

# EVERGREEN

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Fall 2020



**Black Hills Green**

**Case No.1 Revisited**

# IN THIS ISSUE

In this special *Evergreen* report, we explore the deep green forests of the Black Hills of South Dakota and Wyoming. We last reported from “the Hills” 20 years ago in a photo essay titled “[Case No. 1 turns 100](#).”<sup>1</sup>

In that report, we compared historic photographs of the Black Hills taken during the Custer Expedition in 1874 to recent photos taken from the same locations. It’s challenging because many of the photo points from 1874 have been obscured by ponderosa pines 70-120 feet tall!

New photos document the fact that the Black Hills of 1874 looked nothing like the Black Hills we see today. The Hills are much greener now than they were then because there are many more trees. All after 120 years of steady timber harvesting and numerous mountain pine beetle epidemics.

You can be forgiven for wondering how this could be. The answer begins with Gifford Pinchot’s very measured and quite detailed approach to Case No. 1.

Case No. 1 was the first timber sale the federal government ever sold. Pinchot, who was then Chief of the federal Division of Forestry, designed and supervised the 1899 sale after first persuading the Homestake Mining Company to apply for a harvesting permit authorized under the provisions of the 1897 Organic Act.

The significance of what I saw in the Black Hills 20 years ago is far more apparent to me today than it was in 1999. I attribute my greater understanding to the fact that I’ve read several books about the history of development in the Black Hills and, more broadly, my *Evergreen*-related research and writing pursuits.

Something marvelous has happened in the Black Hills National Forest that provides both an object lesson and a hopeful pathway forward for millions of Americans who live in and around the West’s great National Forests – the lesson being that good forestry is good for the land and the communities it supports; the hopeful pathway being the example set by citizen groups that have worked with their elected officials to shape forest policies and regulations that aid U.S. Forest Service decision making.

Developing and administering forest policies that reflect the nation’s ever shifting “felt necessities” has never been easy. When westward migration began, there were few rules governing what occurred on so-called “public domain lands.” People took what they wanted and needed – including untold amounts of federal timber for which they paid nothing.

Congress’ early attempts at developing an orderly process for disposing of public domain lands met with mixed and limited success. The 1862 Homestead Act, the 1870 Timber and Stone Act and the 1873 Timber Culture Act were all variations of the same theme: encourage settlers and dream-chasers to invest their time, talent and treasure in western development. Until the early 1890s, the process was anything but orderly.

Although Congress has found ways to control and limit human activity, its’ attempts to control nature have been less successful. Insects, diseases, wildfires, floods, drought, wind and erosion are exacting their own increasingly alarming tolls on the West’s forests and rangelands.

For eons, nature’s major tool for disrupting the status quo in the Black Hills has been the mountain pine beetle – a bark beetle species about the size of a grain of rice that lives in forests in western North America.

Although always present, pine beetle populations periodically reach epidemic levels – generally when forest density makes ponderosa more susceptible to beetle attack, mortality and inevitable wildfire.

The most recent pine beetle epidemic in the Black Hills led to the formation of two citizen coalitions that came together to lead an “all hands on deck” effort to rescue their forest – and they do see the Black Hills National Forest as theirs – from one of the worst mountain pine beetle epidemics in the region’s history. In doing so, they forged partnerships with the U.S. Forest Service unlike any I’ve seen in the 34 years that I have been publishing *Evergreen Magazine*.

We write about this citizen-led marvel in this issue. We also explore the three underlying elements of this story: the 1891 [Forest Reserve Act](#)<sup>2</sup>, the 1897 [Organic Act](#)<sup>3</sup> and the remarkably prescriptive forest management approach laid out in Case No. 1 in 1899 by Gifford Pinchot, a one-man tour de force many regard as one of America’s greatest conservationists.

The 1891 Forest Reserve Act, largely written by South Dakota Senator Richard Pettigrew, authorized the creation of forest reserves carved from public domain lands from which early settlers harvested needed timber. Unfortunately, the Act did not contain provisions for management or



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timber harvest. The outcry in opposition was immediate and long-lasting.

President Cleveland's 1897 designation of 13 forest reserves across the West, including the Black Hills Forest Reserve, led to further widespread opposition. A little more than four months later, a chastened Congress ratified what we now call the Organic Act, again written largely by Senator Pettigrew. It authorized use and management of the forest reserves - including timber harvest - and gave Pinchot the opening he needed to justify meeting with Homestake Mining Company executives.

You might wonder - as we did - why Pinchot picked the Black Hills Forest Reserve for the first federal timber sale. Perhaps the following text from a March 27, 1897 letter to Pinchot from Sir Dietrich Brandis, a German botanist who mentored Gifford Pinchot at the French National School of Forestry, will be helpful:

"Of all the Reserves set apart by Cleveland's proclamation, the Black Hills Forest in Dakota and Wyoming seems to be the most suitable to make a beginning of regular management," Brandis wrote. "Would it not be possible to get a scheme passed for the administration of these 968,000 acres as a beginning? I am strongly in favor of steady progress from small beginnings."

In a follow up note to Pinchot on July 8, Brandis observed that "Apparently there is a certain demand for the mining and agricultural population in the vicinity. The forest therefore may be profitably worked at once."

One hundred and twenty-two years later, the Black Hills National Forest is

still being "profitably worked," and thank goodness that it is so, for without such profit, the U.S. Forest Service would have to pay contractors to thin dying trees from overly dense forests in which mountain pine beetles thrive and killing wildfires are inevitable.

And because the Black Hills National Forest can be "profitably worked" year after year, the Forest Service annually pockets several million dollars from the sale of timber to local forest products manufacturers who, in turn, employ about 1,400 Black Hills residents in lumber, panel and pellet manufacturing operations with an annual wholesale value of \$260 million.

It is this symbiotic relationship, first envisioned by Brandis and Pinchot and their early conservationist cohorts, that has been key to keeping the Black Hills green since Case No. 1 was sold to the Homestake Mining Company in 1899.

It is a tribute to Pinchot's charisma - actually his chutzpah - and his political connections that Homestake agreed to buy Case No. 1 for \$14,967.32. In hindsight, the company had no choice. The era of free timber was over and Homestake needed mine timbers for the long haul.

With the sale of Case No. 1, Pinchot had his prize: the opportunity to demonstrate that the well-ordered principles of professional forestry he had embraced while studying in France and Austria were key to sustaining economic necessity without plundering the Black Hills.

There is no underestimating the historic, scientific and political significance of Case No. 1. In one masterful stroke, Pinchot drew the curtain down on

a long period of unregulated harvest punctuated by disastrous beetle epidemics. His plan launched a remarkable recovery in beleaguered Black Hills forests, setting the stage for the main event that unfolds in this special *Evergreen* report: the herculean citizen-led effort to rescue the Hills from the ravages of a mountain pine beetle infestation first spotted in the Beaver Park Roadless Area south of Sturgis in 1997.

Had the two quite diverse collaborative groups we feature not come together - and had the states of South Dakota and Wyoming and the impacted counties not joined them in the fray - it seems likely that much more of the Black Hills National Forest would have been ravaged by beetles. Had this happened, the annual impacts on the region's thriving timber and tourism sectors could have run well into the hundreds of millions of dollars.

Rural Americans living in or near other western national forests haven't been as lucky. The loss of essential wood processing infrastructure and entrepreneurship, direct results of the slow-motion, politically-driven collapse of the federal timber sale program, can be measured in lives lost and dollars spent in devastating insect-fueled wildfires. We explore all this in Black Hills Green.

Onward we go,

*Jim Petersen,*

Founder and President  
The Evergreen Foundation

**Cover photo:** Evergreen's Julia Petersen took our cover photo of South Dakota's Castle Creek Valley in July 2018. She stood atop the same rock outcropping that William Illingworth climbed for his iconic picture of 372 Custer Expedition wagons descending the valley on July 26, 1874. The journey is beautifully chronicled in *Exploring with Custer: the 1874 Black Hills Expedition*, by Ernest Grafe and Paul Horsted. The valley lays about 14 miles northwest of Hill City, South Dakota.



Julia Petersen, our Managing Director, is our primary photographer and sometime writer. She has a curiosity for beauty in unlikely places. See more of her photos in our website version of "Black Hills Green."<sup>4</sup> You will find hundreds of beautiful Black Hills photographs and links to more information about the human and natural history of this beautiful island of trees.



