



Logging the Virgin Forests of West Virginia

Write-up assembled/written by Andy Hiltz

The Potomac Appalachian Trail Club would like to extend special thanks to McClain Printing Company, P.O. Box 403, Parsons, West Virginia, 26287 for permission to reproduce selected photos out of Roy B. Clarkson's *Tumult on the Mountain*. Information on purchasing copies of this book can be found at the bottom of this page. Much of the information contained on this page is referenced/excerpted from Clarkson's book and is therefore copyrighted. (Source data is used with permission from McClain Printing Co.)

"A wilderness of great extent, presenting the virgin face of nature, unchanged by human cultivation or art, is certainly one of the most sublime terrestrial objects which the Creator ever presented to the view of man....."

Joseph Doddridge
West Virginia, 1824

If you've ever backpacked in the West Virginia mountains, there's one fact that becomes quickly evident. Virtually every hollow, every stream, and every mountain has a railroad grade. In some places, the railroad ties are still on the ground. In others, visitors might run across a rusting washtub in the middle of the woods, or even an occasional railroad spike or rail. Regardless of how far back you go or how deep into the wilderness, the grades are there - mute testament to the energy of man, power of the dollar, and the complete destruction of the West Virginia forest ecosystem.

In many years of travel through the West Virginia backcountry, I've often wondered what the original forest must have looked like. Could I possibly envision walking through miles and miles of spruce forest with trees growing to a size difficult to comprehend? What would it have been like to camp in these hollows and flats filled with massive trees and extensive laurel and rhododendron thickets, where in places the cover was so thick that sunlight never reached the ground? What would I have felt standing next to a poplar soaring 140 feet into the sky? I can only imagine.



Before the logging began, this is what the virgin, untrammeled forest looked like in West Virginia. Today, we have only pictures to remember the grandeur of the once extensive Allegheny forests. © McClain Printing Company

The destruction of these once magnificent forests in the 1880's and stretching over a forty year period was "complete". Virtually every tree on every mountain was cut down and hauled out by horse, steam rigger, or train. The logging companies that swarmed over the West Virginia mountains removed these trees "with pride". This was the age of the Industrial Revolution - man's superiority over nature. The days of the railroad, cattle and timber barons, and industrial giants like J.P. Morgan. Progress was good. Nature existed to serve man's superior intellect and needs.

As is true of all the "major undertakings" of man, clearcutting and the ultimate devastation of the Allegheny forest ecosystem was documented in pictures by the various logging companies that cleared the land. Today, for those that have visited the backcountry regions where few men originally roamed, these pictures bring to life a time in our history when a tree was more valuable as a clothespin than a national resource for recreation and ecosystem preservation. The photos show what once was, and what is now lost to history under the lumberman's saw.

Very little descriptive data is available on the original forests. It remained for George Washington while exploring the valley of the Great Kanawha to leave one of the first meager description of trees in this wild uncharted land. On November 4, 1770, while traveling along the Kanawha River he wrote in his journal, "Just as we came to the hills, we met with a Sycamore...of a most extraordinary size, it measuring three feet from the ground, forty-five feet round, lacking two inches; and not fifty yards from it was another, thirty-one feet round." As late as 1870, we read that "at least 10,000,000 acres (of the 16,640,000 acres of land in West Virginia) are still in all the vigor and freshness of original growth".

Washington's description whets the imagination. What did this huge, virgin forest originally look like?? A description of some of the trees that were cut in the forest may help shed light on this question:

The most valuable logging tree in the State was red spruce. It occurred over vast areas on the tops of mountains and on the plateaus. Prior to the logging effort, there was 469,000 acres of spruce in the Allegheny forest. The typical red spruce was 60 to 90 feet with a diameter of 2 to 4 feet. The greatest stand of red spruce in the world (in terms of size and quality) could be found along the upper Red Creek drainage in what is now Dolly Sods Wilderness. The entire region was clearcut.



