

Lawrence County Natural Resource Committee Meeting Notes

2/27/23

Attendees (members): Bill Coburn, Bruce Outka, Paul Pierson, Commissioner Richard Sleep, Senator Randy Deibert, Don Hausle, Mitch Iverson, Sherry Smith, Mike Whalen, Ron Moeller.

Guests: Matt Daley, Black Hills National Forest (BHNf Nat. Resource Staff).

The meeting started with introductions. New committee members Ron Moeller and Sherry Smith introduced themselves and shared their interests and background. Current members also provided their background and shared their interests.

LiDAR

The main focus of the meeting involved a presentation and discussion about the Light Detection and Ranging (LiDAR) analysis work that was completed for Lawrence County by NW Management Inc. Paul Pierson provided the presentation.

Paul explained that Lawrence County had contracted with NW Management Inc. to analyze existing Natural Resource Conservation Service (NRCS) LiDAR data in two sample locations. These sample areas are described as Areas of Interest. One 20,000 acre area of interest was selected in an area south of Deadwood and one 20,000 acre area of interest was selected south of Custer. The purpose of the effort was to determine what type of vegetation information could be derived from basic LiDAR information and to see how it compared to USFS Stand Inventory data (forest veg. data) and what is known of conditions on ground from field work. Some of the attributes that they measured were overstory canopy density, total canopy density, tree heights and stand basal area.

Paul stated that stand boundaries from USFS were used to delineate individual stand boundaries. He passed out a printed report from NW Management Inc. titled Black Hills QAQC Summary and Stand Based Averages dated 2/6/23. This summary discusses the collection effort and displays maps and graphs showing the Areas of Interest, canopy cover, tree segmentation, pulse density information etc. NW Management developed a grid pattern of 1 acre tiles to help breakdown the site specific site data.

Paul summarized the results by explaining that we learned that low precision NRCS data cannot capture the full scope of what LiDAR can provide. This was expected because the data collection points were not sufficiently dense, but we wanted to know more about canopy density. For this study, canopy density was not reliable enough for tree diameter and stand density. Tree height data was determined to be reliable. Regardless, there are still some interesting results. Paul displayed maps that showed some of these findings. There are differences in some areas with how LiDAR identifies highly dense stands compared to USFS veg data. Near Brownsville USFS stand structure (canopy closure) identified as highly dense C stands (red polygons) were not identified as highly dense stands by LiDAR. Conversely, many areas not shown as highly dense by USFS data were identified as highly dense by LiDAR (yellow polygons). Paul showed other areas where the orange polygons displayed locations where both USFS and LiDAR data agreed according to LiDAR. Paul and Matt Daley explained that USFS veg layer data is not always up to date. In some cases, it can be 20 years old and in other cases is current or only a few

years old. Matt said there are over 40,000 stands throughout the BHNF making it impossible to keep all data current.

Paul displayed a graph that showed the two LiDAR compared to forest veg. data.

This table read as:

<u>Structural Stage</u>	<u>LiDAR Acres</u>	<u>USFS Veg. Data</u>
C (Highly Dense)	10,198	6,147
B (mod. Dense)	10,786	7,879
A (Least Dense)	8,593	12,082
1&2 (Open)	277	2,781

These data show that there is a significant difference between LiDAR results and USFS data. Matt stated that the time lag between LiDAR data collection and on-going timber harvest may have impacted results in some areas. Bill Coburn showed some LiDAR results and then compared it to aerial imagery in an area on the Sawyer property near Brownsville. In this case, the Sawyer plot data stand canopy percent measurements produced by NW Management understated what actual stand conditions were.

Paul brought up the potential to increase density of data collection points from 8 to 16 points per meter to improve results. Randy Deibert clarified that this does not mean the increase in data quality would be double, it is more of an exponential increase. Randy also explained some differences in the type of equipment used for LiDAR collection and some of the more technical aspects about how data is collected.

Mitch Iverson brought up that the benefits of this type of analysis extend well beyond timber harvest and fuels management. He brought up some wildlife habitat management benefits such as understanding the amount of thermal cover for big game and the amount of edge cover between different vegetation cover types. Bill Coburn mentioned that LiDAR has the ability to measure Forest Biomass which could be used to estimate CO2 potential.

Ron Moeller asked how much time it takes to analyze data. Bill said roughly 3 months. Matt Daley added that with experience, this period could be shortened. Bill discussed some technical aspects of the LiDAR technology and how different parameters can be adjusted based on experience and comparison with on the ground conditions and how Artificial Intelligence (AI) learning is used to improve the results. This was followed by a group discussion which was generally in favor of using this approach even though current results are mixed.

Some group discussion occurred about encouraging BHNF to increase use of LiDAR more intensely. Matt explained that the BHNF does use LiDAR to some degree at the present time and other National Forests are using it. Paul and Bill summarized this effort with NW Management Inc. by explaining that this type of technology is likely to improve our understanding of forest conditions in ways that on the ground inventory alone could not. There were no opposing views or concerns raised about use of LiDAR by committee members, just questions about what could be obtained with more precision information.

Forest Plan Revision

Randy said Senate Bill 21 has just passed the senate. Bruce Outka passed out a summary of the bill. Randy explained that this bill would provide \$450,000 to fund a full-time forester from the State to work on the new Forest Plan revision. Another \$500,000 is in the bill to provide a one for match to the counties to allow for the counties participation in the planning process. This money will be a grant managed by the SD Dept. of Ag and Natural Resources.

Bill briefly explained that the BBNF Forest plan was being revised and discussed the work done so far. He also discussed Mitch's position as a planning consultant for the SD Black Hills Counties and his role in the Forest Revision planning process. Mitch added that there is a similar consultant position for the Black Hills Counties in Wyoming to address their needs. A key role is coordinating between the various counties and other stakeholders and providing advice to the counties about the Forest Plan Revision planning process. Mitch's role as a Lawrence County Nat. Res. Committee member is a separate role in a volunteer status (non-paid).

Chimera Project.

The Northern Hills Ranger District has completed environmental impacts and is going to issue a draft environmental assessment (EA) soon. This is a forest/fuels project on 54,000 acres. The resource committee will be meeting on March 10th at 3 PM to discuss the counties response to the EA. Bill said there are some concerns that the County needs to discuss. Matt wanted to know if the District Ranger should be present. After some discussion the committee said they would invite him. If he is able to come, the committee would like a brief summary of the project for the new committee members.

Other topics: Matt Daley from the BBNF, said that Jeff Tomac, the BBNF Forest Supervisor is on detail off the Forest. He added that Jeff will not be making decisions about the BBNF while on detail. Brian Krucht is the new acting Forest Supervisor.

Follow up items: Call Steve Kouzel, N. Hills District Ranger and invite him to March 10th meeting.

Notes taken by Mitch Iverson