THE WILDLIFE SOCIETY

South Dakota Chapter

September 14, 2020

South Dakota Department of Game, Fish and Parks, Attn: Travis Runia
895 3rd Street SW
Huron, SD 57384

Subject: Comments on the Update of the South Dakota Sage Grouse Management Plan

Dear Mr. Runia:

Thank you for this opportunity to engage and provide input on the update of the South Dakota Sage-Grouse Management Plan. Members of the South Dakota Chapter of The Wildlife Society (SDTWS) recognize the vulnerability of our remaining greater sage-grouse populations in the State and their global and state rankings as a Species of Greatest Conservation Need in our State Wildlife Action Plan (SDGFP 2014). SDTWS has members that have worked on sage-grouse and sagebrush habitats in South Dakota and other western states. Some of our committee members worked with sage-grouse and sagebrush habitat in Fall River County and remember the rapid extirpation of the species from southwestern South Dakota during the 1990s, an event that appeared to coincide with the arrival of West Nile Virus.

Some of our members participated in the recent sage-grouse zoom meeting and were encouraged to hear of so many cooperators and partners focusing on sustaining our remaining sage-grouse populations and sagebrush habitat in northwest South Dakota, primarily Butte and Harding counties. The leadership provided by the South Dakota Department of Game, Fish and Parks in providing the management framework in the sage-grouse management plan is critical, and we commend the Department and all the cooperators, especially the landowners and land management agencies, for their participation in this important matter. Thank you for considering the following comments from our SDTWS Public Lands and Conservation Review Committees:

Comment #1 – New Information

Several recent scientific publications that we believe are highly relevant were not mentioned or discussed during the recent zoom meeting. Although it is likely that SDGFP staff are already aware of all or some of these publications, we are including these references as possible sources of new and additional information.

Wind and solar energy projects in western South Dakota will likely increase on both private and public lands. Mineral and mining, especially for bentonite clay, eliminates sagebrush plant communities and reclamation may take decades, if ever, to be re-established. Scientific references pertaining to impacts of energy and mineral developments, including infrastructure such as roads and power lines, on sage-grouse and sagebrush habitat should be incorporated into the revised sage-grouse plan. The following scientific publication includes new information on the response of sage-grouse to energy development in multiple study areas located across Wyoming, including northeastern Wyoming. While we acknowledge that energy development activities in northwest South Dakota are not as extensive as that occurring in adjoining states, we remain concerned about future developments and associated impacts. The following information would be useful in providing updated guidelines for minimizing disturbance to sage-grouse and additional fragmentation of sagebrush habitat in South Dakota through strategies such as siting, noise abatement, lek buffers, and timing:

> Kirol, C.P., K.T. Smith, N.E. Graf, J.B. Dinkins, C.W. LeBeau, T.L. Maechtle, A.L. Sutphin, and J.L. Beck. 2020. Greater sage-grouse response to the physical footprint of energy development. Journal of Wildlife Management 85(5):989-1001.

Another recent publication that deals with the impact of energy development on an isolated and peripheral sage-grouse population is:

> Walker, B.L., M.A. Neubaum, S.R. Goforth, and M.M. Flenner. 2019. Quantifying habitat loss and modification from recent expansion of energy infrastructure on an isolated, peripheral greater sage-grouse population. Journal of Environmental Management 255 (2020) 109819. 15pp.
> https://doi.org/10.1016/jenvman.2019.109819

The following extension publication addresses the location of energy and mining development in relation to undisturbed sagebrush steppe habitat in northwestern South Dakota:

> Bauman, P., B. Carlson, T. Butler, and B. Richardson. 2018. Quantifying undisturbed (native) lands in Northwestern South Dakota: 2013. Open PRAIRIE at South Dakota State University Extension, Natural Resource Management Department. 59pp.
> https://openprairie.sdstate.edu/data_land-northwestsd/1

SDTWS also requests that SDGFP review the "Oil and Gas Development – Synthesis of Research Results" section in the Northeast Wyoming Sage-Grouse Management Plan beginning on page 16 and the oil and gas energy discussion beginning on page 78 of that document (Wyoming Game and Fish Department 2014). The North Dakota Sage-Grouse Management Plan (North Dakota Game and Fish Department 2014), beginning on page 33, also provides similar information plus a review of recent research conducted on sage-grouse and energy development in western North Dakota. We contend that this type of information is relevant to South Dakota and would help provide additional scientific basis for new appendix material or additional guidance in Strategies 1.1 and 1.2 of the South Dakota plan. Links to those documents follow:

Northeast Wyoming Sage-Grouse Conservation Plan and Addendum (2104)
https://wgfd.wyo.gov/WGFD/media/content/PDF/Habitat/Sage%20Grouse/SG_NE_CONSERVPLAN.pdf

Management Plan and Conservation Strategies for Greater Sage-Grouse in North Dakota (2014)
https://gf.nd.gov/sites/default/files/publications/nd-sage-grouse-plan-2014_0.pdf

The following publications provide additional information and guidance on protocols for inventorying, assessing and monitoring sage-grouse habitat at both fine and broad scales:

Parsons, L.A., J.A. Jenks, and A.J. Gregory. 2020. Accuracy assessment of National Land Cover Database shrubland products on the sagebrush steppe fringe. Rangeland Ecology and Management 73(2):309-312.
https://doi.org/10.1016/j.rama.2019.12.002

Stiver, S. J., E. T. Rinkes, D. E. Naugle, P. D. Makela, D. A. Nance, and J. W. Karl, Editors. 2015. Sage grouse habitat assessment framework: a multiscale assessment tool. Technical Reference 6710-1. Bureau of Land Management and Western Association of Fish and Wildlife Agencies, Denver, Colorado.
https://www.fs.usda.gov/sites/default/files/sage-grouse-habitat-assessment-framework.pdf

The following publication builds on the information presented by Swanson (2009) and discusses the need to identify critical winter habitat in northwestern South Dakota:

Swanson, C.C., M.A. Rumble, T.W. Grovenburg, N.W. Kaczor, R.W. Kleaver, K.M. Herman-Brunson, J.J. Jenks, and K.C. Jensen. 2013. Greater sage-grouse winter habitat use on the eastern edge of their range. Journal of Wildlife Management 77(3):486-494.

The Western Association of Fish and Wildlife Agencies recently posted a white paper on sage-grouse hunting:
https://www.wafwa.org/Documents%20and%20Settings/37/Site%20Documents/Initiatives/Sage%20Brush%20Initiatives/Hunting%20white%20paper%20WAFWA%20V1.1.pdf

Much of the new information in the references listed above builds on the excellent background discussions presented by Flake et al. (2010) on sage-grouse populations, habitat and their management in South Dakota.

Comment #2 - Distribution Map

We suggest that SDGFP consider extending the sage-grouse and sagebrush habitat map(s) in the updated plan into northeastern Wyoming, southeastern Montana and southwestern North Dakota. We believe this will highlight the importance of connectivity habitat and also put the South Dakota sage-grouse populations and habitat in context to the broader landscape. Federal agencies, such as Custer Gallatin National Forest, are incorporating and addressing the importance of connectivity habitat in their land and resource management plans. While SDGFP

does not have jurisdiction in other states, portraying the actual boundaries of bird occupancy and primary/core habitats demonstrates the need for working groups in the northern Great Plains to work together to conserve sage-grouse and their habitat. This need is also reinforced and discussed in the following research report where radio-marked sage-grouse captured in core habitat in Montana commonly moved to and from adjoining habitat in Wyoming and South Dakota:

> Foster, M.A., J.T. Ensign, W.N. Davis, and D.C. Tribby. 2014. Great sage-grouse in the Southeast Montana Sage-Grouse Core Area. Unpublished Report by Montana Fish, Wildlife and Parks and USDI Bureau of Land Management. 108pp.

Comment #3 – Herbaceous Structure and the 7-inch Rule

Much of the discussion during the recent zoom meeting dealt with the 7-inch guideline for height of perennial grass cover within sagebrush communities. The following extension bulletin from Utah provides a good discussion on how this guideline from Connelly et al. (2000) has been misinterpreted and misapplied:

> Dahlgren, D. and E. Thacker. 2019. Livestock grazing and sage-grouse: science, policy, and the 7-inch rule. Utah State University Extension Publication NR/Wildlife/2019-03pr. https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=2978&context=extension_curall

One of the issues with the 7-inch guideline was a bias in the supporting data due to a common study-design flaw in several research studies. Another issue is that the 7-inch guideline has frequently been applied across the western states without consideration of local site potential and ecological site productivity. The following paragraph from the above extension bulletin does an excellent job of discussing both of these issues:

> *"The bottom line is that the 7-inch grass height rule has been debunked, and now adjustments must be made to align federal and state grazing regulations and policies with the best available science. So, does that mean grass height doesn't matter? No! Grasses still provide cover for sage-grouse and are a critical component of sagebrush communities. Some positive relationships in certain areas may still exist between grass height and nest survival. However, grass height objectives should be based on site potential and tailored to local habitat conditions. It is important to note that within the Connelly et al. (2000) guidelines the authors state that local habitat conditions may vary and should be taken into consideration if local information is available."*

Much of the debate of the 7-inch guideline also resulted from research findings based on the relationship between grass height and nest success (Smith et al. 2017). It should not have been a surprise that nest success is sometimes not related to grass height and density. Several studies have shown the same for prairie grouse, both sharp-tailed grouse and greater prairie chicken. However, the possible importance of the herbaceous component in sagebrush plant communities in helping influence sage-grouse nest density, in addition to nest success, should not be discounted. Multiple studies have demonstrated that grassland structure is important in determining nest density for prairie grouse and other upland nesting birds. Therefore, we suggest maintaining a utilization guideline, whether it is a residual stubble height for specific ecological sites and plant communities, percent-utilization value, or recommended grazing intensity (light,

conservative, moderate or high; Holechek et al. 1998 and 1999). We also suggest a similar guideline for riparian and wetland habitats that are so critical for providing key insect-foraging areas for young broods. We also suggest a focus on residual herbaceous cover at time of nest-site selection since it may be an important factor influencing nest density, as well as brood survival, especially during drought when current-year vegetative growth and cover are limited or substantially delayed. We contend that the herbaceous component in our sagebrush habitat is especially important to our sage-grouse during extreme and prolonged drought, which is not uncommon on the northern Great Plains. The importance of both grass and sagebrush cover to nesting sage-grouse in the eastern edge of their range in western North Dakota is discussed in the following publication:

> Herman-Brunson, K.M., K.C. Jensen, N.W. Kaczor, C.C. Swanson, M.A. Rumble, and R.W. Klaver. 2009. Nesting ecology of greater sage-grouse *Centrocercus urophasianus* at the eastern edge of their historic distribution. Wildlife Biology 15:237-246.