Red spruce dwarf the lumberjacks who are soon to cut them. Cheat Mountain, Pocahontas County on lands of the West Virginia Pulp and Paper Co., 1910. © McClain Printing Company

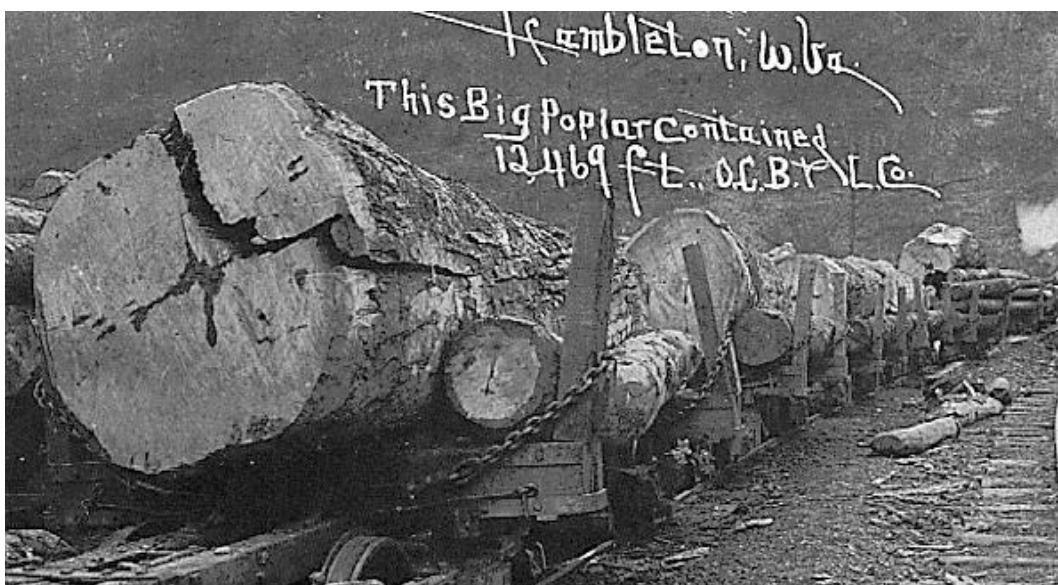
On the northern exposures and in cool, wet ravines, hemlock could be found. The largest known hemlock tree cut during the logging effort was seven feet in diameter at the base and was located at Curtin, Nicholas County, WV. The best growth of hemlock occurred along Cranberry, Williams, and Gauley rivers, where the trees grew to 6 to 7 feet in diameter. (This area included part of the Cranberry Wilderness, where few hemlocks now remain.) The entire area was clearcut.

White oak, the largest timber tree in the original forest, often attained a height of 100 feet and a diameter of over 6 feet. It could be found on the slopes and ridges of dry, thin soils derived from sandstone and shale. The largest known tree ever cut in West Virginia was a White Oak, and it is pictured here. The other oaks, along with this world record tree, were all clearcut.



The largest tree logged in the State of West Virginia, near Lead Mine, Tucker County, 1913. This white oak, as large as any California Sequoia, was probably well over 1,000 years old. It measured 13 feet in diameter 16 feet from the base, and 10 feet in diameter 31 feet from the base. © McClain Printing Company

The most important cove hardwood tree was the Yellow Poplar, a species that grew to enormous size. The typical poplar attained a height of 120 to 140 feet, and a diameter of 7 to 9 feet, with a distance to the first limb of 80 feet. Several poplars 10 and 11 feet in diameter were located by loggers and cut down. Large poplars were not isolated freaks in the original forest. They often occurred in nearly pure stands. They were all clearcut.



This large yellow poplar cut in 1913 on Green Mountain, Tucker County, by the Otter Creek Boom and Lumber Co. at Hambleton, filled an entire logging train and furnished 12,469 board feet of lumber. The tree was taken from an area that is now part of the Otter Creek Wilderness. © McClain Printing Company

On the ground could be found extensive undergrowth. The following is an excerpt from an account written in 1857 by David Strother concerning the Canaan Valley/Dolly Sods region:

"The hunters had been dodging the laurel-brakes all day.....They had stories of men who had spent days in them, wandering in circles, and who had finally perished from starvation.....Some of these brakes extend for many miles, and are so dense that even the deer cannot pass except by finding the thinnest places.....Ascending the stump of a riven hemlock, a striking picture presented itself. The laurel waved up and down as far as the eye could reach, like a green lake, with either shore walled by the massive forest, and out of its bed rose singly or in groups of three or four, the tallest and most imposing of the fir species."

These extensive laurel brakes, along with virtually every other standing tree in the Alleghenies, were clearcut.

Man Discovers the Alleghenies

Originally, pioneers wandered into the West Virginia mountains during the mid-1700's through early 1800's. The first town settled west of the Alleghenies was Marlinton, and many of the old houses built during that time are still standing in town. Many of the largest trees in the forest occurred along river courses and valley bottomland used for farming. These were the first acreages to be cleared. We'll probably never know how large the BIGGEST trees were in West Virginia since the cuttings were not documented.

