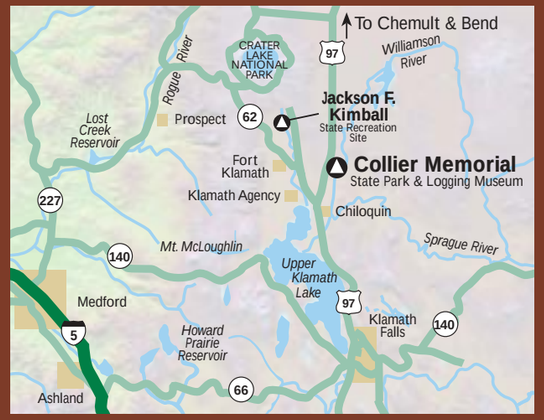

Collier Memorial State Park & Logging Museum
US 97, 30 miles north of Klamath Falls
(541) 783-2471; collierloggingmuseum.org

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Oregon State Parks by visiting
www.oregonstateparks.org

Oregon Parks and Recreation Department
725 Summer St. NE, Suite C
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Nature
HISTORY
Discovery

Collier Logging Museum

Tour Guide

PARK HISTORY

In 1945 Alfred and Andrew Collier of Klamath Falls gave 146 acres of land to the state of Oregon as a memorial to their parents, Charles Morse Collier and Janet McCornack Collier. That property today is Collier Memorial State Park.

The logging museum began in 1947 when the Collier brothers donated a collection of antique logging equipment. Their intent was to show the evolution of logging equipment from the use of oxen and axes to trucks and chain saws. Also spotlighted is the role the railroad played in the timber industry. The museum is recognized as having one of the largest collections in the country. The outdoor exhibits are open year-round, daylight to dusk. There is also a gift shop and information center (open in summer).

EARLY LOGGERS

The Pacific Northwest was covered with dense forests hugging steep mountains when it was discovered by those heading west.

Ore Wagon – built many pioneer roads.

Virgin stands of pine and fir with trees four or more feet in diameter and bark one-foot thick. Hudson Bay Company trappers trekked to Oregon in the early 1800's, soon followed by pioneers dogging the Oregon Trail from Independence, Missouri to the Willamette Valley. But it was the U. S. Army's arrival in Klamath County in the 1860's that brought the timberbeasts.

Those early logging crews often hailed from Michigan, Wisconsin and Minnesota, often bringing their specialized equipment with them. Other early loggers were sailors from Nova Scotia who had deserted their ships after sailing around Cape Horn. They added their invaluable knowledge of rigging to the logging industry.

The land was raw and so were the men who packed rustic logging camps. Two hundred men were crowded into small quarters heated by wood stoves with little to do once their 10-12 hour shifts were over but sleep or play cards. Socks and woolen underwear were washed in kerosene cans filled with water and then draped over every available surface to dry. Sunday was their one day off and it was often spent hunting. The logger's reward for hours of backbreaking labor was $30-$40 a month net, after paying for bunkhouse meals and clothing at the company store.

Men and oxen worked tirelessly. Methods and equipment were much the same as those brought by early settlers to the British Colonies in the 1660's. Logging was hard, sweaty and, sometimes, deadly work.

Logging camps were well-organized units. The "Bull of the Woods" (woods boss, camp superintendent or foreman) was in charge. The bullwhacker controlled the teams of oxen. The punchers spent their hours nailing on shoes (two plates to each cloven hoof), repairing the slings which went under the bull's bellies and yokes, which locked their heads together. The skid road builder laid out the roads.

Band Sawmill – rests in museum after 50 years of work.

These timberbeasts required mountains of food to fuel their hard work. Cooks prepared heavy, solid meals, often serving three or four kinds of meat at every meal. Men were called to eat with the cook sounding the iron triangle. Tables were kept set at all times and men had numbered places where they ate until full.

Fallers, working with axes as sharp as jackknives, prided themselves on the skill used to make undercuts which determined the direction the tree would fall. Fallers, having finished the undercut, would next saw halfway through from the back of the tree and drive in wedges to keep the blade free. Moments before the tree was to fall, the man with the stoutest lungs would bellow, "T-I-M-B-E-R-R-R-R-R-R." That cry and the subsequent crash could be heard for miles. Expert fallers could lay a tree on a dime.

