluating risk from pack goats as well." Final RADT Report at 21. Curiously, the "subsequent letter" (USDA Forest Service 2012b) says nothing about "expand[ing] the approach to include domestic goat grazing." The statement provided by the Shoshone NF is not true. There is no justification for applying the risk assessment and viability analysis proposed by the Deputy Chief to domestic goats, either in that "subsequent letter" or in any other part of the Shoshone NF's Final RADT Report or FSEIS. There is no justification for expanding the approach to not only domestic goats, but also to pack goats, which are not subject to "domestic livestock allotments" and which are not on the Forest for "grazing."

The Shoshone NF must explain its justification for taking a risk assessment and viability analysis intended only for domestic sheep and applying it to not just domestic goats, but also to pack goats on the Forest. While domestic sheep may have been shown to pose a risk of disease transmission to bighorn sheep, the same is not true for domestic goats, and certainly not true for pack goats. As a result, the assumptions underlying the analysis recommended by the Deputy Chief are inapplicable, or at least in question, on the Shoshone NF. Application of the analysis to a different species that is not constricted to allotments; that is not a likely carrier of *M. ovi*; that is only found moving on the Shoshone NF for a very limited amount of time; that is kept in the presence of a human; that can be tethered and high-lined to restrict movement; that has never been shown to transmit disease to, or come into contact with, a bighorn sheep; etc., obviously increases the complexity of the issue on the Shoshone NF and begs for more than just a simple, uninformed and unexplained qualitative assessment. The issue is sufficiently complex to require the Shoshone NF to apply a quantitative analysis taking into account the factors listed above. If

such analysis is not applied, the Shoshone NF should explain in detail the reasons such analysis will not be applied.

Further, although Step 3 of the Deputy Chief's recommended analysis is not applicable to domestic goats, the Shoshone NF attempts to apply the step to domestic goat use on the Shoshone NF on page 22 of the Final RADT Report. The Shoshone NF provides a sequence of events that must take place for disease transmission to occur between domestic goats and bighorn sheep on the Shoshone NF. *See* Final RADT Report at 22. The sequence of events that is provided excludes several important events required for disease transmission to occur that should be included by the Shoshone NF.

First, after coming into physical contact with a pack goat in a pack goat use area, in order for disease transmission to occur, the pack goat must actually being carrying and shedding disease. The best available science indicates that it is highly unlikely that a particular pack goat would be carrying and shedding disease. Second, the bighorn sheep that comes into contact with the pack goat must be susceptible to the disease. The best available science shows that bighorn sheep that come into contact with domestic goats are unlikely to contract disease leading to pneumonia and death. Moreover, some bighorn sheep have developed immunity to disease and are therefore not at risk, or at less risk of contracting disease. Further, particularly with respect to the Whiskey Mountain Herd, the bighorn sheep already carry *M. ovi* and are surviving despite infection. These steps need to be considered by the Shoshone NF in the sequence of events that must take place for disease transmission to occur between packgoats and bighorn sheep on the Shoshone NF.

Finally, with regard to the Shoshone NF's "Rationale for Risk Rankings" in the Final RADT Report, it is unclear how the Shoshone NF developed the risk rankings. *See* Final RADT Report at 23. There is no scientific basis provided for the "high," "moderate" and "low" risk rankings, nor is there any explanation of why areas within 17 km, 18 – 35 km and beyond 35 km have different risk rankings. Although the Shoshone NF states, "the Bighorn Sheep Risk of Contact Tool was not used for this analysis (USDA Forest Service 2013)," it appears that the Bighorn Sheep Risk of Contact Tool was indeed used. The Draft RADT Report provided, "[b]ecause information on foray distances and probabilities are also lacking for bighorn sheep herds on the SNF, the analysis in this Risk Assessment uses the default value for maximum foray distances from the Risk of Contact Tool," which estimates that bighorn sheep foray out to 35 kilometers (21 miles) away from their home range. *See* Draft RADT Report at 23 (citing USDA Forest Service (2013)). Thus, it appears that the Shoshone NF has used the Bighorn Sheep Risk of Contact Tool, at least to estimate foray distances and develop the risk rankings in the Final RADT Report. The reasoning for continued use of the Risk of Contact Tool must be explained in the Final RADT Report.

With regard to foray distances, the Shoshone NF has extensive data on the bighorn sheep herds on the Shoshone NF, so it is unclear why such data is not used for the Final RADT Report? *See*, *e.g.*, Final RADT Report at 18-19 (discussing extensive data on the Whiskey Mountain Herd and indicating that the herd's movements are quite limited). Rather than using a "default value" for foray distances, which has not been demonstrated to be applicable on the Shoshone NF, the Shoshone NF should use actual data on foray distances collected from bighorn sheep on the Shoshone NF.

Further, the Shoshone NF provides no basis for using the maximum foray distance of 35 kilometers from the Risk of Contact Tool. How is that foray distance relevant on the Shoshone NF? The Shoshone NF should use actual data on foray distances from bighorn sheep on the Shoshone NF or otherwise explain how and why "default" foray distances are relevant to the situation on the Shoshone NF as well as explain why the Shoshone NF cannot use the abundance of data available concerning bighorn sheep on the Shoshone NF, particularly for the Whiskey Mountain Herd.

Conclusion and Recommendation: The Shoshone NF has failed to justify its use of a qualitative risk assessment in the Final RADT Report. It is unclear how such an assessment, designed for and intended to be used for domestic sheep on allotments, is applicable to evaluating risk of disease transmission from pack goats to bighorn sheep on the Shoshone NF. Such justification and explanation must be provided in the Final RADT Report and FSEIS. Following such justification and explanation, whatever type of risk assessment is applied must consider the best available science indicating that pack goats are unlikely carriers of *M. ovi* and that the unique characteristics of pack goat use on the Shoshone NF severely limit the possibility of contact between pack goats and bighorn sheep on the Forest. Finally, the Shoshone NF must disclose its use of the Bighorn Sheep Risk of Contact Tool in developing the risk rankings in the Final RADT Report or otherwise update the risk rankings based on actual foray data from the Shoshone NF that is more applicable to the bighorn sheep on the Forest.