



the IDAHO FOREST



FROM LUMBERJACKS TO LASERSAWS



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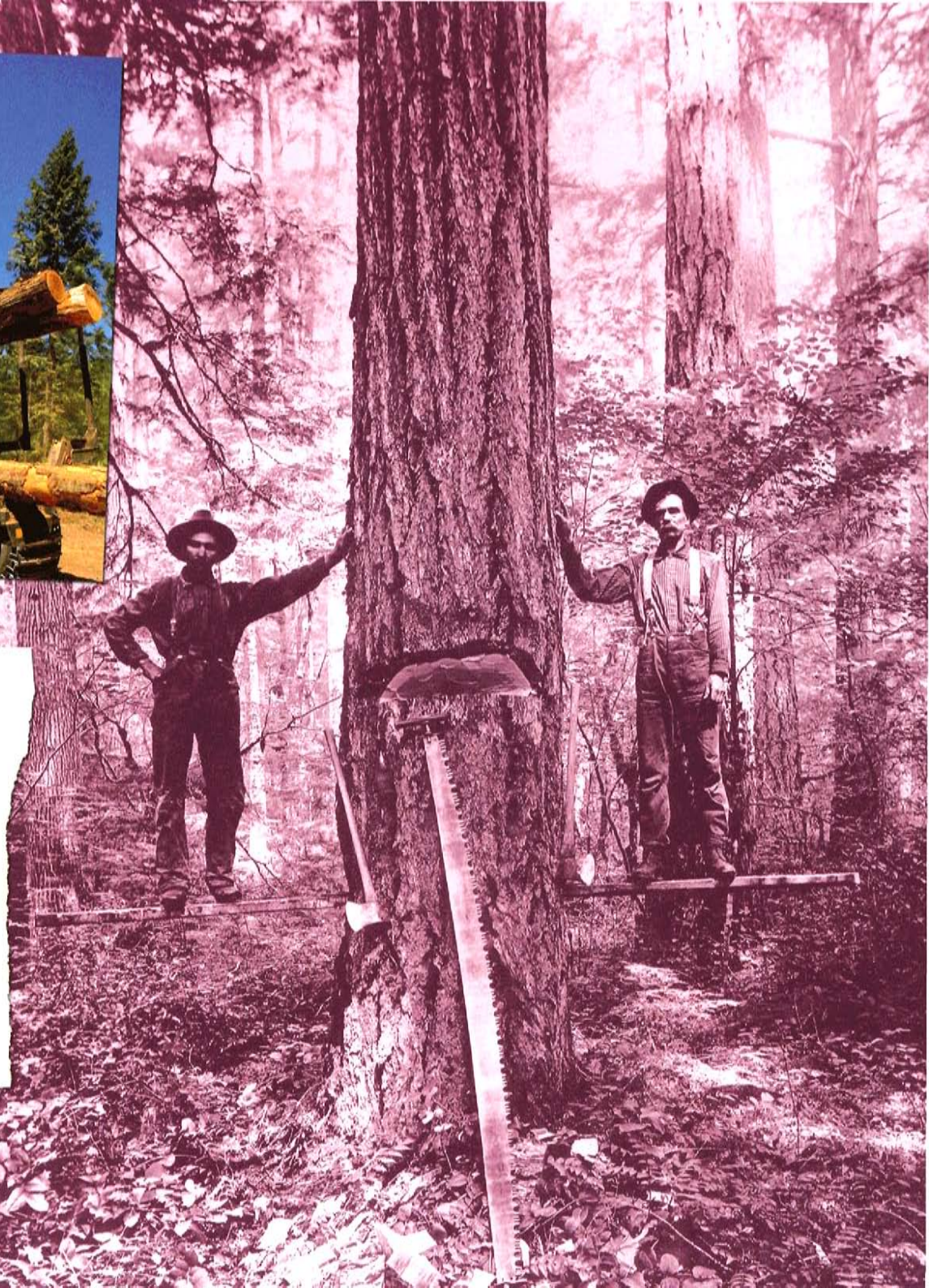


Welcome to "The Idaho Forest: From Lumberjacks to Lasersaws." This reader is a supplement to your study of Idaho's fascinating history. With this reader and activities your teacher does with your class, you will explore four forest-related topics:

- 1) The western white pine—our state tree!
- 2) What trees grow where, and who owns Idaho's forests
- 3) Tools of the trade (changes in forest technology)
- 4) People and Idaho's forests

You can learn more about Idaho's forests on the web at www.idahoforests.org.

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KING PINE CROWNED AS IDAHO STATE TREE

By WOODY ASPEN

Boise, August 7, 1935— The Idaho Legislature has chosen the western white pine to be Idaho's official state tree. Its scientific name, *Pinus monticola*, means "pine of the mountains." It also has a nickname: "King Pine." Folks are asking, "Why the white pine? Why not the Douglas-fir, ponderosa pine or other trees that grow in Idaho's forests?"