Blacksmith Shop – a must for logging camps.

Buckers cut the felled trees into logs 16-feet long. Bucking trees was one of the more dangerous jobs since bucked logs easily rolled over when released from the rest of the tree, crushing men like match sticks. Crosscut saws, some as long as 14 feet and operated by two-men teams, were often not long enough to draw through the trees.

Felling axes and crosscut saws were vital tools. These tools had to be kept sharp, straight and clean by hand setting, swaging, filing and hammering the kinks out. Saw filers were a group to themselves, highly skilled, traveling from camp to camp. Some very fine examples of axes and saws are exhibited in the logger's homestead (#2) which serves as the museum's gift shop and information center.

WALKING THROUGH HISTORY– from oxen to horses to "cats"

Begin your visit at the gift shop. This turn-of-the-century cabin was originally a logger's homestead (#2). It was dismantled and reassembled at the museum. The inside displays include peaveys (levers with hinged hooks for rolling logs), felling axes, various types of barbed wire, survey instruments, kerosene lamps and a tobacco plug cutter.

Blacksmiths – forge metal into tools.

1860

Blacksmiths were indispensable and no logging camp could operate without one. This blacksmith shed (#3) is the type of shop which existed in early logging camps. In addition to the usual forge, anvil and bellows, there is a drill press and a collection of harnesses and yokes. In the northwest corner of the building is a sling used to hold draft animals to facilitate the shoeing process. Also note the shoeing stocks which were used to restrain animals.

From the blacksmith shop to the next exhibit, take a look at some of the early drag saws, forerunners to today's chain saws, and examples of early blades used to build roads.

The next three sheds (#4, #5, #6) house skidding and log transporting equipment.

Teams of oxen dragged huge logs, which had been freed of bark to make them slide easier, over pile-studded skid roads. The bulls were chained and yoked together, goaded into effort by bellowing men who could be heard for miles. Boys going into the woods for the first time were given the job of swabbing whale oil on the skids to help the logs slip. This was about the only help anyone gave the bulls. Oxen that had "accidents" could end up being dinner for the crew.

1880

In the late 1880's, the use of "high wheels" developed and wheel skidding became common. Examples are in shed #4. These wheels, 8-10 feet in diameter, could carry logs suspended under the axle. Grapple hooks were attached to logs and as oxen, and later horses, moved forward, the logs were lifted from the ground. The back end of the logs acted as a brake when the load moved down the steep grade. To drop the load, the action was reversed. In steep terrain, runaways were frequent.

Oxen either pulled skids of logs directly to mills or into water where logs were floated to the mill. Where the distance was greater, oxen-pulled wagons were used. In the 1880's horses replaced the oxen. They were faster, more easily handled and didn't have horns. In shed #5, note the four-horse log truck, the type most widely used in the area.

1900

About 1900 "stinger tongue" wheels came into use for short hauls. This rig had a tongue 8-10 feet long. In loading, the tongue pointed straight up while a chain was placed under the logs and then fastened to the rig. A pair of horses was hitched to the end of the tongue. A long chain pulled the tongue down level while the horses moved forward. When going down a steep grade, the tongue would fly up, acting as a brake for the load.

In 1910, "slip tongue" wheels, able to carry much larger loads, came into general use. A team of four horses, with the driver riding one of the horses, pulled wheels which were 10-12 feet in diameter. The tongue, 36-feet long, slipped through the axle about eight feet before the bumper. The end of the tongue came up against the axle to pull the load. As the tongue slipped forward, a connecting rod fastened to the tongue, pulled the staff forward and rotated the staff, which lifted the load.

1920

In the early 1920's, horses were, for the most part, replaced by gasoline-powered engines. The first models developed by Holt and Best were fueled by gasoline. These machines could travel faster, farther and carry heavier loads on steeper slopes much more economically than horses. The inventors merged their operations and adopted the Caterpillar Company name. Modern logging was born. Today, "cats" can travel over terrain unreachable by any other method.