Halle is one of the many women who work in mills in the Black Hills. Read more about her and other gals who know how to roll up their sleeves - in Julia Petersen's ongoing "Women's Work"<sup>5</sup> series of vignettes featuring women who work alongside their male counterparts in Black Hills sawmills and the forest industry at large.



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Tom Troxel, Ben Wudtke and Jim Petersen, atop the rock outcropping where William Illingworth took his historic picture of the Custer expedition's foray into the Castle Creek Valley in July 1874. There weren't many trees in the valley then, so matching Illingworth's photographs with today's settings is challenging. Troxel is the retired executive director of the Intermountain Forest Association and Wudtke is the present executive director.

# BLACK HILLS GREEN Case No. 1 Revisited

The Lakota Sioux moved into the Black Hills of South Dakota and Wyoming around 1750, some 25 years before the Declaration of Independence was signed. They called the 7,700 square mile expanse “Paha Sapa,” meaning “The hills that are black,” a reference to their foreboding darkness when viewed from the Great Plains that surround them.

Yet the closer you get to them, the greener they look.

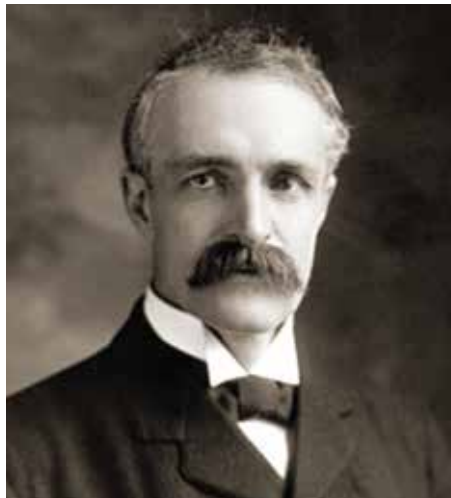
East, across the Great Plains, the forests closest to the Black Hills are the mixed conifer and hardwood forests of Minnesota and Missouri. But these South Dakota stands are almost pure ponderosa pine. You have to go west to find look-alikes near Lame Deer and Ashland, Montana.

The 1.25 million-acre Black Hills National Forest<sup>6</sup> is located in seven counties; two, Crook and Weston in Wyoming, and five in South Dakota – Pennington, Custer, Lawrence, Fall River and Meade. There are a few scattered clumps of ponderosa outside the South Dakota portion of the Black Hills, but the rest of the state is mostly prairie and farmland.

A convergence of factors – including sunlight, moisture, soil type and frequent cone crops – are major reasons why ponderosa pine thrives in the Black Hills. But the most important factor – by far – in modern history has been the very positive impact of hands-on forest management.

For convenience sake – convenience being an easily followed paper trail – let us stipulate that modern forest history begins with Case No. 1, the first federal timber sale in history, sold to the Homestake Mining Company in December of 1899. I know of no other national forest that can point to one timber sale and say, “This is where and how it all started.” Every national forest had a first timber sale somewhere in time, but there is only one Case No. 1.

There is also only one first photographic record of what the Black Hills looked like before white settlement began. It was assembled in 1874 by William Illingworth, a commercial photographer from St. Paul, Minnesota, who was hired by the federal government to make a photographic record of the movements of General George Armstrong Custer’s Black Hills



Gifford Pinchot, first chief of the U.S. Forest Service, negotiated and designed Case No. 1, the federal government’s first timber sale, sold to the Homestake Mining Company in 1899, six years before the Forest Service was formed. Pinchot selected the 5,100-acre site in the present-day Black Hills National Forest after personally inspecting the area and developing specific logging guidelines that mirrored his forestry training in France.

expedition. The expedition is memorialized on 59 four-and-one-half by eight-inch glass plate negatives that reveal what the expedition’s entourage saw in the Black Hills.

There are earlier photographic collections of the old West – like John Carbutt’s 1866 photos of the Union Pacific’s run across the Great Plains. But Illingworth’s Black Hills series functions as the beginning point for photographers who have attempted to replicate his work over the last 50 years.

I have twice attempted to retake Illingworth’s photo taken from clifftops overlooking the Castle Creek Valley, but it can’t be duplicated because towering ponderosas block the view.

Of all the [replications](#)<sup>7</sup>, the two finest are *Yellow Ore*, *Yellow Hair*, *Yellow Pine*, assembled in 1974 by Donald Progulske and Richard Sowell for the South Dakota State University Agricultural Experiment Station, and *Exploring with Custer: The 1874 Black Hills Expedition*, a beautiful coffee table book published in 2002 by Ernest Grafe and Paul Horsted.

What these two exceptionally well-documented books reveal is that the Black Hills seen by Custer’s expedition in 1874 look nothing like the Black Hills we see today. The Hills are much greener

now than they were then because there are many more trees. This after 120 years of steady timber harvesting, mountain pine beetle epidemics and forest fires.

You can be forgiven for wondering how this could be. The answer begins with Gifford Pinchot’s very measured and quite detailed approach to Case No. 1. He understood the political significance of the federal government’s first regulated timber sale. And he was undoubtedly familiar with the gloomy Black Hills word picture painted by Agriculture Department field agent Per Axel Rydberg in 1892:

“...large tracts are made bare by the ravages of lumbermen, mining companies, fire and cyclones. Only stumps, fallen logs and the under brush remained,” Rydberg wrote. He predicted that “it will be no wonder if in a short time the dark pine forest is gone and the name ‘Black Hills’ has become meaningless.”

Pinchot first traveled west in 1896 with an investigative team hand-picked by Wolcott Gibbs, a Harvard University chemist and president of the National Academy of Sciences. The team’s subsequent report to Congress included the following narrative concerning the Black Hills:

“It is evident that without Government protection, these forests of the Black Hills, so far as their productive capacity is concerned, will disappear at the end of a few years and...their destruction will entail serious injury and loss to the agricultural and mining population of western North and South Dakota.”

The team’s worrisome report was key to President Cleveland’s February 22, 1897 decision to designate 13 forest reserves in the West, including the 967,680-acre Black Hills Forest Reserve. President Cleveland’s authority was based on the 1891 Forest Reserve Act, which had been largely written by South Dakota Senator Richard Pettigrew, one of the state’s first two Senators.

Homestake opposed the Black Hills Forest Reserve, because their mining



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operation at Lead [pronounced “Lead”] consumed millions of board feet of free timber annually from the Black Hills forests. They were hardly alone. The aghast editor of the *Custer Weekly Chronicle* declared that the forest reserves “...may be safely regarded as one of the most vital blows at civilization, so far as the Black Hills is concerned, that has ever been perpetrated by the ruler of any nation in the history of modern or ancient times.”

The *Chronicle’s* editor was right about one thing. Timber was essential to the economic future of the Black Hills. However, the Forest Reserve Act contained no allowances for managing the Forest Reserves or cutting timber. Without timber, there would be no mines, no towns, no nothing.

One June 4, 1897, a little more than four months after the creation of the Black Hills Forest Reserve, Cleveland’s successor, William McKinley, signed the 1898 Sundry Civil Appropriations Act into law. The Appropriations bill included the Organic Act as an amendment from Senator Pettigrew and authorized the management and use of the forest reserves in an easily understood declaration of intent:

“No public forest reservation shall be established, except to improve and protect the forest within the reservation, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States.”

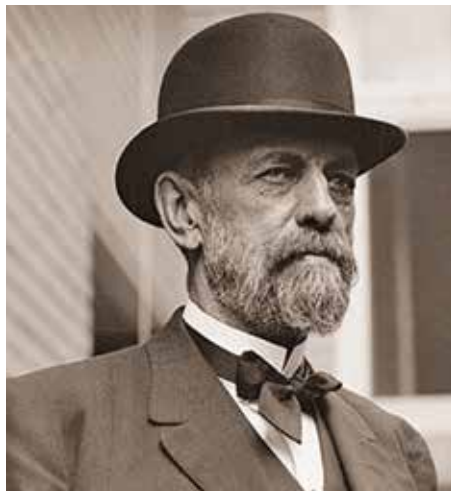
Further, the Organic Act authorized the Secretary of the Interior to make provisions for the protection of the forest reserves and to make rules and regulations to achieve the purposes of the forest reserves and to regulate their occupancy and use.

Pinchot made his case early on – “There is no other forest in the United States in which practical forestry is more urgently needed, or in which results of such importance may be more easily achieved. Upon its preservation depends the timber to supply a great and rapidly growing mining industry.”

