

Black Hills forest management plan tries to strike balance

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SPEARFISH (AP) – The question isn't, "should commercial timber sales take place in the Black Hills," the question is, "how many commercial timber sales should take place in the Black Hills."

That is the crux of a conversation currently taking place among: forest officials from the National Forest Service, which regulates and manages the Black Hills National Forest; the Black Hills National Forest Advisory Board, a 32-member committee made up of stakeholders with specific interest in the Black Hills; and the Black Hills Forest Resource Association, which advocates for the forest products industry.

"Our actions today don't just play out today, but they play out long term and you have to be able to think long term," said Ben Wudtke, executive director of the Black Hills Forest Resources Association.

This comes after the March 22 announcement that the Hill City sawmill would close this spring. It has operated for 33 years and employs 120 people and 12 contract crews.

To talk about long-term thinking moving forward, one must first go back to 2010. The management plan for the Black Hills National Forest had set an allowable sale quantity (ASQ) for timber sales in the forest at 181,000 centum cubic feet, or CCF, (100 cubic feet = 1 CCF); however, due to the mountain pine beetle epidemic that was taking place, the actual number of CCFs sold was consistently higher than that over the past decade.

"We worked hard with industry and private land owners and state departments of forestry to try to thin ahead of the mountain pine beetle," explained Scott Jacobson, public affairs officer for the Black Hills National Forest. "Because the stands were so densely thick, the bugs were just kind of spreading and going everywhere so we started thinning aggressively and we were cutting a lot more timber out just to get ahead of the beetle to save the forest."

The total volume of timber sales sold averaged well above 200,000 CCF during that time. That deliberate over harvesting came to an abrupt halt after 2017 when the mountain pine beetle epidemic was declared officially over with total sales dropping to 125,416 CCF in 2020. That rapid decline in timber sales was a major factor in Neiman Enterprises' difficult decision to close its Hill City sawmill. Neiman's has had to seek timber sales from as far away as Montana, Nebraska, and the Bighorn National Forest, near Buffalo and Sheridan, Wyoming, in order to meet production figures at its Hill City facility; an action that was never meant to be a long-term solution.

"That has largely been the result of a declining timber program (in the Black Hills)," said Marcus Neiman, vice president of Neiman Enterprises.

In the middle of all this, in 2014, at the peak of the pine beetle epidemic, the Black Hills National Forest and the Black Hills Forest resource Association, formed a taskforce to examine, among other things, the sustainability of timber harvesting in the Black Hills as a result of the pine beetle's devastating effect, the Black Hills Pioneer reported.

The epidemic lasted for a total of 20 years and impacted 448,000 acres to some extent. Much of that area was devastated, according to a 2016 forest health report.

Through years of re-evaluating and re-assessing methodologies and gathering new raw data, a more precise forest inventory analysis (FIA) was established. That analysis was used by forestry scientists at the Rocky Mountain Research Station to create a general technical report (GTR), which was submitted to the National Forest Service in February 2020.

In it, silviculturists Mike Battaglia, Theresa Jain, and the late Russell Graham concluded that the current rate of 181,000 CCF in timber sales would not be sustainable for the well-being of the forest. They recommend harvest levels between 72,400 and 90,500 CCF. Silviculturists study the science of planting and the development of forests.

During a presentation of findings, on April 7 by the scientists themselves, Jain surmised that rather than attempting to mitigate natural disturbances through human involvement like the over harvesting of the past decade, land managers should allow for such disturbances in their forest management plans.

"For example, the Black Hills has experienced mountain pine beetle epidemics periodically somewhere on the forest approximately every 20 years. Beetles are a part of this ecosystem and will continue to be a part of this forest," Jain said.

Jain also pointed to climate change as a factor to consider.