Here are some of the reasons:

- The white pine is the most plentiful and valuable type of tree in the moist forests of northern Idaho.
- The white pine is one of the fastest-growing trees. It can grow 2 to 4 feet taller each year.
- It is one of the biggest trees, reaching up to 200 feet tall (as high as a 20-story building), and nearly 7 feet across.
- White pines produce a lot of wood. A single white pine may have enough lumber in it to build a whole house!
- White pine wood has a straight grain. This makes it an excellent wood for building furniture and doors. It also makes nice matchsticks!
- Most importantly, the white pine has brought people and wealth to Idaho. Huge forests of these giant trees started a "timber rush" in Idaho in the early 1900s. Forest land was in high demand. Sawmills were established and communities sprouted up, filled with lumberjacks and millworkers. New businesses provided goods and services, like grocery and hardware stores.



POLICE REPORT

OFFICIAL
BUSINESS

WOODY GLENN
POLICE
DEPARTMENT

The Vanishing King! Date: 1950

Authorities want to find out why Idaho's state tree—the western white pine—is disappearing. More than half of the magnificent trees are missing from their former homes. There are several suspects.

The number one suspect, is the white pine blister rust. Blister rust is a fungus that attacks white pine trees. It starts on the needles. Then it works its way into the tree trunk. It kills the tree by cutting off its food supply.

Another suspect is a takeover of the forest by other kinds of trees. Early loggers cut down the biggest white pines for lumber and other wood products. They left behind other kinds of trees. These leftovers created a shady forest. Young hemlock and grand fir trees grow well in the shade. However, there was not enough sunlight for young white pines. Grand fir and hemlock trees have invaded the white pine's territory.

Also suspected is fire prevention and suppression (putting out forest fires). For thousands of years, forest fires were started by lightning or set by people. These fires burned down many trees. That let more sunlight into the forest. This sunlight is exactly what young white pines need to grow quickly. When people began preventing and putting out forest fires, many forests grew thick with trees. Not much sunlight made it to the forest floor. Shady forests do not allow the young sun-loving white pines to grow.



Largest known white pine tree,
felled December, 1911.

WANTED FOR MURDER

White Pine Blister Rust



Blister rust is hiding deep in northern Idaho forests.

A deadly fungus (blister rust) has been killing Idaho's state tree.

In 1910, blister rust sneaked into North America.

It was in a shipment of white pine seedlings grown in France.

It was first seen in Idaho in 1923.

Blister rust's partners in this deadly scheme are gooseberry and currant shrubs.

(Their scientific name is *Ribes* – rhymes with “my bees.”)

The blister rust spends part of its life on *Ribes* plants.

The rust makes spores that blow from *Ribes* and land on needles of the western white pine tree. (Spores work like seeds.)

The rust grows from the spore on the needles.

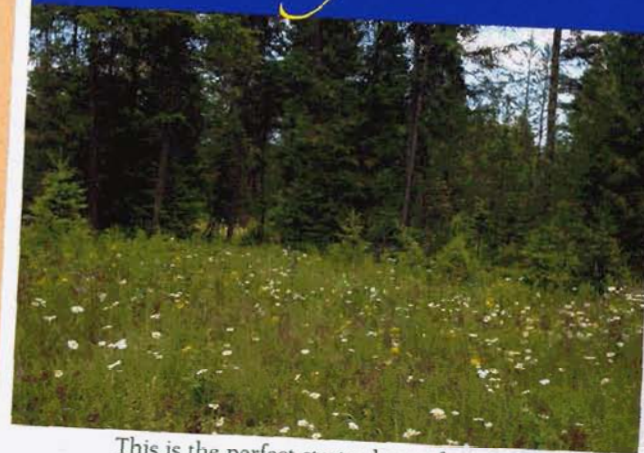
Then it spreads to the branches and trunk of the tree.

Large sores (“cankers”) form, and the tree eventually dies.



NEW LISTING

A Sunny Home



This is the perfect starter home for a young white pine family. The scenic northern Idaho location features at least 30 inches of precipitation yearly in a beautiful mix of rain and snow.

Ranging between 2,000 and 6,000 feet in elevation, the open, sunny, floor plan will give the youngsters plenty of room to put down roots.

Recently opened up and gooseberry free, this beauty won't last. Call today for a showing.

1 800 BIG TREES

Dear Editor,

We've been reading about the troubles of our state tree, the western white pine. This important tree has almost disappeared for the following reasons: 1) the way forests were logged in the past; 2) people putting out forest fires; 3) insects that attack and kill trees; and especially, 4) blister rust. But it's not too late. There are some things we can do to help!

Did you know that since the 1950's scientists have been growing white pines that can resist blister rust? A scientist named Richard T. Bingham noticed something interesting. Some white pine trees were amazing!

He realized that these trees were different. They were like "super pines" that the blister rust couldn't kill!