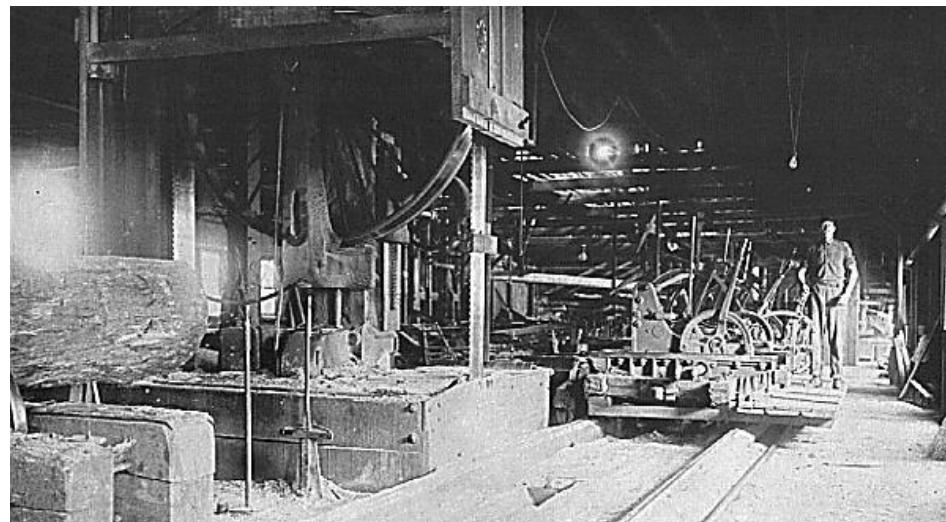
Man was quick to recognize the economic potential of the extensive woodlands in this "new" territory. Originally, early logging efforts were undertaken with simple cross-cut saws. One man would stand on the top of a felled log and the other worked in a pit dug into the ground. However, this was an inefficient, labor intensive method of sawing timber. Manual cutting was soon replaced by water-powered cutting mills. With the evolution of the steam engine, and the circular saw invented by an Englishman named Miller in 1777, "production" mills started to appear across the state. In 1835, there were fifteen circular sawmills powered by steam in the area now comprising West Virginia. By 1880, there were 472 lumbering establishments, the majority of which were circular steam mills. By 1882, there were 82 sawmills along the Chesapeake and Ohio Railroad alone. Despite the rapid growth of these mills throughout the state, logging in West Virginia didn't really take off until the introduction of two new inventions - the Band Saw and the Shay locomotive.

The Beginning of the End

The first patent for a band saw in the United States was granted to B. Barker in 1836, and the first band sawmill was erected in West Virginia in 1881. The concept for the band saw was simple. A flat saw blade fashioned into a continuous loop was mounted on two large wheels. One of the wheels was powered by a steam engine. As the steam engine turned the wheels and the band saw, a log was passed through the blade, cutting a board 16-feet long. Sawdust from the cutting was efficiently drawn down through the floor where it was blown directly into a hopper feeding the steam engine. Some of the larger, more powerful mills had band saw blades with teeth on both sides so cutting could be performed with each back-and-forth pass of the log.

During the forty-year heyday of large-scale logging production in West Virginia, the band sawmill was king. It required 17 acres per day of West Virginia virgin timber to keep the gaping portal of a single mill filled with a steady flow of logs. In 1909, at the peak of lumber operations, there were 83 band mills and 1,441 other