The slip tongue wheels could be pulled with the 30 hp Caterpillars, operated by "catskinners." But, these wooden wheels were entirely inadequate for the 60 hp tractors. Now the increased horsepower meant longer logs and much heavier loads could be hauled. A log buncher (#39) which could move under its own power made things easier by bunching and decking the logs for the high wheels.

As can be seen in shed #5, wheels evolved into logging arches which are still used today. Arches were the first log transporting equipment designed to go from tree stump to railroad siding. These arches made high wheels obsolete by skidding up to 5,000 board feet at once. Arches can still be used on private land. They cannot be used in forest reserves because they often damage standing trees.

Logging arches with iron wheels 10-feet high were used with the 60 hp tractors. This Best Arch (shed #5) is thought to be one of the first used in this area. Large wheels straddled loads of logs and hydraulic cylinders raised the load from the ground. The Best Arch could not take the heavy loads and it was soon replaced by the Athey Arch (shed #5), built with a very heavy cast iron arch. It was hard to maneuver around trees but could carry loads up to ten tons.

The Athey Arch was superseded by a cast steel boom supported by struts or an arch which carried a fairlead. A Fairlead Arch (#57) utilized a winch and cable from the "cat" for lifting the front end of logs off the ground. The Fairlead system eliminated much of the log bunching cost. All of these arches lifted the front end of a load of 32-foot long logs, letting the rear of the load drag.

Gradually, blades were added to the front of tractors thus greatly simplifying road building. Now loggers and their equipment could go virtually anywhere. No longer would timber harvesting be confined to established roads or railroad lines. As costs associated with logging were reduced, it became more economically feasible to harvest stands in isolated forests.

Although some automotive logging trucks were used before 1920, it wasn't until 1930 that they became common. It soon became apparent that logging trucks (shed #6 and #56) could carry logs to sawmills much more economically than the railroad.

Most of the museum's equipment was used very successfully. One piece was not. Housed in shed #6 is the Glasscock Wheel. Purchased in 1923, these wheels were an experiment which failed. Designed to haul logs behind a "cat," they lacked strength and capacity and were soon phased out.

Very early in logging history, all logging was done near bodies of water because floating logs to a mill was usually the most economical, and sometimes the only method possible. Floating logs to mills is a method still used today. Located west of shed #6 is a tugboat (#7) which was owned and operated by O. K. Puckett. It is diesel-powered and towed logs from the Agency Lake Landing to Algoma Lumber Company, 22 miles south on Upper Klamath Lake, a trip which took 22 hours. It operated from April 1937-October, 1943.

WALKING THROUGH HISTORY– from steam to diesel to computers

Steam power and the invention of wire rope revolutionized log handling. Less men and fewer horses were needed to harvest timber.

In 1881, John Dolbeer of Dolbeer & Carson in Crescent City, California invented the original steam donkey. The Dolbeer donkey (#9) had an upright boiler which tapered into a stack with a single engine driving a vertical winch drum or spool from which the cable slack was pulled in hand-over-hand. A horse was used at first to pull the line out to the logs and became known as the "line horse."

At first, manila rope was used but it stretched, frayed and broke. In 1890, steel wire rope came into play.

The "GOP" steam logging locomotive.

Dolbeer Donkey being restored.

Another donkey engine (#12) is located near Building 18. Although the development of the Caterpillar tractor sounded the death knell for the steam donkey in many areas of the country, these donkeys were used in the Pacific Northwest and California as late as 1950. Their use gave rise to such colorful jargon as "ground lead," "high lead," "choker setter" and "whistle punk."

Contained in shed #18 is a steam locomotive, a steam tractor and an early steam engine. Steam tractors replaced horses, and were followed by gasoline and, finally, diesel tractors. These steam traction engines were used in the Klamath area logging pine and hauling solid wooden-wheeled wagons (like the one in shed #4).

The Case Steam Engine was purchased in 1878 to run a sawmill for several years. It was used by its original owner for 58 years.

The Westinghouse Upright Steam Engine was built in 1912 by George Westinghouse, the father of the founder of the Westinghouse Company. Note that it utilizes a V-belt drive, an innovation which did not become common for another fifty years.