Even surrounded by dead and dying trees, some white pines were perfectly healthy. He realized that these trees were different. They were like "super pines" that the blister rust couldn't kill!

Mr. Bingham collected cones and seeds from these "super pines." From the seeds, he grew more trees that



could resist the blister rust. He created a special orchard at the University of Idaho in Moscow, Idaho. There, people raised healthy white pines to produce more seeds. This orchard has produced thousands of pounds of white pine seeds. Many scientists at universities, in government, and in private companies

continue this work today.

So, we have the seeds. We can grow thousands of new trees from these seeds each year. We know that western white pines need open, sunny places to grow. These kinds of openings are created by logging, fire, insect damage, and other disturbances. We also need to keep looking for healthy adult trees that can resist the blister rust, and collect their seeds.

There is hope for the King Pine. Let's do everything we can to save it, and let it reign again in Idaho's forests!

Signed,
L.L.K.S.

(Long Live the King Society)

FOREST TYPES IN IDAHO

- DOUGLAS-FIR
- PONDEROSA PINE
- WESTERN WHITE PINE
- LODGEPOLE PINE
- FIR-SPRUCE
- OTHER

SPRUCE-FIR

This type of forest has two main kinds of trees: Engelmann spruce and subalpine fir. Engelmann spruce have short, prickly needles. Subalpine fir have short, blunt needles. These two trees grow together high up in the mountains. Winters are long, cold, and windy, and summers are cool and wet. The trees are very narrow. This helps them spill snow off their branches. Spruce-fir forests are dark, often with many dead branches on the forest floor.

LODGEPOLE PINE

The lodgepole pine is a medium-height tree with a straight and slender trunk. These trees were used as poles for lodges and tepees. Lodgepole pines grow at higher elevations and can thrive in poor soils. They have special cones that open with the heat of fire. After a fire, thousands of seeds sprout at once. The narrow trees can grow so close together that they block the sunlight from reaching the forest floor. Not many other plants can grow in a lodgepole pine forest.

WESTERN WHITE PINE

One of the world's largest pines, the western white pine is Idaho's state tree. White pines grow in forests with many other kinds of trees. They thrive in the moist forests of northern Idaho. The white pine was once a very common tree in northern Idaho. It was prized for its excellent wood.

PONDEROSA PINE

Ponderosa pines are large trees with sweet-smelling bark. They grow in dry mountain areas. Ponderosa pine forests are usually open and sunny. Grasses and wildflowers grow on the forest floor. People have described ponderosa pine forests as open "park-like" places that are good for watching birds and wildlife.

DOUGLAS-FIR

The Douglas-fir is the most common tree in Idaho. It is a tall tree with very thick bark. It grows in rocky soils on mountain slopes. It needs more moisture than the ponderosa pine, but less than spruces and true firs (like grand fir and subalpine fir). Douglas-firs often grow in forests that are mixed with many other types of trees.

IDAHO FOREST TYPES

Everyone knows that Idaho's forests are great places to explore. Whether you prefer the dry ponderosa pine forests, or cool, shady spruce forests, there's a place here for you!



Subalpine fir



Engelmann spruce



Lodgepole pine



Western white pine



Ponderosa pine



Douglas-fir

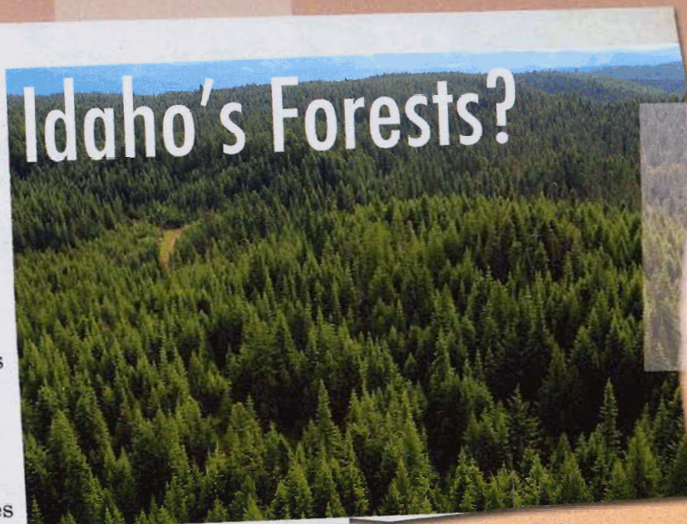
Who Owns Idaho's Forests?

About 70% of Idaho is **public land** – land owned by the government for the benefit of citizens.

Federal public land is managed by United States government agencies. State public land is managed by state agencies. Each agency has its own purpose, which determines how the land is managed.

Private land is owned by a person, a family, or a business. For example, your home and your backyard are private land. Your city park is public land. Some private forest-land owners are businesses that grow, harvest and replant trees. Others are families or individuals, sometimes called "tree farmers." Native American tribes also own and manage forests.