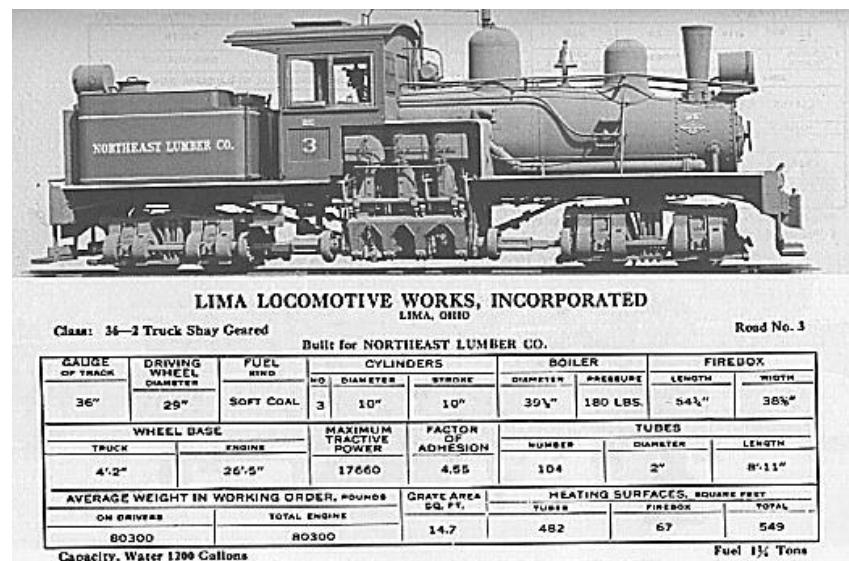
lumbering establishments operating in the state. Nearly one and a half BILLION board-feet of lumber were produced during that year.



In the "belly of the beast" - the band saw and log carriage of the Otter Creek Boom and Lumber Co. at Hambleton, Tucker County, 1913. Most of the timber in what is now the Otter Creek Wilderness Area passed over this band saw blade. © McClain Printing Company

The second invention of the day clearly had the most impact of all - the Shay geared locomotive. The logging railroads of the 1870's had only rod locomotives available. Because of their rigidity, track had to be fairly well graded and laid down, and it could not be too steep or the curves too sharp. As a result, the first logging lines were costly and developed slowly. Animal power was usually more economical than this type of railroading in the woods.

It was clearly necessary that a special locomotive be developed for logging service. This engine was not to be evolved at the drafting board of a locomotive builder, but in the field. An ingenious lumberman, Ephraim Shay, is generally credited with the idea and construction of the first geared locomotive. By using reducing gears instead of side rods, his locomotive achieved unheard-of freedom of movement on rough, hilly, and sharply curved track, and a more smoothly applied, higher tractive effort with minimum locomotive weight. High stability with low speed was required and achieved by the Shay locomotive.



Builder's photograph and specifications for Shay No. 3, Northeast Lumber Co. 1924. © McClain Printing Company

The success of the geared engine for mountain logging was phenomenal. Lima Locomotive Works and its successors of Lima, Ohio (which produced the Shay between the years 1880 and 1945) made 2,761 Shays. Of this number, over 200 were used in West Virginia logging. The geared design opened a new era in logging. For the first time it was possible to operate a locomotive on track that was no better than that formerly required by animal-powered tramways.

The Virgin Forest Falls

With the introduction of the band saw and Shay locomotive, rail-lines started snaking into the deepest hollows of the West Virginia mountains. The virgin forests of the Alleghenies rapidly fell to the lumberman's cross-cut saw. The decline of the forest is shown very dramatically by comparing the following statements:

1835 - "West of the Alleghanies a large portion of the country must forever remain in its primitive forest." (Joseph Martin)

1870 - "At least 10,000,000 acres are still in all the vigor and freshness of original growth." (J.H. Diss Debar)

1876 - "Between 9,000,000 and 10,000,000 acres are in the original forest." (Maury and Fontaine)

1893 - "Nearly or quite one-half of the State is still uncleared, and by far the greater portion of the uncleared land is still in virgin forest." (George W. Summers)

1900 - "The wooded area of West Virginia is estimated at 18,400 square miles, or 73 per cent of the area of the State and most of this is occupied by timber of merchantable size and quantity." (Henry Gannett)

1910 - The virgin forest area in 1910 is slightly over 1.5 million acres.