As early as 1859 steam locomotives were loaded on ships destined for San Francisco. "Lokies," as the timberbeasts called these iron horses, didn't come into use in Klamath County until the 1890's. The early steam locomotives were light, about 10-15 tons, and direct-driven. These early engines had trouble climbing the steep grades hauling logs and in 1881 the Shay gear-driven engine was developed. Like a steel mountain goat, it could handle the steep terrain. Three companies built these gear-driven engines: Shay, Heilser and Climax.

But it was the arrival of the Southern Pacific in 1909 that brought fame and fortune to the Klamath Basin. Logs and milled lumber could be shipped anywhere in the United States. Spur lines carried millions of board feet of timber. Once the company was finished logging the area, the spur line would be taken out.

The steam locomotive in shed #18 is a Baldwin, which saw action near Mount Shasta, California. Nicknamed "GOP" (for "get out and push") because it derailed so often while hauling redwood logs in northwest California.

Before leaving shed #18, take a look at the sugar pine shingle mill, complete and ready to run. The old-growth sugar pine lumber harvest from this area was used for mouldings, paneling, furniture, ammunition boxes, construction lumber and caskets.

With the use of the steam donkey engines came "yarding" of logs. The yarding method has changed little since and is used in most areas of the Pacific Northwest to this day. A yarder (#43) is generally a diesel-powered winching unit that replaced the donkey. It is often used with a spar pole or steel spar tower (#41). Spar rigging adapted the rigging methods used on sailing ships to lift bucked logs skyward and land them, often with a smashing thud, for loading. Although it looks complicated, its use eliminated the many hours of manpower required to move logs weighing tons.

One of the more important and rarer pieces of equipment in the museum is the McGiffert Log Loader. There are two in the museum. The stiff-boom McGiffert is #17 and the quarter-boom McGiffert is #40. To see how the McGiffert worked, stop by the Weyerhaeuser Log Transfer display.

Steam powered, the McGiffert was designed by the timberbeasts to be state-of-the-art for its day. It was able to move on its own power on railroad tracks. The McGiffert hunched down on the ties, tucked its wheels up into its belly and moved the log cars through its innards into loading position. It was purchased in 1926 for $15,300 and used in the Klamath area until 1962. A crew of four could load an average of 250,000-300,000 feet of logs in a day and under ideal conditions, load 400,000 feet of logs in one day.

Restored Aultman-Taylor steam traction engine steamed up and ready.

Another rare piece of equipment is #44, a swing-boom Clyde Track Machine, believed to be one of only two in existence. The Clyde Track Machine is a steam-powered crane

Clyde Track Layer – one of the last of its kind.

mounted on a heavy railroad car. With its arms extending out over three cars, it could pick up a load of ties from the rear car, carry them forward and lay them down properly on the subgrade. It would then reach back and bring forward the rails and lay them down in the proper line, holding the weight until the fishplates were bolted. It was a very useful tool in the days when the railroad crept up every draw and then backed out and picked up its tracks behind it. It was used in various locations from 1923-1959, last seeing service with Weyerhaeuser in Klamath County.

Taking down trees and hauling them was only half of the logging operation. Sawmills were essential for turning raw trees and logs into lumber. As you progress through the museum, you will notice two areas devoted to sawmills. The band sawmill (#27) was donated by the Edward Hines Lumber Company and was in use from 1930 to 1980. The second is the steam plant (#48) and chain saw exhibit. The building was given to the museum by the Collier family in memory of Cap's and Andrew's uncle, E. P. McCornack.

"Stout Abner," the name given to this giant steam engine, was named for Abner Weed, the founder of Weed, California. Weed also had logging interests in the Klamath area and several other pieces of museum equipment were obtained from him. This steam plant supplied the power to the Long-Bell Lumber Company's sawmill from 1917 to 1964.

The chain saw collection in the exhibit is thought to be part of the most complete in the state. Chain saws were developed about 1920 but didn't really become popular until after WWII. The early models were so heavy and cumbersome to use that fallers and buckers preferred their axes and crosscut saws. But shortly before WWII, the German manufacturer Stihl began to make chain saws lighter and easier for one person to operate. However, WWII saw the end of their import into the United States, and it wasn't until the 1940's that an American chain saw manufacturer began to gain favor among the logging crews.