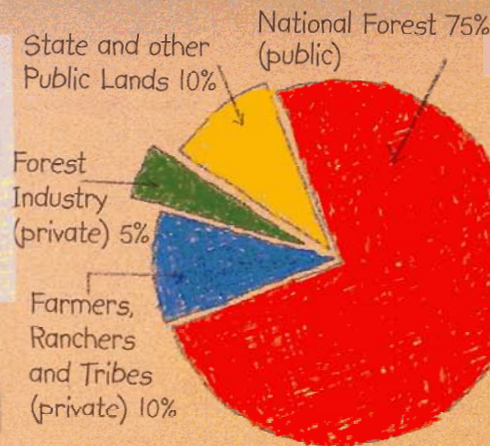
Idaho's forests have an interesting history of land use and ownership. There are some places on a map where private and public land ownership looks like a checkerboard. In other places, large areas of forests are managed by just one public agency.



In Idaho, these government agencies take care of most public and trust lands:

- U.S. Forest Service (USFS)
- U.S. Bureau of Land Management (BLM)
- U.S. Fish and Wildlife Service (USFWS)
- National Park Service (NPS)
- Idaho Department of Lands (IDL)
- Idaho Department of Fish and Game (IDFG)
- Idaho Department of Parks and Recreation (IDPR)
- Bureau of Indian Affairs (BIA)

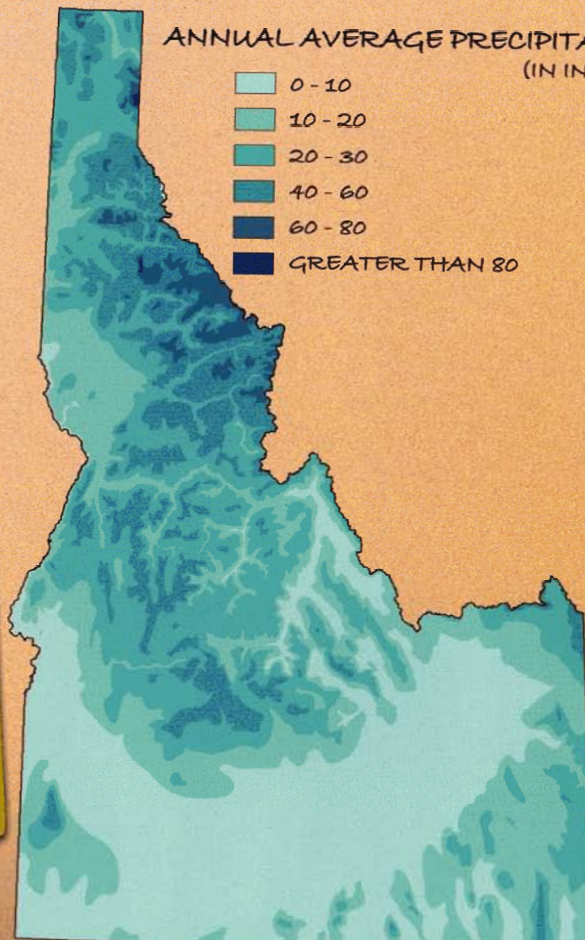
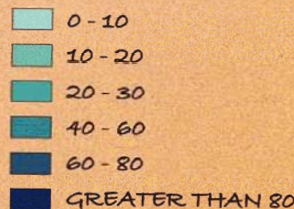
OWNERSHIP OF IDAHO'S FORESTLAND



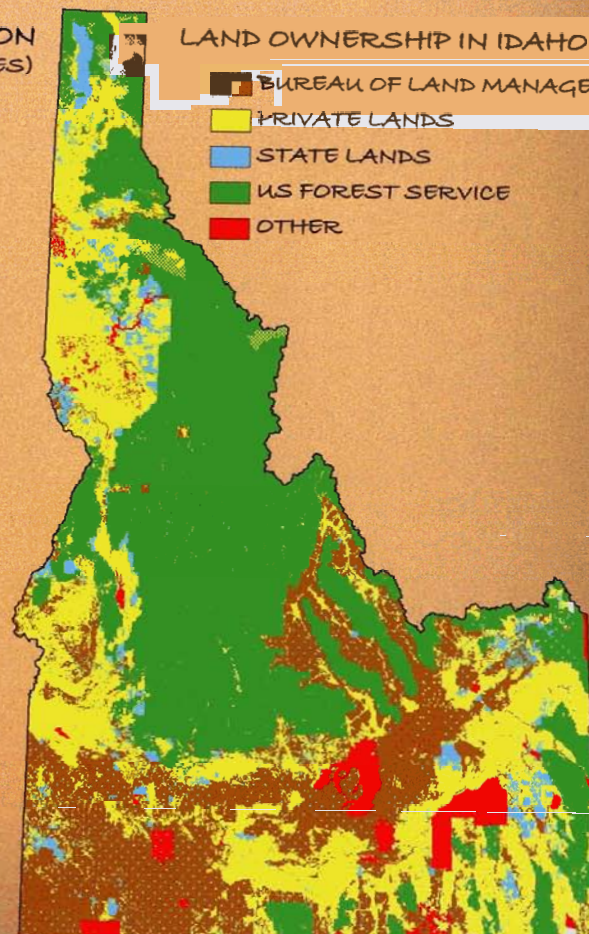
STATE FORESTS ARE SPECIAL

Through treaties and purchases, the United States acquired western lands. Even though states were formed, the federal government still owned much of the land. In 1890, the federal government gave the new state of Idaho thousands of acres of forestlands to produce income and support Idaho public schools. Today, trees are still being harvested from these state-owned "trust" lands that are cared for by the Idaho Department of Lands. The money supports public schools throughout the state.