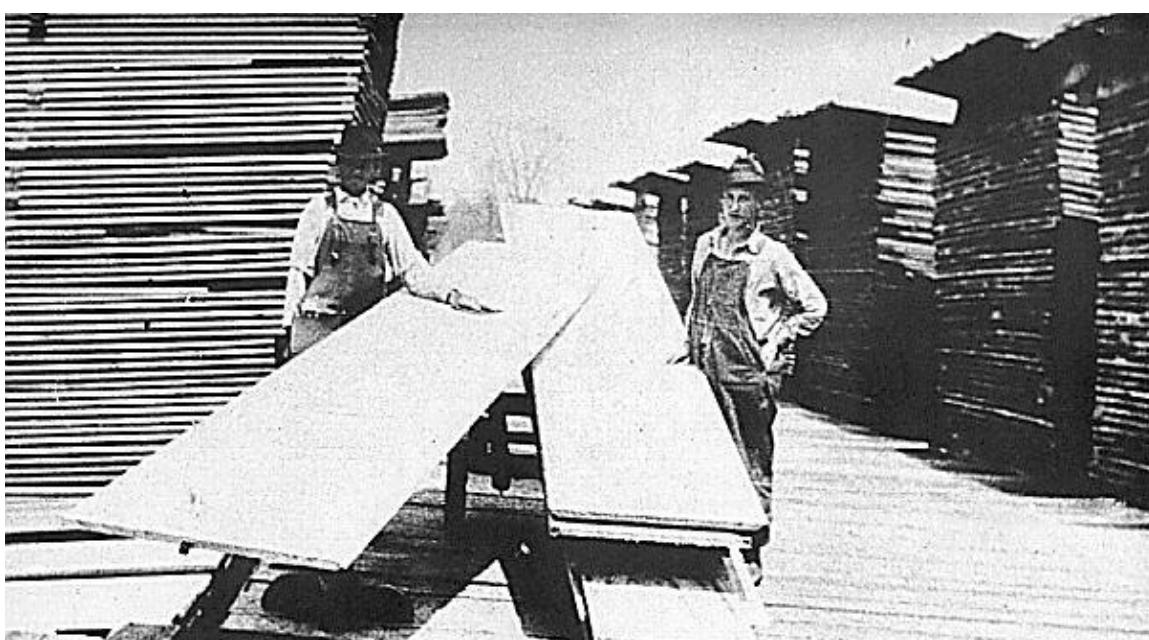
1920 - The original forest is completely depleted, except for a few isolated areas of small acreage.



Stacks of pulp wood at just one West Virginia pulp mill during the peak of logging activity - the West Virginia Pulp and Paper Co. at Davis, Tucker County, 1909. © McClain Printing Company

It has been estimated that from 1879 to 1912, the total cut of lumber in West Virginia was more than 20 billion board feet. By far, the greater percentage of this was cut by band mills. This figure represents the lumber from 8,500,000 acres of virgin forest or more than 85 per cent of the total timbered area of the State. The total lumber cut in West Virginia between 1870 and 1920 was more than 30 billion board feet. This amount of lumber would build a boardwalk 127 feet wide and 2 inches thick around the circumference of the earth or would make a walkway 13 feet wide and 2 inches thick the average distance to the moon.

The following pictures tell the story:



A cabinet- maker's dream - poplar boards almost two feet wide. Good luck finding any today. Birch Valley Lumber Co., Tioga, 1916. © McClain Printing Company



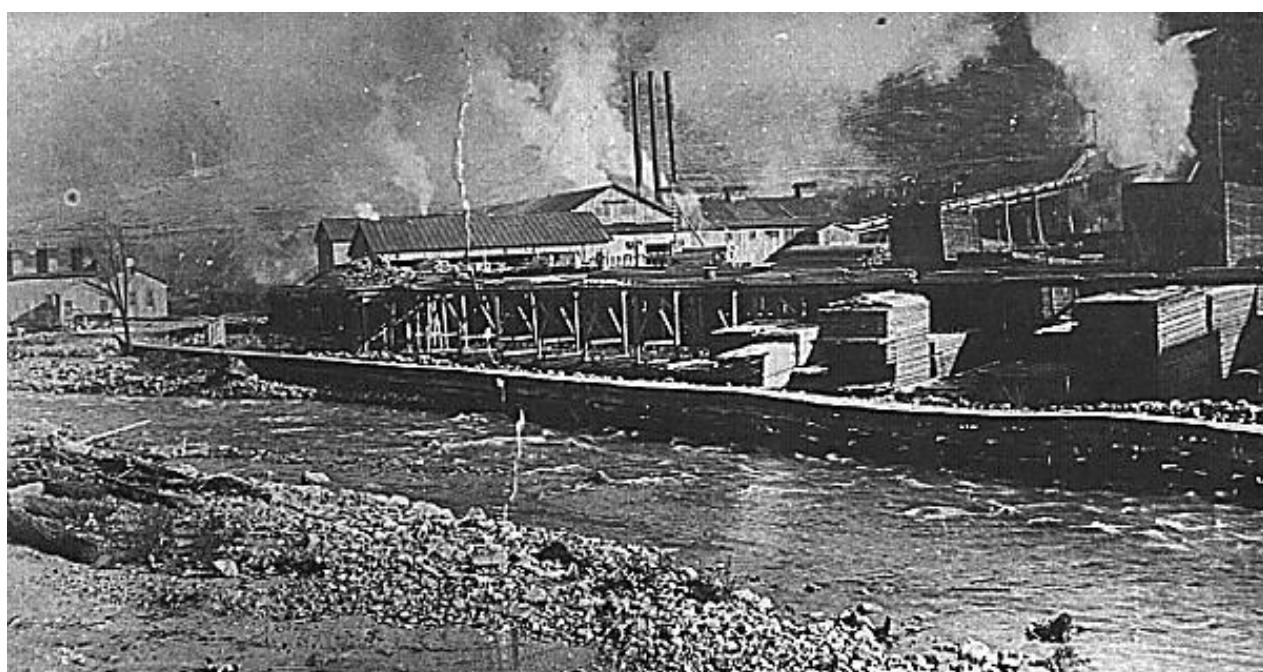
Landing of white pine logs run down the river by the Pardee and Curtin Lumber Co., Sutton, Braxton County, 1897. Note the size of the logs. © McClain Printing Company