"Since 2000 South Dakota's annual average temperature has increased by 2 degrees F," Jain said. "Projections suggest that by mid 21st century, mean annual temperatures will exceed those of the past 100 years. If we get increased temperatures, evapotranspiration (the process by which water escapes for the soil into the atmosphere through plants) from the trees will also increase potentially drying the soil and favoring drought conditions."

Jain said cold temperatures kill mountain pine beetle larvae, so warmer winters could have less of an impact on infestations and lengthen fire seasons.

The conclusion drawn from the silviculturists in the GTR is that in order to keep the Black Hills well-stocked with healthy trees, forest managers should plan for catastrophic natural events such as insect infestation and wildfires by keeping more trees on stand-by and greatly reducing the amount of trees harvested.

Timber industry experts say managing the forest through harvesting could help lessen the impact of those events to begin with.

"That's why you have two different disciplines; that's why you have a research station and management. What our forest managers are going to have to balance is just that," Neiman said. "I understand the researchers' argument from the standpoint of, 'you can't tell me not to factor it when it happened.' But for a manager ... to intentionally plan to have fires and intentionally plan on allowing pine beetle outbreaks is mismanagement."

Neiman was adamant that work done by the FIA team and the researchers who assembled the GTR represented solid science and that historic data should absolutely be factored into the Forest Service's management plan moving forward; however, he objected to the conclusion of the report based on the parameters set by the GTR.

"A comprehensive management plan does not look at the Black Hills National Forest through such a narrow scope as the GTR was asked to do by past leadership of the Black Hills National Forest," he said.

Neiman explained that the Black Hills National Forest has always used timber sales as a method of managing the forest dating back to Case No. 1 in 1899, the very first federal timber sale ever sold in the entire United States. He stipulates that while the sustainability needs of the forest change, adjustments in industry must follow suit, but the sustainability of the industry – has to count for something as well. As allowable timber sales dwindle, sawmills will have to close and the industry will disappear from the forest all together, and the Forest Service will lose a major management tool.

Jeff Tomac, forest supervisor for the Black Hills National Forest, echoed that sentiment.

"We need industry and sustainable industry on the Black Hills National Forest in order to manage the Black Hills," Tomac said. "My overall goal would be that we find a balance between economics and sustainability of timber on the Black Hills National Forest."

Evidence of how detrimental it can be to not maintain that balance, even for a short time, can be found by looking at the historic data compiled in the GTR itself.

"At the beginning of the 21st century, standing live ponderosa pine volume was at its highest levels in recorded time," the report states. "These high volumes provided forested stand and landscape conditions that were classified at moderate to high hazard for MPB (mountain pine beetle) and wildfire. In addition, results from long-term and recent studies across the BBNF showed that current high stand densities were susceptible to MPB and needed to be lowered across the landscape. During this same time period, the BBNF started to experience an MPB epidemic and several large mixed severity wildfires.

"Within the wildfire perimeters, areas with low stand densities burned less severely. This local information combined with the incorporation of reducing surface fuel loads, increasing height to live crown, decreasing crown density, and maintaining large fire-resistant trees provided additional science-based guidance for forest management that would help reduce MPB and wildfire hazard," the report said.

Neiman offered some context for those findings based on what was going on in the industry at the same time.

"There was an injunction that literally froze management on the forest for a year. So 2000 was the Y2K event, we managed the forest for a century and then stopped. No one told the trees. All of our catastrophic fires have been in the last 20 years," he said. "Without a deliberate management plan (the forest) is going to repeat the cycle of fire and bug."

Upon reviewing the GTR, the Black Hills Forest Research Association commissioned its own report extrapolated from the data in the government's FIA. In July 2020, the association's report was submitted to the Black Hills National Forest Advisory Board, citing several discrepancies with the initial GTR including an inaccurate amount of acreage of suitable timberland estimated and conflicting growth/mortality rates. Based on the findings of that report, the advisory board recommended no change in the ASQ to the National Forest.

"Numerous issues, concerns, and uncertainties were uncovered during the course of the analysis which, taken together, cast doubt on the accuracy of the reported inventory results," the association's report read.