ANNUAL AVERAGE PRECIPITATION (IN INCHES)



LAND OWNERSHIP IN IDAHO



This Land is Whose Land?

The story of public and private land in Idaho

Long ago, in a land we now call Idaho, there were millions of trees, and very few people. The forested parts of this land were like a patchwork quilt. There were forests of many ages. New trees sprouted after forest fires and there were various ages of growing forests. Some older forests had big pines with grass and flowers under them. Other old forests of cedar and hemlock trees were deep and dark. Native people hunted, fished, and gathered food from the land.

The Oregon Trail brought new people to Idaho. They came to farm its rich soil and ranch in its high valleys. Then gold was discovered. More people came to mine this treasure. Through the Homestead Act, farmers, ranchers and miners claimed land for themselves. Wood was needed for homes, fuel, mine supports and railroad ties. Word spread about the great forests of Idaho. People came from other places where they were running out of trees. There were so many trees in Idaho! The supply of wood seemed endless.

Huge areas of the forest were cut down. No new trees were planted. People worried that the forests might soon be gone. In 1891, the United States government set aside some land as forest reserves. These reserves became national forests in 1905. National forests are owned by all the people of our nation and cared for by the U.S. Forest Service. These public lands provide many things - timber, wildlife and fish habitat, clean water, recreation, scenic beauty, and more. Nearly 40% of Idaho's land is national forest land.

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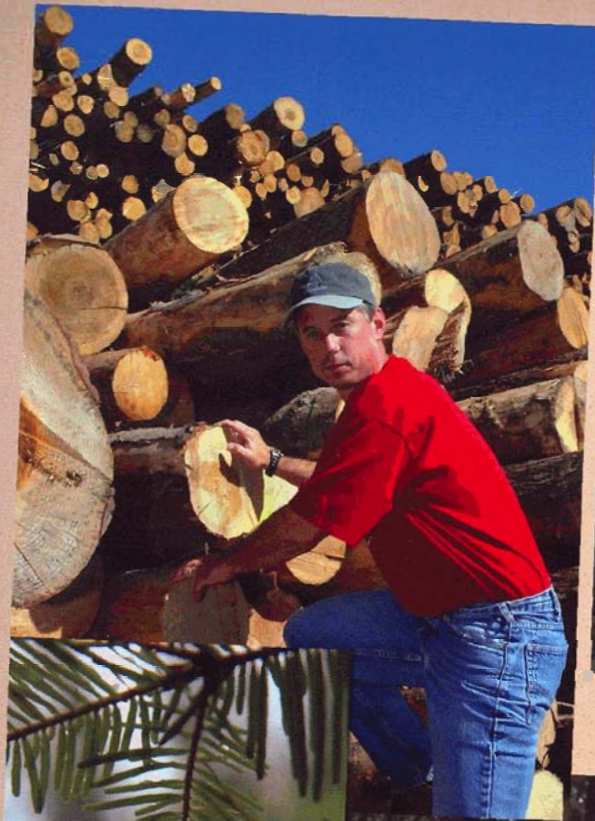
"Lewis and Clark on the Lower Columbia," Charles M. Russell, 1905.
Courtesy of the Amon Carter Museum, Fort Worth, Texas.



Public land is managed for the benefit of citizens by local, state or federal agencies like your city, the Idaho Department of Parks and Recreation and the U.S. Forest Service.

Private land is owned by a person, family or business.





This Land is Whose Land? (continued)

The state of Idaho has its own forestlands. They are cared for by the Idaho Department of Lands. Money made by selling timber from these forests supports public schools.

Many forests in Idaho are privately owned. Some private owners are businesses that manage their forests much like farmers grow crops. They cut down the trees and sell the wood or make it into products like lumber and paper. Then they plant new trees for the future. One example is Potlatch Corporation, which celebrated its 100th anniversary in 2003. Some private forests are owned by individuals and families.