Another load of huge logs leaves a logging camp on the Cherry River at Curtin, Nicholas County, 1902. This region is due south of the Cranberry Wilderness. © McClain Printing Company



The first step in logging a new area is to build a railroad grade. Most of the railroad grades and track laid in West Virginia were built exclusively by Italian laborers, many of whom could not speak English. This grade was near the Cranberry Glades in the Cranberry Wilderness and is now part of FS 102. © McClain Printing Company



Once this huge band saw mill of the Parsons Pulp and Lumber Co. in Laneville (and another down the road) processed logs from the Dolly Sods/Roaring Plains region. Today, there is only a small collection of simple homes to mark the spot. © McClain Printing Company



Now a favorite camping area in the Dolly Sods Wilderness, "The Forks" was previously the site of this logging camp of the Parson's Pulp and Lumber Co. in 1909. © McClain Printing Company



Scene of mass destruction. This steam skidder is loading logs just above "The Forks" on the right prong of Red Creek. The picture shows that the now deeply forested hollows and spruce covered ridges of the Dolly Sods Wilderness were completely clear-cut by 1913. © McClain Printing Company

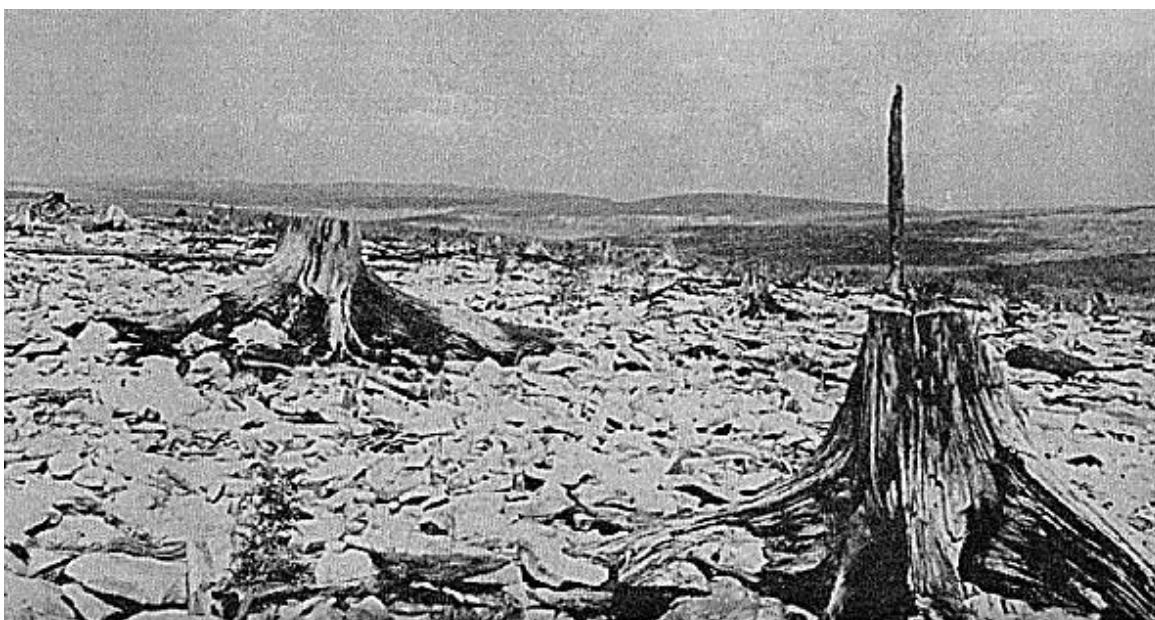


Over one million feet of logs were in this landing on Red Creek - now part of the Dolly Sods Wilderness. Today, spruce trees have yet to re-seed and grow along the creek. © McClain Printing Company

FIRE!