With the Organic Act in place, Pinchot met with Homestake’s manager, Thomas Grier, and company attorney, Gideon Moody, in November of 1897, on the tail end of a two-week inspection tour. He was acting as the special envoy of Interior Secretary Cornelius Bliss, a

fact that spoke to his exceptional political connections in scientific circles.

Franklin Hough, first Chief of the Division of Forestry, Charles Sargent, Director of Harvard University’s Arnold Arboretum, George Bird Grinnell, a naturalist who had accompanied Custer’s 1874 Black Hills expedition, and Bernhard Fernow, the first professional forester in the United States, had all written extensively about the need for the federal government to designate forest reserves and regulate logging on public domain land. And Pinchot’s mentor, Sir Dietrich



Richard Pettigrew, South Dakota’s first U.S. Senator, was the architect of both the 1891 Forest Reserve Act and the 1897 Organic Act, which were instrumental in opening the West’s federal Forest Reserves to active management. The Black Hills Reserve, now the Black Hills National Forest, was one of 13 reserves authorized by President Grover Cleveland in 1897.

Brandis, had developed a workable system for conservation and use in India’s teak forests.

But with all due respect to Pinchot’s political cache, it seems likely that Superintendent Grier had read the tea leaves well in advance of their three-hour meeting. Three hours isn’t much time in which to close the books on the era of free government timber – a 19-year period in which town-builders and miners cut millions of board feet of free public domain timber under the aegis of the 1878 Free Timber Act.

Given the enormity of the day, Grier had undoubtedly counseled with George Hearst, Homestake’s principal owner and a familiar face on Wall Street after the company listed its stock in 1879. They needed timber for the Lead mine and the only way to legally get it was to apply for the permit to harvest Case No. 1.

But Pinchot needed Homestake’s backing as much as they needed his. Getting Grier and Moody to sign on to the tenets of forest conservation advanced by Brandis, Fernow, Hough and others would not be easy. Pinchot’s assurance that government regulation would be based on use and good science proved to be the tipping point.

Grier submitted Homestake’s application to Interior Secretary Bliss in April 1898. It described the size, location and number of trees to be cut in eight sections along the company’s railroad tracks about four miles southwest of Nemo. The company paid \$1 per thousand board feet – a board foot being a board one-foot by one-foot by one inch thick – for nearly 14 million board feet of live trees, plus \$.25 per cord for 5,100 cords of topwood and large limbs, and \$.50 per thousand board feet for 1.5 million board feet of dead trees, for a total of \$14,967.32 – chump change in George Hearst’s world but a monumental first step in the management of the nation’s forest reserves.

Pinchot’s Case No. 1 rules were necessarily straightforward:

- Trees less than eight inches in diameter were to be left to grow.
- Two large seed trees per acre were also to be left to naturally reseed logged areas.
- Logging slash was to be piled for burning.
- Trees larger than eight inches in diameter had to be used as timber or lumber and could not be cut into less valuable cord wood.

Case No. 1 put Europe’s long years of experience with regulated forestry on trial on American soil for the first time. Logging commenced a few days before Christmas 1899. Over the next eight years, rugged men armed only with crosscut saws, axes and wedges cut timber from about 2,000 acres scattered across a 5,100-acre expanse.

Pinchot’s forestry training and his conservationist instincts would prove correct. By 1924, ponderosa pine standing volume on the Case No. 1 site had increased from 482 board feet per acre to 2,611 board feet per acre, a five-fold increase.

In 1968, the Forest Service commemorated the harvest of the two-billionth board foot since Case No. 1. Its factual representation was a 203-year-old seed tree that had grown eight inches in

diameter since 1899 and held 400 board feet of timber, a four-fold increase over the average-sized Case No. 1 tree. The 1968 harvest was the fourth cutting activity in the area since 1899.

“With harvest of the two-billionth board foot, the Black Hills will have produced as much or more wood than there was estimated to have been standing when logging started in 1899,” a *Rapid City Journal* reporter wrote following the 1968 ceremony. “Case No. 1 is more than history. The old sale area has been a proving ground for forest management. Here the basic precepts of careful logging were first laid out.”

The success of active forest management didn’t stop in 1968 with two billion board feet harvested from the Black Hills NF. Over the next few decades, the trend of an increasing amount of standing timber while harvesting was a recurrent theme in the Black Hills.

By 1997, there had been more than five billion board feet harvested from the Black Hills NF with more than five billion board feet of standing live timber remaining in the Forest – a significant change from the natural conditions photographed in 1874 that didn’t come without consequences.

Case No. 1 and William Illingworth’s 1874 photographs provide starting points that are rare in western national forests. Black Hills residents can turn to these visual and quantifiable benchmarks as often as they see fit to reassure themselves that the best way to protect their forests is to keep following Pinchot’s lead.

But Pinchot was not infallible. While his Case No. 1 harvesting plan met with the approval of his conservationist friends in New York City, he – and they – greatly underestimated the killing power of the mountain pine beetle. The first documented beetle sightings came in 1897 near the Wyoming border, but nothing was known about them, so nothing was done.

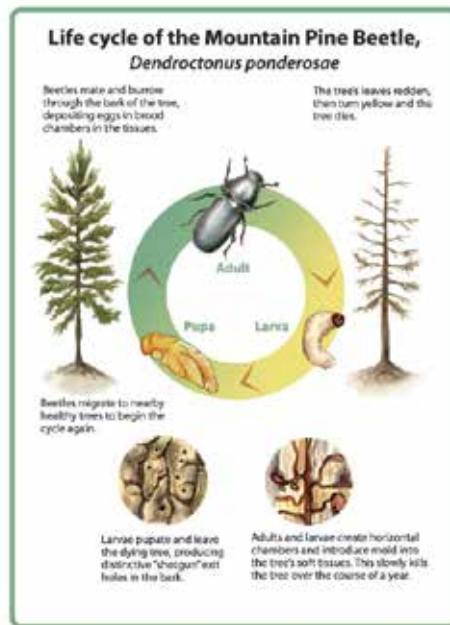
Reports of widespread beetle damage first reached Pinchot after Bernhard Fernow resigned from the Division of Forestry in 1898 and Pinchot was named its fourth Chief. In 1901, he hired young Andrew Hopkins, a self-taught West Virginia entomologist, to investigate the situation.

Hopkins, Pinchot and his field assistant, E.M. Griffith, traveled to the Black Hills in September 1901. In four days, they rode from Spearfish via Iron Creek and Bear Gulch, South Dakota, to Rifle Pit and

Cement Ridge in Wyoming, then back to Little Spearfish Creek and Lead.

What the trio saw looked nothing like the lush green forests Black Hills visitors see today. Between 1874 and 1897, miners and homesteaders walked off with 1.5 billion board feet of timber. Beetles claimed another one billion feet between 1897 and 1908. By today’s standard, the country was harsh and uninviting.

What Pinchot saw in his mind’s eye is hard for most of us to envision but, in hindsight, the Black Hills was the perfect



The murderous life cycle of the Mountain Pine Beetle, copyright Sean Twiddy, Bughaus Productions, Atlanta, Georgia. Twiddy, an illustrator and graphic artist, earned his undergraduate degree in Scientific Illustration from the University of Georgia and a master’s in Illustration from the Savannah College of Art and Design in Atlanta.

place to test the veracity of forestry principles long in vogue in Europe, but never tried on such a large scale in the United States.

Andrew Hopkins collected 4,363 beetle specimens, described how they attacked trees, including the gallery-like tunnels they leave beneath the bark and even speculated about using trap trees to control beetle damage – a method used today. He named the beetle *Dendroctonus ponderosae* – roughly translated as “the pine-destroying beetle” of the Black Hills.<sup>8</sup>

Hopkins also developed beetle control recommendations for the Forest Service, including cutting and utilizing at least 75% of the trees that had been attacked before July of the following year.

Hopkins would later describe the 1898-1906 beetle epidemic as destroying a large percentage of timber over nearly one-half of the Black Hills NF and killing over 90% of the timber over wide stretches of the Forest. He estimated that, in total, over 1 billion board feet of timber had been killed. He was right.

In a 1910 report to Forest Assistant John Murdoch, Hopkins commented “There is no trace of doubt in my mind that if my recommendation in 1901 and 1902 had been promptly adopted and carried out, there would have been no further loss of timber from the work of the beetles ... The Forest Service should certainly profit by this expensive experience.”