Today, in the land we call Idaho, there are many forest owners and many uses for our forests. Some forests grow trees for wood and paper products. Some are places we go to enjoy nature and recreate. Some are set aside as Wilderness Areas. In a Wilderness Area, no one can build houses or roads. You can't drive a car, use an ATV, or even ride a bike in a Wilderness Area. No logging is allowed. These areas remind us of how this place we now call Idaho may have looked, **long ago.**



1891
Forest Reserve Act.
Forestland was set
aside to be protected
and managed by the
U.S. government.

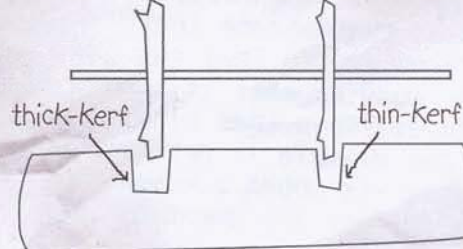
1905
U.S. Forest Service is formed.
"Forest reserves" become
"national forests." The new
agency is to manage forests
for a variety of uses.

Special Antique Corner

Tools Powered By Muscle and Steam

Here are a few relics of Idaho's forest past.

Old saw blade New thin-kerf blade



"SAW KERF" is the width of the cut made by a saw's teeth as the saw moves through wood.

Early sawmills had saw blades with a wide kerf. They produced lots of sawdust. They wasted nearly half of each log. (Modern saw blades are thinner. They have a smaller kerf, so they can make more lumber and produce less sawdust.)

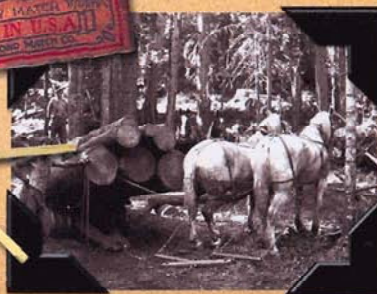
MATCHMAKERS IN IDAHO

The year is 1910. It's a cold, wet night, and you're lost in the woods. You find an open log cabin. Inside, you see wood in a fireplace, a lantern, and a candle, but you only have one match. Which would you light first? The candle? The wood in the fireplace? The lantern? Give up? You'd light the MATCH first, of course! Chances are, it would be a match made by the Diamond Match Company, of wood from a western white pine. Diamond Match Company owned much forested land and many sawmills in Idaho. They made everything from construction lumber to matches. They *invented* a type of match that could easily be lit by *striking* it against a rough surface. When other lumber companies were having trouble staying in business, the Diamond Match Company was doing well... because everyone needed matches!



TEPEE BURNER

Get rid of all those lumber scraps, bark, trimmings and sawdust! Use our tepee burner to burn your wood waste.

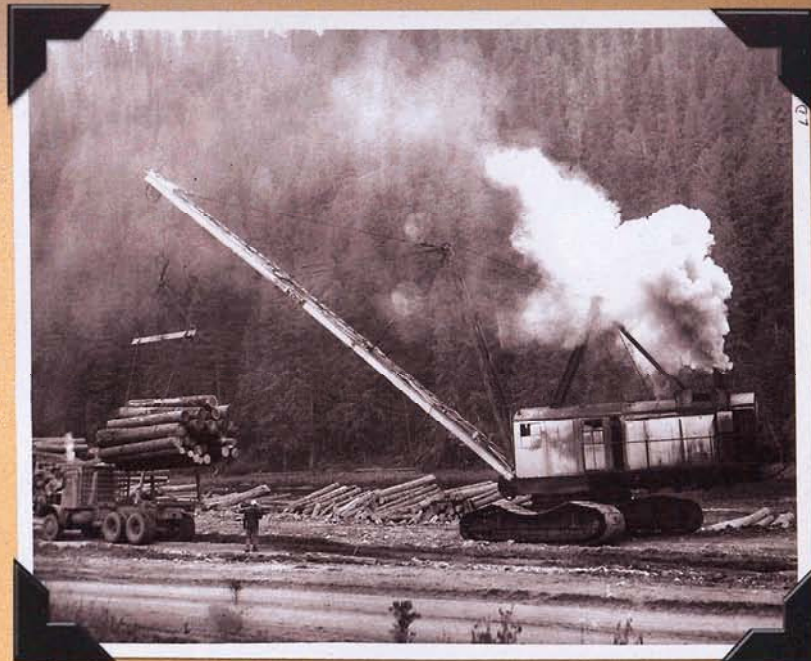


Need to get your logs out of the forest? Our tireless teams can move your wood across the roughest terrain.



TWO-MAN CROSS-CUT SAW

Easier than ever! This saw has the teeth to do the job. You can cut five trees per day!



LOG LOADER

Let our engines work for you! This log loader can do the work of ten men, in less time. Your logs will be loaded and ready to bring to the mill with very little effort!



THE POTLATCH MILL 1906

Brand new circular band saws! Steam-powered machines! This new sawmill is the biggest white pine mill in the country.