If logging wasn't enough, the final chapter in the destruction of the Allegheny ecosystem was to be played out by the sterilizing element of fire. The first episode in a long chain of events that led to the complete destruction of the original forest occurred in 1863 when fire escaped from the campfire of Confederate scouts on the Roaring Plains in Randolph County. For many years thereafter, destructive fires swept through the region from the head of the Greenbrier River along the sides and top of Allegheny Mountain through Pendleton, Randolph, Grant and Tucker counties. The slash from the virgin forest (branches, and tree crowns with wood too small to be of marketable use) was extensive. These conditions created a tinder box waiting for a spark.

Consequently, fire followed fire until the remaining green timber and all reproduction were destroyed. This was especially true in the spruce areas, where even the deep humus was burned to bed rock. Many stands of virgin hardwood were not cut but destroyed by fire spreading from areas of spruce slash into areas of hardwood.



*Clearcut, then burned to bedrock by fire, this old photograph looks from Cabin Mountain into the northern stretches of the Dolly Sods Wilderness.
Today, some eighty years later, the summit of Cabin Mountain is still devoid of trees and soil. © McClain Printing Company*

The destruction was extraordinary. More than one-tenth of the whole surface of the state was burned over, including one-fifth of the forest area. Three per cent of the estimated standing timber in West Virginia was destroyed, including the small as well as the large. The amount burned was two-thirds as much as the cut of all the mills in the state in 1907.

As to the origin of the fires, 71% was from locomotives, 20% from sawmills and campers, 3% set to improve the range for livestock, 2% incendiary, and 4% from other causes. The great forest of the Alleghenies was finally destroyed.

The Remaining Virgin Forest

Surprisingly, through hook or crook, not every last acre of virgin timber was logged in West Virginia. There are two areas where the original forest stands tall and proud, and both can be easily visited by automobile. Granted these areas are small, but each has an interesting story to tell.

Gaudineer Knob -

The first is the Monongahela National Forest **Gaudineer Knob Scenic Area** located roughly roughly four miles north of Durbin, West Virginia on Route 250. How this area was "accidentally" spared is best described in Maurice Brook's beautifully written book, *The Appalachians*:

"Some years before the Civil War a speculating land company bought a tract of 69,000 acres on the slope of Shavers Mountain. Their tract fronted for about seven miles along the eastern side of the mountain. To survey and mark their holdings, the company hired a crew of men who must have found rough going in this wilderness. The crew did a good job, but its chief forgot one thing - the fact that a compass needle points to magnetic, not true north. In this area, the angle of declination is about four degrees, a significant source of error on a seven-mile front."

"An experienced Virginia surveyor, in checking the data, discovered the error, but said nothing about it. Presently however when the sale was being concluded and the deeds recorded, he brought the error to light, and under a sort of "doctrine of vacancy", claimed the wedge of land left by a corrected survey. His title was established, and he and his heirs found themselves owner of a seven-mile strip of forest, aggregating almost 900 acres. While timber above and below the wedge was cut, this narrow holding was undisturbed."

The 130-acre Gaudineer Knob Scenic Area tract was eventually purchased at the insistence of former Monongahela National Forest Supervisor Arthur Wood, who believed that future generations should know what an Appalachian spruce stand was like. I have had the pleasure of visiting this area more than once, and you should too. There is feeling in this small stand of huge trees hidden in the midst of the West Virginia mountains that you can not experience anywhere else in the State.

Cathedral State Park -

The second area that missed the bite of the lumberman's saw can be found at **Cathedral State Park**. The Park encompasses an ancient hemlock forest of majestic proportions - trees up to 90 feet in height and 21 feet in circumference form cloisters in the park. Throughout the woods, the hemlock is the climax species. The park has the distinction of containing the largest hemlock tree in the state.