Scientists have been studying mountain pine beetles ever since Hopkins’ report was published in 1902.<sup>9</sup> From decades of research, these are key findings about mountain pine beetles in the Black Hills:

- Mountain pine beetle epidemics are highly dependent on dense forests of trees greater than eight inches in diameter.
- Mountain pine beetle epidemics return at 20-30 year intervals, and gradually disappear 10-15 years later.
- Trees are less vulnerable when they are widely spaced.
- Air turbulence in more open stands disrupts pheromone flow – pheromones being the primary attractants female and male beetles emit to invite other beetles to join in the feast.
- Left unchecked, mountain pine beetle epidemics can kill millions of acres of ponderosa pine.
- Forest thinning reduces the scale and intensity of beetle epidemics.

Mountain pine beetles are merciless and well-equipped killers. A virtual metropolis of organisms travels with them: mites, nematodes, fungi, yeasts, bacteria and other deadly organisms including blue stain spores that block water pathways in the tree’s sapwood layer. Aerial photographs taken over the last 15 years chronicle the beetle’s relentless march through once green forests.

Forest entomologists report that the quarter-inch long beetles organize their



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attacks primarily through smell. Once beneath the bark, adult beetles bore vertically, laying their eggs and spreading fungus spores as they go. These spores are the source of the blue stain we see in some pine boards. Then, when the eggs hatch, they transform themselves into tiny white grubs that bore through the tree's cambium layer laterally, cutting off the flow of all nutrients the tree needs to survive.

Reddish brown needles announce the inevitable result of the previous year's fatal invasion. Also inevitable is the potential for stand-replacing wildfires feeding on the accumulations of dead and down fuels in the wake of the beetles.

John Ball, a PhD entomologist at South Dakota State University, has been studying Black Hills beetles for years. He speaks with jarring clarity, and his message is much the same as that of other scientists who study the cause and effect relationships between forest density and beetle outbreaks.

"What we have in the Black Hills is a tree epidemic, not a beetle epidemic," he says. "It is a very unnatural condition caused by the presence of too many trees, a result of not allowing wildfires to burn. This was a stockman's paradise a century ago, about 50 percent trees and about 50 percent grassland. Much, much different than it looks now."

The predictably candid Ball believes there are only two ways to slow the advancing beetles. One is to forget the people component and let big wildfires take care of the beetles. The other is to continually thin the Black Hills NF so as to reduce the threats posed by beetles and wildfire. Black Hills residents have overwhelmingly and consistently chosen the latter strategy.

Unfortunately, the biggest ponderosas in the Black Hills – the ones everyone admires most – act as motherships for advancing beetles. In dense stands, the beetles move easily from tree to tree. Once relocated, they bore into the bark, leaving telltale whitish-rust masses of pitch that announce their presence. Their march continues until the epidemic subsides naturally or they run into ponderosas already thinned to a defensible density.

Evidence of the latest beetle attack was first spotted in the Beaver Park Roadless Area in 1997. It has subsided now, thanks to the herculean efforts of two public-private collaboratives. High resolution aerial photographs taken

between 2010 and 2017 revealed that several hundred thousand acres were hit by beetles with mortality ranging from a single tree to nearly 100 percent. Indeed, the attack appeared to be the worst since a late 1890s assault described by Henry Graves.

The nearby graph quantifies the number of trees killed by mountain pine beetles in the Black Hills and the changes in standing timber inventory in the Black Hills National Forest from 1894 to 2016. The graph's message is straightforward: beetles decimated the Black Hills before anyone understood the importance of thinning prolific ponderosa pine stands.

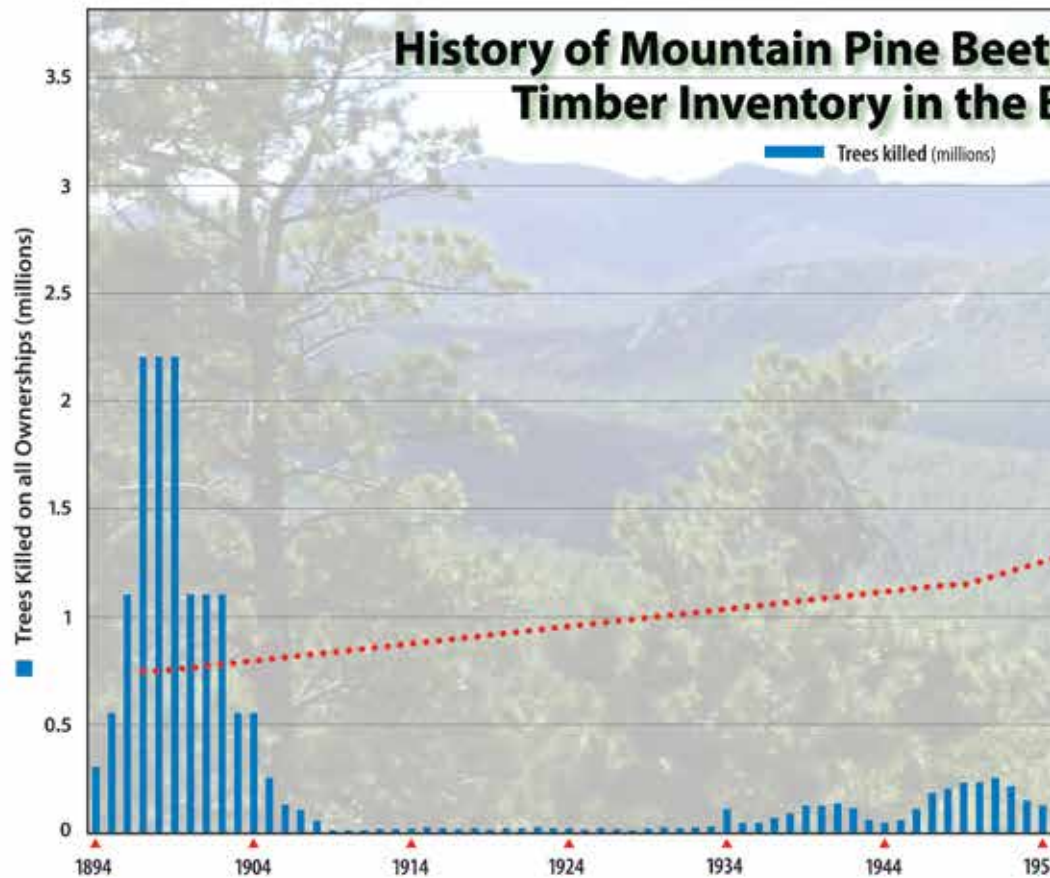
Newspaper accounts that span more than 120 years leave no doubt that thinning – active forest management – has reduced the size and duration of beetle attacks in the same way that thinning reduces the size, frequency and destructive power of wildfires. Data sets maintained by the Forest Service's research

stations and Forest Inventory and Analysis [FIA] program affirm the role thinning plays in promoting natural resiliency and growth in residual trees that reseed areas that have been thinned.

Re-read the last paragraph. Let its meaning sink in. Now you have some understanding of why it is that most who live in "the hills" see thinning as their best shot at conserving forests they love – keeping the Black Hills green and growing by reducing the wildfire risks associated with beetle epidemics.

The job – and the responsibility – is never-ending. The short-term impacts of this most recent beetle epidemic are already being evaluated by forest scientists and their state and local collaborators to determine "next steps" in the recovery process. There will always be pine beetles in the Black Hills, but if the goal is to stay ahead of them, when and where should thinning occur now? And how much?

In a 2018 report, FIA scientists



Mountain pine beetle mortality data compiled by Bill Coburn using data collected from the Black Hills Regional MPB Working Group. The data shows the number of acres killed by MPB that were not treated from 2009-2015 by Neiman Timber Company, South Dakota Division RC&F, W&S.

Timber Inventory Data compiled from: DeBlander, Larry T. 2002. Forest resources of the Black Hills National Forest. Ogden, Utah, Forest Service. 2006. 1997 Black Hills Land and Resource Management Plan: Phase II Amendment. USDA Forest Service, U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: <http://apps.fs.usda.gov/BlackHills/>]. Haugen, David E. 2013. Resources of the Black Hills National Forest 2011. Resource Bulletin NRS-83. Newtown Square, PA: U.S. Forest Service.



observed that, “Insect activity has subsided and mountain pine beetle returned to an endemic population in 2016. As inventory remeasurements continue, we expect to see an increase in the live-tree inventory in the future.” I have no doubt. Anecdotal history tells us this is what will happen *if* the necessary thinning and stand tending work is done.