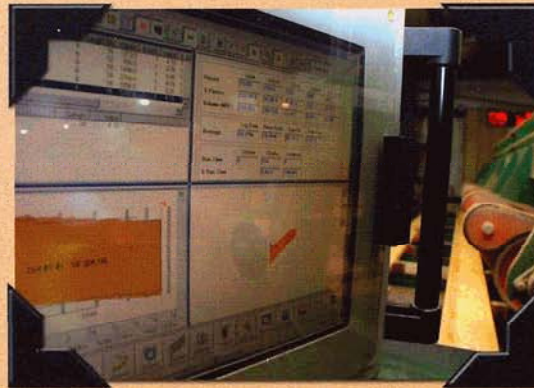
CUT-TO-LENGTH HARVESTER

This machine grabs the tree at the base and cuts it with a saw, shaves the branches off the trunk, and cuts it into logs. The harvester can travel off-road with less damage to the forest floor.



LOGGING TRUCK

Need to get your logs to the mill quickly? Load them on this logging truck for a safe, efficient ride.



MODERN SAWMILL

Modern mills process logs using laser scanners and computers to calculate the best ways to saw in order to get the most out of each log.



FORWARDER

This is a must-have for the modern logger. It carries trees felled by the harvester to the log truck. It avoids the need for skidding (dragging) logs on the ground.



TECHNOLOGY

Technology is used at every step of forest management. A helicopter can be used to get to hard-to-reach places and take logs to a landing.

Today's Forest Technology

Brain versus Brawn in Idaho's Forests

Cutting edge technology brings safety and good forest practices to cutting trees

TOILET PAPER AND MORE

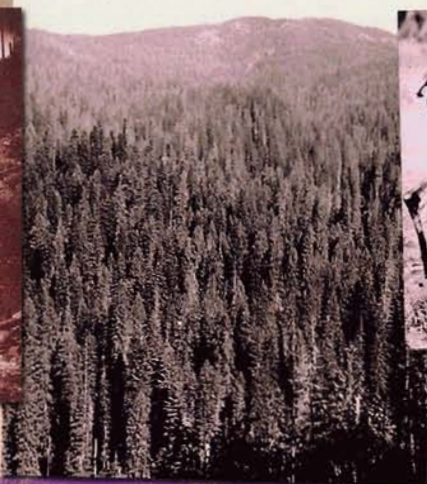
Sawdust and woodchips are byproducts of making boards out of logs. In the past, this "waste" was burned. Today, these valuable tree parts are used to make paper, particle board and other products. They can also be burned for energy to run and heat the mill, or sell to the power company. Your house might get energy from wood "waste."



PLANTING FOR TOMORROW

To keep a forest going, you've got to keep it growing! Trees are a renewable resource. We can plant more for the future. Idaho forests are protected by a law called the Forest Practices Act. It requires that after trees are cut in a forest, new ones grow back or are planted. That way wildlife has a place to live, and there will always be trees for people to use. The law also requires that streams and rivers in the forests are protected. They must be kept cool, clear and free of dirt from logging. By using the Forest Practices Act as a guide, Idaho foresters keep our forests healthy and growing.





LEWIS



CLARK



Before 1805

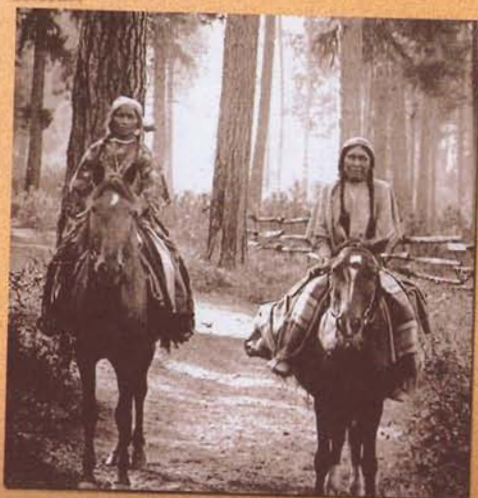
1805- 1890

People and Idaho's Forests

People have appreciated Idaho's forests for hundreds of years. Native Americans hunted and gathered food in the forest. Early explorers and settlers needed wood to survive. As America grew, its people needed even more lumber and wood. Businessmen built sawmills to make lumber. Other kinds of mills made other wood products. Many people had jobs in the forest industry. Forest workers also cared for our forests, including fighting fires.

Native Americans and the Land

The Shoshoni, the Kootenai, the Nez Perce, and other native people hunted, fished, and gathered food from the land. They were active land managers and often set fires to allow grass to grow for their horses and to grow forest crops.



The Discovery

The 1805 journals of Lewis and Clark show that they used Idaho's trees. They made campfires and built dugout canoes for their journey to the Pacific Ocean. Native Americans had done this for centuries.

The Oregon Trail brought settlers to Idaho. In 1840 missionary Henry Spalding started a settlement near what is now Lewiston. He built a water-powered sawmill to provide lumber to help build a community. This was the first sawmill in Idaho.

Many people came in the mid-1800s. Gold had been discovered here. By 1868, the Idaho territory was the shape that the state is today. The population was less than twenty thousand people. This changed quickly as railroads were connected to the Idaho territory. Trains and paddlewheel boats needed firewood for their steam engines. All the people in Idaho depended on wood for their daily lives. By 1890 the population of Idaho was almost ninety thousand people.