The woods were preserved because of the love each owner had for this unique area. The land was eventually purchased in 1922 by Mr. Branson Haas, a workman for the Brookside Hotel (which is no longer standing on the site). He sold the woods to the State of West Virginia in 1942 with the stipulation that it remain untouched by ax or saw. On October 6, 1966, Cathedral State Park was entered into the National Registry for Natural History Landmarks, and in 1983 was recognized by the Society of American Forestry in its National Natural Areas Program.

Cathedral State Park is small - just 133 acres - but large enough to get a sense of what the majestic Allegheny forests must have been like before the discovery of man. You can find the park in Preston County on U.S. Route 50, just west of the western Maryland state line.

Out of the 10,000,000 acres of virgin forest that existed in the State of West Virginia before 1750, only these 263 acres remain.

Railroading

For those more interested in the railroading aspect of the logging effort, the state of West Virginia operates the **Cass Scenic Railroad State Park** located in Cass, West Virginia. The railroad offers both eight-mile (1-1/2 hour) and 22-mile (4-1/2 hour) trips scheduled daily June through August. Special fall foliage schedules are offered September through October.



Shay No. 4, which originally hauled logs out of the mountains now hauls tourists into the mountains on the Cass Scenic Railroad. © Pocahontas County Tourism Commission.

The history of the railroad is interesting. It was originally constructed in 1902 by the West Virginia Spruce Lumber Company to remove timber from the Shaver's Fork region of Monongahela National Forest. In 1910, it was sold to the West Virginia Pulp and Paper Company, who in turn sold it to Mower Lumber Company in 1942. Faced with dwindling timber supplies, the operation folded in 1960.

It was left to an impassioned plea by Mrs. Russel Baum of Sunbury, Pennsylvania to convince the West Virginia Legislature to purchase the remaining tracks and three remaining engines as a tourist attraction. In 1961, the Legislature appropriated \$150,000 to make the purchase. Since that time, the line has been extended from 7 to 22 miles.

If you're interested in getting a true feeling of traveling the West Virginia mountains in an authentic logging train pulled by a genuine Shay engine, call the Cass Scenic Railroad State Park at 304-456-4300 for more information. In 1995, tickets ranged from \$10 to \$15 for adults, and \$6 to \$9 for children. Be sure to ask the park about the Saturday night barbecue Dinner Train rides, and the "Halloween Train".

Logging Mill Tours

.....And logging continues today. Available to individuals and groups, this new industry tour offered by the Beckwith Lumber Company provides an educational opportunity for visitors. The timber industry still plays a large role in the economy of many mountainous counties in West Virginia, and these tours educate participants on all aspects of the timber industry. Beckwith Lumber Company is located on Rt. 219 in Slaty Fork. Tours are on weekends only, and advance notice is required. Call 304-572-1220 for more information. [Please note that tours may no longer be available]

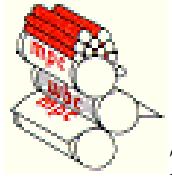
Books and other Historical Publications of Interest.....

Nearly all the source material used to develop this write-up was drawn from an extraordinary book entitled *Tumult on the Mountain* written by Roy B. Clarkson. I have presented only a "taste" of what this book has to offer in the way of information and pictures. If you're interested in getting the entire picture of the logging in the West Virginia mountains - camp life, locomotives, the people, the companies, logging techniques, and even a map of the rail lines, then there is no better book to own. Clarkson has done his research, and presents this information in a lively, informative, and entertaining manner. I would rate this book as a "must own" for any backpacker or hiker who regularly visits the recovering forests of the Monongahela National Forest.

A second book that will also be of great interest to outdoorsmen is *The Last Forest*, written by G.D. McNeill. The Last Forest takes you back in time to the 1880's to the unspoiled Cranberry Wilderness Area before the logging clear-cut the magnificent hemlock from this region. The book closes fifty years later, with the last virgin forest cut over and despoiled. The book also includes tales of local events, providing more of a

"resident's" view of the logging effort and life in the mountains at the turn of the century. Formerly out of print for over half a century, this book is now back in publication and available for sale.

A third book takes you north to the Blackwater Falls region. Beginning with a look at the past and the exploits of Porte Crayon and others, *Blackwater Country* written by J. Lawrence Smith deals with many of the scenic and natural wonders of the Blackwater Falls- Canaan Valley area.



These three books, as well as MANY others dealing with life in West Virginia can be purchased from the McClain Printing Company, 212 Main Street, Parsons, West Virginia 26287. Call 304-478-2881 to request a catalog of their extensive line of historic, cultural, and general interest books written by authors of the Mountain State.

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