Both reports rely heavily on two main factors to derive their conclusions – live standing volume on suitable timberland base, as well as the growth and mortality rates for saw timber trees (trees that are eligible for harvesting).

The Black Hills National Forest is made up of approximately 1.2 million acres. The GTR estimated 765,733 acres of suitable timberland, while the BHFA report claims that number should be 865,890 based on the Black Hills National Forest Plan Phase II Amendment from 2006.

Charles Perry, soil scientist for the FIA research team, explained the reason the area of suitable timberland looked at by the GTR was so much smaller than the forest plan's estimation was because the GTR was only looking at suitable ponderosa pine timberland. Ponderosa pines make up the vast majority of trees used in the local timber industry.

"The challenge is that when our crews went out and walked the ground, not all of the land that's labeled suitable base, is ponderosa pine timberland," Perry explained. "That's why when you do estimates of area against the suitable base you differentiate between just trying to estimate suitable base and then trying to estimate how much area is actually ponderosa pine timberland."

Perry said the FIA team was given a geographical information system (GIS) measurement of suitable base in the Black Hills National Forest of around 837,000 acres, which was already less than the estimation mentioned in the original forest plan.

"That's the conundrum, is that between the fires and other activities, the amount of ground actually growing ponderosa pine right now has changed from the original map of suitable base," Perry said.

The GTR also estimates forest growth rates at 2.5% based on snapshot statistics taken from 1962, 1984, 1999, 2011, and 2019. The association's report came up with a growth estimate of 3.14% basing it's information on past FIA data collected each year from 2016 through 2019.

During the pine beetle epidemic, mortality rates were far greater than in more recent years. Additionally, because the Forest Service was using the timber industry to remove not only living trees to thin the forest, but also dead trees that had already been infected by the bugs, the metrics used to estimate harvest numbers were skewed as well during that time.

"Every log that came off the forest, we ran it across the scale and measured it and tallied it in essence. What we didn't tally is how many of those logs that came across the scale had already been hit by bugs," Neiman said.

Neiman explained that once a ponderosa pine tree dies, whether it be from being harvested, or disease, or devoured by bugs, it only has a merchantable shelf life measured in months, not years, like with other species of tree. So not every log pulled off of the forest is usable for industry, but every log pulled off the forest, by forest product professionals, is counted in the harvesting numbers.

Both reports conclude that as the forest continues to grow mitigating events will need to take place to maintain it at a desired level.

"Disturbances are critical because they are part of the growth and development of these forests. ... They also provide growing space for the trees that are left, and they also provide opportunities for other types of vegetation to establish and grow. Human activity such as prescribed fire and harvesting also play a similar role as natural disturbances as they are important particularly since we cannot allow for fires to burn as they did in the past because people live throughout the Black Hills," Jain said.

“When you break it all down we have a choice – we can let mountain pine beetles and wildfires run their course, which have both immediate and very long-term implications ... or we can choose to mimic mother nature and do that through a science-based process and harvest trees,” Wudtke added.

The Black Hills National Forest Service has currently set a goal of 175,000 CCF in timber sales by the end of the 2021 fiscal year in September, while working to create a new long-term forest management plan. As it does, officials will need to consider both reports and recommendations for all stakeholders to determine the best course for preserving the Black Hills forest as well as balancing what’s best for the people who live, work, and play in this unique and ever-changing landscape.

“The information in the GTR (is) going to be used to help inform forest management decisions and forest planning efforts, as well as other information, the National Forest Advisory Board made a recommendation ... we’re going to look at that information as we move forward with forest planning and management of the Black Hills,” Tomac said. “I think it’s a balance. I don’t know that we can always be reactive so the goal of looking at the GTR information and moving to forest planning on the Black Hills National Forest is an attempt to be proactive... to set ourselves up for success on the management of the Black Hills.”

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