No one should short-change the fact that the short-term impacts of the latest beetle attack would have been much worse had it not been for the thinning program the Forest Service has maintained in the Black Hills for decades.

Indeed, a Forest Service analysis of thinning and unthinned areas in the Black Hills reveals that unthinned areas lost more than 38 percent of their basal [tree] area while thinned areas lost less than four percent. The results are succinctly captured in one sentence:

“[Forest] stand density reductions

through silviculture across a large geographical area can abate MPB-caused tree mortality.”

The same instructive message is echoed in *Forests of South Dakota*, a 2015 Forest Service report:

“Active forest management continues to have a positive effect on the ponderosa pine resource in South Dakota.”

But ongoing research and analysis doesn’t tell the whole beetle story. To more accurately track events that have unfolded in the Black Hills since our 1999 visit, we assembled a timeline beginning in 1997 – the year the Forest Service released its revised forest plan for the Black Hills National Forest and, notably, the year beetles were first spotted near the Beaver Park Roadless Area.

The revised forest plan reduced the Forest’s annual harvest level by 40%. That decision was appealed by the Black Hills

Forest Resource Association and environmentalists – environmentalists because they felt the reduction was insufficient and the association because their members knew the reduction would impair wood processing infrastructure it viewed as key to containing pine beetle outbreaks.

The appeals languished for two years before U.S. Forest Service Chief Mike Dombeck decided there were some wildlife issues that had been overlooked, so he remanded the revised forest plan back for further analysis. His decision prompted additional litigation by environmentalists who felt they were playing a winning hand. The downstream result was that the Forest Service did not sell any Black Hills timber in the year 2000.

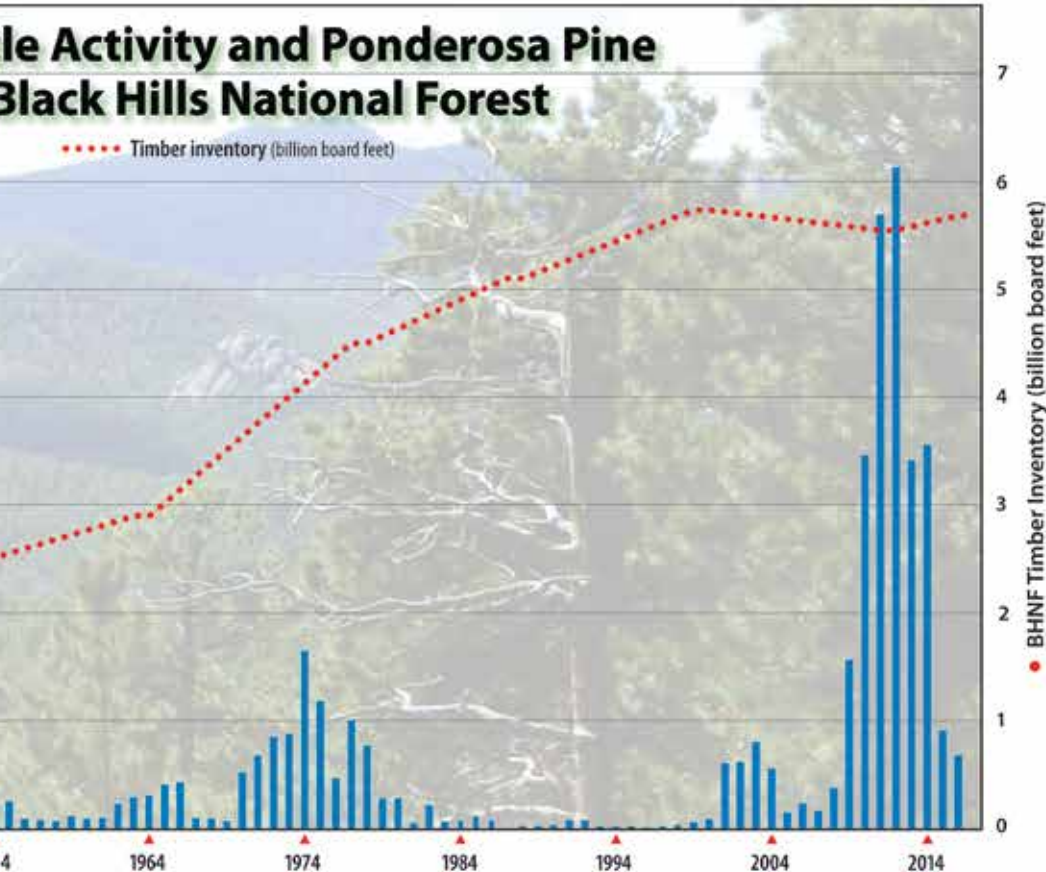
In August of that year, the Jasper Fire burned 83,500 acres around the Jewell Cave National Monument west of Custer. Though small compared to wildfires burning in the Southwest, it was huge by Black Hills standards – and it was only the first of several wildfires that scorched thousands of additional acres of the Black Hills between 2001 and 2005, setting off alarm bells all over South Dakota.

South Dakota Senator Tom Daschle, who was then Senate Majority Leader, stepped into the fray in August 2001, hosting a bi-partisan forest summit at Rapid City that drew more than 600 people including the entire South Dakota delegation, then-Forest Service Chief Dale Bosworth and then-Governor Bill Janklow. Among other things, Daschle encouraged the formation of a citizen council under the aegis of the 1972 Federal Advisory Committee Act [FACA] to help the Forest Service sort through its more contentious issues.

A settlement agreement was reached with environmentalists that allowed some timber sold under the 1997 forest plan to be harvested. But it was too late for Pope & Talbot’s mill at Newcastle. It closed July 7, 2000, throwing 75 people out of work. Abe Friesen, the company’s wood processing vice president, noted that the Black Hills NF had not offered any timber for sale since October 1, 1999.

Meantime, the mountain pine beetle outbreak was reaching epidemic levels in scattered areas of the Black Hills. In hopes of slowing the advancing beetles, Daschle added language to a supplemental 2002 Defense Appropriations Bill that allowed some specific projects to move forward on the Black Hills NF.

In the spring of 2003, Forest Super-



Working Group "Mountain Pine Beetle Accomplishment Summary 2012 -2017", MPB acreage digitization report summary of Wyoming State Forestry, and BHNH, plus trees per acre data derived from tallying dead trees from random samples of ... U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 13 p. U.S. Department of Agriculture, Forest Inventory and Analysis Program. Forest Inventory EVALIDator web-application Version 1.8.0.01. St. Paul, MN: ... Walters, Brian F. Woodall, Christopher W. Piva, Ronald J. Hatfield, Mark A. Domke, Grant M. ... U.S. Department of Agriculture, Forest Service, Northern Research Station. 36

visor John Twiss acted on Daschle's FACA suggestion, forwarding his request that an advisory board be formed to Forest Service Chief Dale Bosworth, who quickly approved the idea and the 16-member Black Hills National Forest Advisory Board was formed.

The federally constituted board was the first of two citizen groups formed in the Black Hills. The second group, which did not initially have a formal name, included some 50 "conservation leaders" who convened as a committee of the whole in 2010 in hopes of hammering out a coordinated approach for pushing back on advancing beetles.

In the course of our research, we interviewed three leaders from the groups: Forest Service retirees Hugh Thompson and David Thom, and Jim Sherrer, a Tree Farmer and retired CEO of an orthopedic clinic in Rapid City. Thompson represented the Crook County Wyoming county commissioners on the Black Hills National Forest Advisory Board for six years.

Thom, a Certified Forester, coordinated the work of the Black Hills Mountain Pine Beetle Working Group, a spin-off of the conservation leaders group formed in 2010.

Sherrer chaired the Black Hills Forest Advisory Board for several years. His Tree Farm, about three air miles from the

Crazy Horse Memorial, was directly in the path of advancing beetles.

"We inherited a real mess," he said of his decision to join the advisory board in 2003. "People on the political left and right were unhappy. Some groups favored allowing pine beetles and wildfires to run their course. Others wanted to harvest beetle-infested timber. Beetles were becoming more evident across the Black Hills, we were in the midst of a long drought and up to our eyeballs in litigation. It was a battle royal for sure."

Fuels reduction – especially removing as many beetle-killed trees as possible – quickly became the board's highest priority, but there were other nagging problems that required immediate attention, so the board divided itself into subcommittees: off-road vehicle travel management, invasive species and beetle response/forest health. Because Sherrer was a tree farmer, he was picked to head the beetle response/forest health subcommittee.