A recent scientific publication discounted the importance of fine-scale management strategies (nest-site vegetation metrics) for sustaining sage-grouse populations (Smith et al. 2017). We contend that both fine and broad-scale management strategies are important in northwest South Dakota where sage-grouse habitat is along its eastern fringe and characterized as grasslands with some sagebrush. SDTWS recommends that until future research in the eastern portion of the sage-grouse distribution proves otherwise, fine-scale management guidelines including nest-site vegetation metrics be included in the future updated plan. The current conservation practices (CP 390, 528, 643, 645, and others) approved by the Natural Resources Conservation Service as part of their Sage Grouse Initiative provide for management at both scales. The South Dakota State Wildlife Action Plan also discusses the value and importance of both coarse and fine-scale management for South Dakota's Species of Greatest Conservation Need.

In support of maintaining a science-based guideline for management of the herbaceous-structure component in sagebrush habitat, we are not minimizing the importance of range management based on traditional range health standards. SDTWS encourages management guidelines for private and public rangelands that are based on sound principles of range ecology.

Comment #4 – Rangeland Heterogeneity Strategy

We suggest that SDGFP consider listing rangeland heterogeneity management (Toombs et al. 2010, Fuhlendorf et al. 2017) in the updated plan as an optional habitat enhancement practice. This option involves maintaining lightly-grazed areas in pastures by limiting additional cross-fencing or water development. This option to enhance vegetation structure could be limited to strategically located nesting habitat or key wintering areas. A variant of this option listed in the Northeast Wyoming Sage-Grouse Plan (Wyoming Game and Fish Department 2014) is referred to as a low-grazing utilization incentive. We acknowledge that this option would not be appropriate for maintaining short-vegetation structure on and immediately around leks.

In summary, SDTWS recognizes the important role of the South Dakota Sage-Grouse Plan in providing a scientific basis and support for the current NRCS conservation practices that are being successfully implemented on cooperating ranches at both fine and broad-scales. SDTWS also supports guidelines in the updated plan that provide the scientific basis for management of

sage-grouse and sagebrush habitat on lands administered by the Bureau of Land Management, Forest Service and South Dakota School and Public Lands. The tenuous state of our low-elevation (West Nile Virus threat), smaller and isolated sage-grouse populations warrants a comprehensive management approach across landownerships and at multiple scales. SDTWS also supports adaptive management that incorporates a high-level of monitoring feedback as part of a comprehensive sage-grouse management approach. In this manner, any future changes in management guidelines for sage-grouse and their habitat in the South Dakota plan or on-the-ground can be based on reliable information and science.

We hope we've assisted SDGFP identify some of the best science currently available and relevant to managing sage-grouse and their habitat in South Dakota. As discussed in the South Dakota State Wildlife Action Plan, science-based management of the sagebrush ecosystem will enhance habitat for sage-grouse and a broad diversity of wildlife and plant species. Thank you for considering our input, and please keep us on your mailing list for this important project. Members of the SDTWS Public Lands and Conservation Review Committees helped review and draft our comment letter, and I can be contacted for additional clarifications, questions or updates on this important matter.

Sincerely,

/gls/

Greg Schenbeck
SDTWS Public Lands Committee
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Other Literature Cited

Connelly, J. W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. Wildlife Society Bulletin 28:967-985.

Flake, L.D., J.W. Connelly, T.R. Kirschenmann, and A.J. Lindbloom. 2010. Grouse of plains and mountains: the South Dakota story. South Dakota Department of Game, Fish and Parks, Pierre. 246 pp.

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Holechek, J.L., H.Gomes, F. Molinar, and D. Galt. 1998. Grazing intensity: critique and approach. Rangelands 20(5):15-18.

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Smith, J.T., J.D. Tack, L.I. Berkeley, M. Szczypinski, and D.E. Naugle. 2017. Effects of rotational grazing on nesting greater sage-grouse. Journal of Wildlife Management 82(1):103-112.

South Dakota Department of Game, Fish and Parks. 2014. South Dakota Wildlife Action Plan. Report 2014-03. Pierre.

Swanson, C.C. 2009. Ecology of greater sage-grouse in the Dakotas. Ph.D. Dissertation, South Dakota State University, Brookings.

Toombs, T.P., J.D. Derner, D.J. Augustine, B. Krueger, and S. Gallagher. 2010. Managing for biodiversity and livestock. Rangelands 32(2):10-15.