500 FEET OF LOGS HAULED BY THE RAILROAD FROM BERTHA HILL



1890-1910

In July 1893 Charles Odell Brown came to see Idaho's famous forests. He had been a timber worker in the eastern U.S. for many years. He guessed that there were 500 million ponderosa pine in southern and central Idaho. However, the great forests of western white pine in the north impressed him the most. He worked to bring timber companies to Idaho.

Getting Down To Business

Idaho became a state in 1890.

By that time, much of the open land had been claimed for homesteads. New arrivals claimed wooded land instead. Stories of Idaho's great forests began to spread.

Soon there was a "forest rush" to own forested land in northern Idaho. In 1900 Idaho's population had grown to more than 160,000 people. That same year, Frederick Weyerhaeuser and Associates came from the Great Lakes area of America and started a timber company in Idaho. Other families and companies did the same.

The U.S. Government set aside large forested areas as "Forest Reserves" that became National Forests. The State of Idaho became responsible for forest lands, too. These lands were to be used to help support public schools.

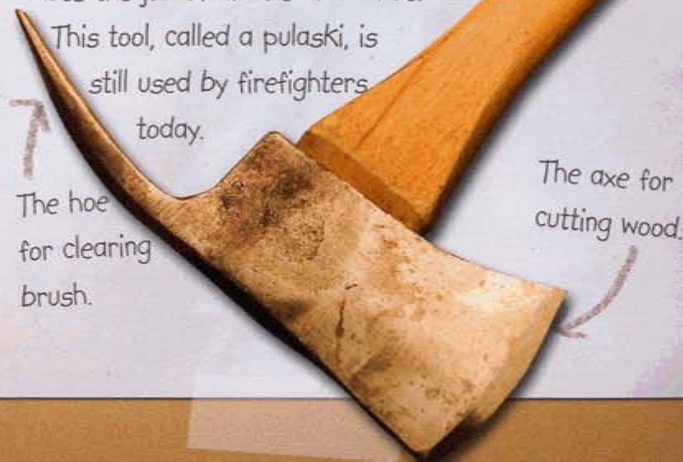
Within a few years Idaho had several new national forests. In 1906, a new sawmill at Potlatch, Idaho became the country's biggest. Idaho was becoming a leader in the nation's timber industry. Forests were valuable property, and firefighting efforts began. A snag (a standing dead tree) on Bertha Hill in the Clearwater River country was possibly the first fire lookout. A ladder was nailed to the side of the tree, and a platform was placed at the top.

In August 1910 a huge wildfire swept across the northern part of the state. It burned 3 million acres in two days. Dozens of people were killed. Sawmills burned down and the town of Wallace was mostly destroyed. A ranger named Ed Pulaski saved his firefighting crew. He made them stay in a mine shaft until the fire burned past them. Later he invented a firefighting tool that does the job of an axe and a hoe.

This tool, called a pulaski, is still used by firefighters today.

The hoe for clearing brush.

The axe for cutting wood.





1910-1960

The "King," 425 years old, 207 feet tall and several feet in diameter.



The Production Years

By 1910 the state population had doubled again to more than 320,000. People everywhere needed wood. The timber industry was booming. Frederick

Weyerhaeuser, Jr. declared that one western white pine, found near the current town of Bovill, was "the King of White Pines." It was cut down in 1911 because it was diseased and rotting. A bigger specimen of western white pine has never been found.

Times were changing.

To stay in business, companies had to change, too. Three of the companies that added more modern equipment were Potlatch Industries, Boise-Payette Lumber (later Boise-Cascade) and Diamond Match Company. Some companies started making other products, like paper and paperboard that is used for milk cartons and many other things.

Laser-guided saws with very thin blades get more dimensional lumber from each log.





Modern processes use smaller logs and wood waste to produce products like particle board, oriented strand board (OSB) and lumber.



Forest Management

Idaho's forests have become more valuable than ever, and not just for the trees. Attitudes about forests have changed. Early Idaho settlers worried most about their daily needs. They didn't think much about the future of their forests. Today, over a million people live in Idaho. They still need wood from the forests for building materials, paper products and fuel. But they also want the forests to provide places for recreation, wildlife habitat, clean air and water, scientific study and scenery.



To provide so many things, forests must be cared for well. Trees are harvested in certain areas. Foresters plan when to harvest trees, and what logging method is best. Roads are built to be safe and to protect water quality. Wildlife habitat, soil conservation, safety and tree planting are all part of forest management. Wildfires are sometimes allowed to burn. Sometimes they are put out. Today, businesses, government agencies and private landowners work together to sustain the health, beauty and production of Idaho's forests.

Present

Foresters are planting disease resistant white pine so that it can be "king" again someday.



the
IDAHO FOREST



WWW.IDAHOFORESTS.ORG