"I became the voice for private landowners," Sherrer said. "We have close to 300,000 acres of private land locked inside the Black Hills National Forest and some 475,000 acres if you count all the private ownerships in the Hills. Many landowners blamed the Forest Service for their beetle problems. I wasn't interested

in assigning blame. My interest was in solving the problem."

Two years before the advisory board was formed, Sherrer hired a logger to begin thinning forests on his property, the goal being to remove beetle infested trees so as to create sufficient defensible space in case of wildfire.

"We removed about 8,000 trees," he said. "Thank God for Neiman Enterprises. They bought our logs. Without them, we would not have had a market for most of the diseased trees removed from private lands or the Black Hills National Forest. Their presence was a real blessing."

Sherrer took advantage of a grant program funded by the South Dakota state legislature to turn his forest into a training ground for tree marking crews. "It was plain old common sense," Sherrer said. "No government study was needed to understand the scope of the problem or what needed to be done to resolve it."

"Common sense" got a big boost in December 2003, when President George W. Bush signed the bipartisan [Healthy Forests Restoration Act](#).<sup>10</sup> Senators Daschle and Johnson actively supported the measure in the U.S. Senate, which voted 99-0-1 in favor of passage. The lone abstention was that of Massachusetts Senator, John



10



Obegario "Rooster" Simental is one of dozens of logging contractors who work in the Black Hills. The region's predominantly ponderosa pine forests are so productive that thinning is a perpetual job. Most of the work is done by machines. Maps downloaded from satellites or uploaded from Forest Service harvest plans guide machine operators.



Terrain in much of the Black Hills is gentle enough to permit rubber-tired skidders to transport logs to sites where they are loaded on trucks destined for the area's sawmills. To minimize soil erosion, temporary roads are blanketed with tree limbs and branches that eventually decompose, enriching the soil in which seedlings will regenerate naturally.

Kerry, who declared that it “took a chainsaw to our national forests.” Kerry’s histrionics aside, the Act continues to serve as a model for forest restoration projects in diseased and dying western national forests.

Despite HFRA’s tight focus on hazardous fuels, woody biomass, watershed protection and insects and diseases, it would be another seven years before 50-some Black Hills conservation leaders issued an “all hands on deck” call for help and ideas – and another three years to hammer out an agreed upon approach to slowing reoccurring beetle epidemics and – more broadly – a set of strategic recommendations for managing the Black Hills National Forest.

The Conservation Leaders group drew representatives from city, county, state and federal governments, private timberland owners and the forest products industry. Some favored an aggressive harvesting strategy in beetle-killed timber, others favored a more measured approach. Meantime, aerial photographs revealed seas of red-orange trees scattered across the Black Hills.

“We were driven by our responses to natural events,” David Thom said of the diverse group’s eventual compromise. “Faced with the threat of more to come our hope was to develop a strategy for getting more work done on the ground by working together.”

In 2011, the Conservation Leaders endorsed a quite successful strategy developed in Alberta after pine beetles from British Columbia moved into the province’s forests. Its main tenet: Don’t chase beetles. You’ll never catch up to them. Try to get ahead of them by treating forested areas they are most likely to attack next. Prioritize your work based on spread and population growth. Cut infested trees and thin. Cut infested trees and thin. Cut infested trees and thin.

That same year – 2011 – Laramie, Wyoming’s Biodiversity Conservation Alliance sued in hopes of blocking implementation of the Black Hills NF’s Phase II Amendment. The amendment, which incorporated more aggressive

strategies for reducing the risks posed by both pine beetles and wildfire, had been completed in 2005.

The Black Hills National Forest caught a big break in 2012. The Federal District Court for Wyoming tossed the environmentalists’ 2011 lawsuit challenging the Forest Service’s Phase II plan amendment – a ruling subsequently upheld in 2014 by the Tenth Circuit Court of Appeals.

The Conservation Leaders issued



A sawyer at Neiman Enterprise’s Hill City, South Dakota mill squares a log before sawing it into lumber. Computer guided laser lights scan each log to determine how best to saw it, minimizing waste by maximizing the amount of lumber of varying dimensions that can be recovered from each log.

their first formal communique in 2012 – a draft report titled *Black Hills Regional Mountain Pine Beetle Strategy*.<sup>11</sup> It catalogued the largely unsuccessful 15-year effort to slow the beetle epidemic and called for a more localized and comprehensive approach to address “unique situations present in the Black Hills.” To drill more deeply into the situation, the Conservation Leaders formed the Mountain Pine Beetle Working Group to develop annual action plans and to coordinate implementation.

Hugh Thompson attests to the

patience and dedication necessary to find consensus among such diverse stakeholder opinions. During his six years on the Black Hills Forest Advisory Board he attended 66 public meetings, none of them close to his ranch in the rolling hills eight miles off Wyoming State Highway 24 west of Belle Fourche.

Counting preparation time, I’d guess about 600 hours,” Thompson said of his six years as an advisory commission member. “A lot of road miles, too.”

Although Thompson never worked in the Black Hills during his long Forest Service career, he quickly returned to his boyhood roots in Wyoming after he retired. “It’s home,” he said of the Black Hills.

“The Hills were a mess,” Thompson said of his decision to join the Advisory Board. “Pine beetles were everywhere and it looked to me like the Forest Service had turned inward and pretty much lost its way where active management was concerned.”

“I wanted to make sure the Black Hills did not lose its strong and viable wood processing structure” he explained. “Without loggers and sawmills, the thinning work that must be done continually in the Hills would not have been possible, much less affordable.”

At the same time, the entire South Dakota congressional delegation was now fully engaged with the Forest Service: letters, meetings with Chief Bosworth in Washington, D.C., field hearings, meetings with Bosworth in South Dakota, testimony before congressional natural resource committees and support for Forest

Service funding.

Locally, then-Governor Dennis Daugaard stepped up with his Black Hills Initiative. “Hundreds of businesses and thousands of employees in the logging, forest products and tourism industries depend on a healthy, well-managed forest for their livelihoods,” Daugaard said in August 2011. “The current beetle infestation threatens those business owners as well as their employees and families. It also threatens to damage the very nature and



character of the Black Hills.”

Daugaard thus pledged \$1 million a year for three years to an expanded effort to slow the beetle’s advance. He also committed South Dakota state government to a collaborative effort involving the Forest Service and private businesses in the Black Hills. “We will not wait for the fire to rage before mobilizing our response,” he said. “The mountain pine beetle epidemic is an emergency situation – a disaster we can see coming.”

In 2013, the Conservation Leaders adopted the *Black Hills Mountain Pine Beetle Working Group’s Black Hills Regional Mountain Pine Beetle Strategy*,<sup>12</sup> a five-year umbrella plan that addressed not just beetles but also invasive species, habitat diversity, healthy and productive forests, public safety and fire risk and hazard.

“The useful role fire can play in ponderosa pine ecosystems was well understood,” Thom said. “But it had to be balanced against the importance of protecting communities and local economies

from increasingly destructive wildfires.”

The balance point was reflected in two of the strategy’s four goals: maintain wood processing infrastructure and increase natural resiliency by reducing forest density to a point where it can fend off beetle epidemics. Minus private markets, the federal government could not afford the cost of removing beetle-infested trees from the Black Hills National Forest.

Citizen volunteer groups and advisory boards like those formed in the Black Hills are just that: volunteers and advisors. They have no authority over the decisions and actions of the U.S. Forest Service, which has functioned with great autonomy since its founding in 1905.

Not so with Cooperating Agency Status, a not well understood federal regulation imbedded in the 1969 National Environmental Policy Act [NEPA] and the 1976 Federal Lands Policy Management Act [FLPMA]. Cooperating Agency Status acknowledges and accepts the government-to-government relationship that exists between the federal govern-

ment and [state and local governments](#).<sup>13</sup> The federal obligation extends well beyond simply checking to see which way the political winds are blowing.