Two of the most modern pieces of equipment in the museum are the Sumner Sash Gang Saw (#51), and the Beloit Tree Harvestor (#54). The tree harvester is operated by one person and literally takes the place of an entire logging crew of 100 years ago. It shears the tree off near ground level, removes its limbs and stacks it for loading onto the logging truck. New models of this machine cost around $1 million and are now operated with the assistance of computers.

Before leaving the museum, take a few minutes to look at the giant logs near the park entrance. There are examples of Douglas fir (#49) and Ponderosa pine (#50). Plus, a section of the largest Douglas fir to be cut in Oregon (#60), a tree which was well established when Columbus landed in the new world.

Researched by Frank and Corinne Clifton

LIVING HISTORY

Keeping history alive; quilting, rugs, and reminiscing.

Come experience Living History Day and watch unique museum demonstrations of antique engines, live steam engines, and an operational old-time shingle mill. Talk with old-timers about the machines, their lifestyles, and their colorful experiences at this one-day annual event held each June. The air will be filled with the sounds of belching steam, grinding gears, the roar of rusty engines, and the chinking of horse harnesses to delight children and adults alike.

The coach is ready for a ride into the past.

Outdoor Logging Museum

1. Water Wagon
2. Logger's Homestead Cabin/Gift Shop
3. Blacksmith Shop
4. Storage Shed-Big Wheels "Cat" Tractor
5. Storage Shed-Crawler Tractor, Best Arch
6. Storage Shed-Trucks, Cats, Yoke Skidders
7. Tugboat
8. Crane
9. Dolbeer Donkey
10. Upright Pump
11. Steam Engine Pump
12. Steam Donkey
13. Donkey Sled and Snatch Block
14. Ground Hog Sawmill Engine
15. Horse Powered Drag Saw
16. Railroad Log Cars
17. McGiffert Stiff-Boom Log Loader
18. Storage Shed-Steam Locomotive, Engines
19. Tablesaw
20. Firehose Carts
21. 5th Wheel Metal Carts
22. Metal Wheel Logging Arch
23. Steam Engine Boiler Tanks
24. Double Drum Log Jammer
25. Water Wagon
26. Straddle Lumber Carriers
27. Steam Air Compressor and Band Mill
28. Drill Press
29. High Wheel
30. Hay Wagon
31. Water Keg Wagon
32. Ore Wagon
33. Lumber Carts
34. Austin Rip Snorter Pull Grader
35. Adams Pull Grader
36. Asphalt Wagon
37. Brush Packer
38. Snag Pusher
39. American Log Buncher
40. McGiffert Quarter-Boom Log Loader
41. Rectangular 80 Ft. Tower
42. Circular 90 Ft. Tower
43. Yarder/Reload
44. Clyde Track Layer
45. Wooden Road Compactor
46. Buzz Saw Table
47. Electric Railroad Car
48. Steam Plant Engine
49. Douglas Fir Log
50. Ponderosa Pine Log
51. Sumner Sash Gang Saw
52. Cut Off Circular Saw
53. McVay Log Loader
54. Beloit Tree Harvester
55. Logging Wagon
56. Log Truck
57. Fairlead Arch
58. McVay Log Loader
59. Log on Wood Sled
60. Douglas Fir Slab
61. Wood Logging Sled
62. Circular Sawmill
63. "Hidey Hole" Hollow Log
64. Hydraulic Logging Arch
65. Storage Shed for Caterpillars
66. Compressor
67. McCormick-Deering Cat
68. Horse Drawn Mower
69. Hay Rake
70. Plow
71. Stationary Hay Baler
72. Metal Wheel Tractor
73. Threshing Machine
74. Cat 60
75. Wire Cable

Pioneer Village

These authentic cabins were relocated here and filled with artifacts. The cabins show several construction techniques and a great difference in the amount of comfort needed.

A. Homesteader's Barn
B. Smokehouse
C. Explorer's Cabin
D. Trapper's Cabin
E. Outside Privy
F. Homesteader's Cabin
G. Sheepherder's Cabin
H. Neil Banta Log Cabin
I. Jim Redden Log Cabin
J. Sawbone's Cabin
K. Bear Flat General Store
L. Gilchrist Log Cabin