Notably, the states of South Dakota and Wyoming and several of their counties requested and were granted [Cooperating Agency Status](#)<sup>14</sup> during the Phase II Forest Plan Amendment process. “It was huge for the states and counties,” recalled Craig Bobzien, Black Hills Forest Supervisor from 2005 until his retirement in 2016. “The county commissioners really engaged at the grass roots level. We had to be strategic and tactical in the same stroke but it was very satisfying for me to watch people come together around a set of common ideas and goals. You’ve heard of the Civilian Conservation Corps – the 3 C’s. We had three new C’s working for us:



12



13



14



Gifford Pinchot’s instincts, training and discipline are on display for all to see in the Black Hills National Forest. This Case No. 1 setting is one of dozens that are easily reached by anyone interested in witnessing this forest’s remarkable tree growing capacity. In 1968, the Forest Service commemorated the harvest of the two-billionth board foot of timber to be removed since the first harvest began in 1899. By 1997, five billion feet had been removed and the forest still held five billion feet. Active management – perpetual thinning – has been the key to the stunning growth and productivity of the Black Hills National Forest.

collaboration, cooperation and coordination. You can't beat it."

Thom concurred with Bobzien's assessment of the significance of Cooperating Agency Status. "I sat in on many interdisciplinary team meetings and can confirm that the roles played by the governors, their resource management agencies, counties, municipalities and ordinary local citizens were significant."

The lead Cooperating Agency authority in South Dakota is the State Department of Agriculture and, specifically, State Forester Greg Josten. He is tasked with administering and enforcing state laws relevant to public and private forests and woodlands in the Mount Rushmore State.

"My job was to herd all of our cooperators including the counties and our conservation districts," Josten said. "It was four long years and I had to learn a great deal about the NEPA process and what the U.S. Forest Service goes through to comply with the laws and regulations governing their work."

Josten says the State is cemented to the Forest Service in every way possible. "The immediate risk is wildfire," he explains. "The longer-term risk is the mountain pine beetle, and the goal is to reduce the risks posed by fires and beetles by thinning ponderosa pines which reseed themselves naturally and grow quickly in our forests. The management goals are structural and age-class diversity – maintaining trees of varying ages randomly spaced across the landscape – not too thick and not too thin, and our strategy is to use timber sales and forest products companies as primary management tools."

Josten added that a primary driver in their management goals is the recognition that active forest management is critical to reducing the risks of wildfires and mountain pine beetles. "Although we've understood the importance of forest management for decades, it has been eye-opening to see the beetle march through areas of unthinned forest and stop at the boundary of a thinned forest."

Wyoming State Forester Bill Crapser

echoed Josten's comments. "The State of Wyoming and Weston and Crook Counties were Cooperating Agencies during completion of the amended Black Hills National Forest Plan. Our State Forestry Division took the lead for Wyoming, and their work was invaluable in our efforts to reaffirm the fact that beetle and wildfire control are primary management strategies in the Black Hills National Forest."

The man in charge of the "not too thick and not too thin" balancing act in the Black Hills NF was then-Forest Supervisor Mark Van Every. "It is a balancing act," he said, "of the pressing need to keep pine beetles in check by removing sufficient timber to slow their advance."

Beyond strong public support, Van Every agreed that he was blessed by the convergence of three economic and environmental factors:

- Ponderosa pine responds exceptionally well to periodic thinnings that yield park-like visual results that residents and tourists enjoy.



The 2005 Minnex Timber Sale – outlined in yellow – typifies commonplace forestry in the Black Hills National Forest. Note the beetle-killed trees outside the yellow outline. Thinning stopped approaching pine beetles from entering the site. Residual trees inside the yellow lines continue to grow and are more resilient to beetle attacks and wildfire than they were before the thinning. As seedlings grow beneath maturing trees, another thinning will be necessary in the future.

- Black Hills terrain is gentle enough to safely allow for modern logging equipment that registers fewer pounds per square inch than horses.
- The industry that resides in the Black Hills is heavily dependent on timber harvested from the Black Hills National Forest

“It also helps that ponderosa reseeds itself naturally,” Van Every added. “If you stand in one place long enough, a ponderosa seedling will grow up your pant leg.”

Not really, but the fact that ponderosa regenerates naturally and quickly is both a blessing and a curse. There are age gaps in the Black Hills: too many old trees with too many young trees growing beneath them and too few middle-aged trees. The imbalance necessitates working from both ends, creating space in which some young trees can grow old. The goal is to fill in the gaps before the next beetle infestation occurs 20 to 30 years from now.

While it isn't possible to completely eliminate the risks posed by wildfire, the Forest Service aggressively attacks the 100 or so fires that break out in the Hills annually. It helps that the region has a well-maintained road system and that loggers in the area have sufficient heavy equipment to corral most fires in their early stages.

“We work hard to minimize risk,” Van Every said. “Interagency cooperation between states, counties and private landowners is a big plus for us. When fires are spotted, we jump on them immediately. Fire is a great tool for clearing away woody debris and brush that can fuel bigger fires, but we are very careful about when and where we use it. I'd like to get back to the era when there were more frequent low intensity fires in the Black Hills, but that will take time and lots of public education. People don't like fire in their forests.”

It took a monumental “all hands on deck” effort to rescue the Black Hills National Forest from its worst mountain pine beetle epidemic in more than 120 years. At least three million infested trees were treated by direct control methods:

- Dead and infested trees with commercial value were removed from 187,050 acres and smaller trees on 87,430 acres were pre-commercially thinned so the healthy trees that remained could grow again.
- Non-commercial treatments were initiated on other acres defined by one of three criteria:
  - Acres were politically or physically inaccessible

- Trees still too small to be made into a wood product
- Trees still needed to be treated to keep beetles from flying

Appropriated funds from the states of South Dakota and Wyoming were used to pay crews to individually mark, then cut down insect-infested trees that could not be commercially harvested, and finally cut them into 24-inch lengths. As they dried in the sun, beetle larvae died.

The State of South Dakota also provided private landowners in the Black Hills with technical assistance at a per landowner cost-share capped at \$10,000 for treating green-infested trees in some areas. Wyoming did much the same thing.

County-level weed and pest boards in the Black Hills also swung into action. Crews were trained to work with their respective states and municipalities and to assist industry and Forest Service crews in identifying and mapping infested areas within active timber sale boundaries.

Some private landowners also hired contractors to apply federally registered insecticides that proved effective in warding off beetle attacks in individual, high-value trees. Others hired loggers to rescue their healthy trees by harvesting dead or infested trees.

The reality of all the success stories in the Black Hills is that none of this rescue work would have been possible had it not been for the presence of a vibrant logging and sawmilling industry – an entrepreneurial and creative culture well-equipped with log processing and wood manufacturing technologies capable of profitably handling trees that would have been considered worthless when the beetles struck in the 1970s. Such are the remarkable technological advances that drive logging and forest products manufacturing today.

The forest products companies in the Black Hills include about 50 logging contractors, numerous log truckers, sawmills at Spearfish, Hill City, Rockerville, Custer, and Pringle, SD and nearby Hulett, WY, pellet mills in Spearfish and Rapid City, treating plants and a wood bridge manufacturer in Whitewood, and, in Rapid City, a particleboard manufacturer and a remanufacturing plant that makes everything from fence posts to faux barnwood. Most of these companies are multi-generational, family businesses, which collectively employ more than 1,400 people with annual salaries and payments to contractors exceeding \$120 million.

These companies have a tremendous

positive benefit to forest management and to local communities throughout the Black Hills. As an example, the Neiman Enterprises sawmill in Hulett employs the equivalent of 25 percent of the town's population. Hill City has a population of roughly 1,000 people and the Neiman mill there employs about 150.

In the Rapid City area, more than 500 jobs are directly tied to forest products manufacturing. Regardless of their size, these manufacturers are 70-80 percent dependent on the health and resiliency of Black Hills forests.

No word in the English dictionary more accurately or completely describes the forest products industry's manufacturing complex in the Black Hills than the word “versatile,” a word whose synonyms include “adaptable, flexible, multifaceted, multitalented, multiskilled, protean, convertible and resourceful.”

Versatility and its synonyms have been central to the industry's drive to convert as much wood fiber into useful, everyday consumer products. Advancing milling technologies have helped but there are no substitutes for entrepreneurship and a keen grasp of ever-changing market conditions.

The symbiotic relationships – the ties that bind timber, tourism, mining, agriculture and the U.S. Forest Service to one another – have been central to economic development in the Black Hills since Case No. 1 was sold to the Homestake Mining Company in 1899.

Unfortunately, as the beetle epidemic subsides these symbiotic relationships face a new risk – environmental groups that have chosen to ignore history and science in their advocacy for a “hands off, leave it to nature” approach in the Black Hills. How their latest attack will impact the scope of Forest Service management planning is impossible to predict.

But this much needs to be said: Black Hills forest products manufacturers and remanufacturers are heavily dependent on timber harvested from the Black Hills National Forest.

Likewise the hundreds of tourist-related businesses that feed every community here – except that they are totally dependent on the beauty of ponderosa pine forests that rise above grasslands that stretch to the horizon in every direction.

A strong case can be made for the fact that tourism isn't the only service industry in the Black Hills. Loggers, lumbermen and other wood processors

and fabricators found in everything from barns and industrial parks are also service providers – and their most demanding customers are the nation’s 331 million citizens.

Pinchot could not have envisioned what we see today in the Black Hills, but his insistence on methodical and detailed planning has been spot-on since 1899. And he was correct in his belief that the only way to conserve Black Hills forests is to carefully and constantly manage them.

Nature’s management tools – beetles, windstorms and wildfire – leave too much uncertainty to meet society’s needs: clean

air, clean water, abundant fish and wild-life habitat and a wealth of year-round outdoor recreation opportunity.

Mount Rushmore, Crazy Horse and Black Elk look down on a sea of green surrounded by grasslands that run for hundreds of miles in all directions. They remind us that this sea must be navigated and navigation takes patience, skill and endurance – attributes at the core of Gifford Pinchot’s long-game.

Keeping this sea green has been the responsibility of the U.S. Forest Service since its founding in 1905. It’s a big job. Beetles, wildfires and political headwinds

have buffeted the agency’s course from Day 1. But it enjoys something in the Black Hills that is rare today: a deep reservoir of public support from the vast majority of South Dakota and Wyoming residents who are comfortable with logging and forestry because they have seen the results firsthand and know that managing ponderosa is key to keeping beetles and wildfire from roiling their beautiful green sea.

*Jim Petersen is the Founder and President of the non-profit Evergreen Foundation. He has been a working journalist for over 50 years.*



William Illingworth’s iconic 1874 photograph of the Custer Expedition descending South Dakota’s Castle Creek Valley, about 14 miles northwest of Hill City. Contrast this with our cover photo taken from the same vantage point by Julia Petersen in July 2018. Most of Illingworth’s original photo points are now blocked by towering ponderosa pines. Most of Illingworth’s surviving glass plate negatives – including this one – are now the property of the South Dakota State Historical Society.

# The Evergreen Foundation



The Evergreen Foundation is a non-profit 501(c)(3) corporation. We were incorporated in Oregon in 1988, two years after our founding. Our mission has remained unchanged for 34 years. We exist to help advance public understanding and support for science-based forestry and, concurrently, to encourage citizen participation in the congressionally mandated [National Forest Planning Process](#)<sup>15</sup>

To these ends, we publish *Evergreen*, our periodic journal, and we maintain a content-rich website [Evergreen Magazine](#)<sup>16</sup> – perhaps the most-visited forestry website in the world.

In our research, writing and publishing activities we work closely with a variety of experts – including landscape ecologists, fire ecologists, biologists, botanists, forest economists, conservationists, collaborative stakeholder groups, private timberland owners, lumbermen

and the staff of federal and state forest management agencies.

We believe the health, productivity and resilience of our National Forests can only be achieved through the application of science-based, time-tested principles and local knowledge offered by those who have lived with the land and their mistakes long enough to have developed a wisdom and capacity for judgement.

Congressionally blessed forest collaboration via citizen-stakeholder groups is key to reducing the environmental and community-based risks associated with the West's wildfire pandemic. We applaud Congress for its efforts to encourage state and tribal participation in “boots on the ground” forest restoration work designed to reduce wildfire risk by removing dead and dying trees from forests that hold too many trees for the capacity of the land.

[The Good Neighbor Authority, Farm](#)

[Bill authorized collaboratives, and the Collaborative Forest Landscape Restoration Project Initiative](#)<sup>17</sup> all provide legal pathways for short-circuiting the costly and disruptive efforts of serial litigators representing groups that oppose all forms of human intervention in our wildfire pandemic.

Visit our website to learn more about this environmental crisis or to order a copy of Jim Petersen's latest book, *First, Put Out the Fire!*<sup>18</sup>

This widely praised book traces the history of our wildfire pandemic and explains what we must do to protect our federal forest heritage.

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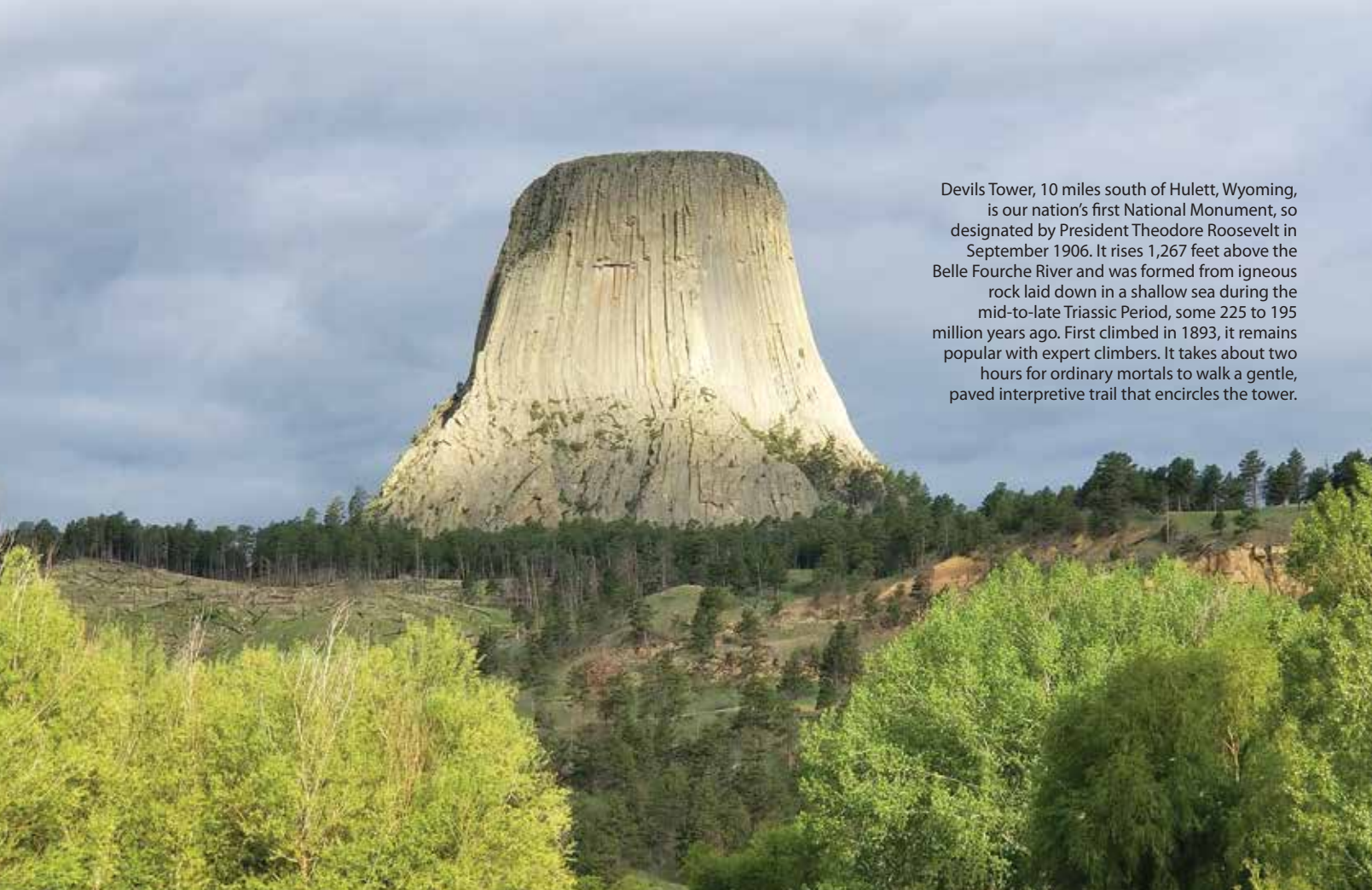
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18



Devils Tower, 10 miles south of Hulett, Wyoming, is our nation's first National Monument, so designated by President Theodore Roosevelt in September 1906. It rises 1,267 feet above the Belle Fourche River and was formed from igneous rock laid down in a shallow sea during the mid-to-late Triassic Period, some 225 to 195 million years ago. First climbed in 1893, it remains popular with expert climbers. It takes about two hours for ordinary mortals to walk a gentle, paved interpretive trail that encircles the tower.