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United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

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NATIONAL REGISTER

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

A. Name of Multiple Property Listing

The Blodgett Tract

B. Associated Historic Contexts

1. Timber acquisition in the Pacific Northwest, 1890-1915
2. The U.S. Army Spruce Production Division
3. Railroad logging
4. Forest conservation efforts, 1935-1945

C. Geographical Data

The Blodgett Tract is currently a part of the Siuslaw National Forest in south Lincoln County, Oregon. The tract is located in T. 14 S., R. 11 W. and a portion of T. 14 S., R. 12 W. The western boundary of the tract generally followed the original line of merchantable timber along the coast in sections 23, 14, 11, and 2 in T. 14 S., R. 12 W. The northern boundary followed the northern boundaries of sections 1 and 6 and 5 and 4 in T. 14 S., R. 11 W. The eastern boundary follows the eastern edges of sections 9, 16, 21, and 28 in T. 14 S., R. 11 W. The southern boundary generally follows the valley of the Yachats River west to the coast.

Since the boundaries of the tract have not been fixed in historic or in modern times, and since the size of the tract has varied from 9000 to 18000 acres, boundary definitions must be regarded as approximate.

☐ See continuation sheet

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

Signature of certifying official — Date

State or Federal agency and bureau

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper of the National Register — Date

National Register of Historic Places Continuation Sheet

E. STATEMENT OF HISTORIC CONTEXTS

The Blodgett tract is currently part of the Siuslaw National Forest, in Lincoln County, Oregon. It was originally a 12,700 acre tract of timber assembled from the public domain by several midwestern lumbermen. The Blodgett Company of Grand Rapids, Michigan, owned the tract when the U.S. Spruce Production Corporation bought (or commandeered) it in 1918. Located in a remote area near the center of the Oregon Coast, the tract had its rather amorphous boundaries formed by patterns of land sales agreements rather than any geographical features. Although European and American settlement on this part of the Oregon coast dates back to the middle of the nineteenth century, the tract itself remained unsettled in 1918 when it passed into Federal ownership.

The history of the Blodgett tract connects with four themes important to the regional history of the Pacific Northwest. These include a) timber acquisition at the turn of the century, b) the U.S. Army's Spruce Production Division during World War I, c) railroad logging, and d) the forest conservation efforts in the 1930's and 1940's.

Material resources associated with these historical contexts include five railroad spurs built on the tract between 1918, when they were first surveyed by the Spruce Production Division, and 1926, when the last spur was completed by the Manary Logging Company. These spurs and some associated features were used to log the tract during the 1920's and early 1930's. The tract's merchantable timber was exhausted in 1934, and a large forest fire burned through the logging debris in 1936. Most of the wooden portions of the railroad spurs, including ties and trestles, were burned in the 1936 fire. In 1941, the Civilian Public Service crews planted trees on the tract. In the course of their work, they filled most of the burned-over railroad grades with crushed rock to adapt them for motor vehicle use.

Context 1: Timber Acquisition in the Pacific Northwest, 1890-1915

During the years between 1890 and 1915, lumbermen from the midwest, especially the "lake states" of Minnesota, Michigan, and Wisconsin, began moving their industry to the Pacific northwest. Although they were not the first industrial colonists in the western forests, the midwestern lumbermen were more successful

than those who came before them. Reasons for their success include their concentrations of capital, their use of railroad logging and marketing systems, and their nationwide network of sales organizations. Most of the midwestern lumbermen planned their enterprises as vertical organizations which included timber lands, transportation systems, mills, and marketing agencies.

The midwestern lumbermen assembled large tracts of timber from lands in the public domain during these years by methods which were often illegal. Favored methods of acquisition included the fraudulent purchase of state school lieu lands, Timber and Stone Act tracts, homestead claims, commuted homestead claims, and other expedients. By c.1905, the worst abuses had been identified and both state and federal prosecutors were indicting the worst miscreants. Among the lumbermen convicted of land fraud was C.A. Smith of Minneapolis, who assembled portions of the Blodgett Tract from state school lieu lands. Although the Blodgett Tract was not identified in Smith's prosecution, he lost his title to 40 similar properties in nearby Linn county.

In 1908, Stephen A. D. Puter, the "king of the Oregon land fraud ring" published his confessional book Looters of the Public Domain, which detailed his fraudulent activities with C.A. Smith. In 1914, the U.S. Department of Commerce, Bureau of Corporations, published their two-volume report titled The Lumber Industry. This report analyzed the concentration of timberlands--especially in the west--in the hands of a few owners, among whom were John Blodgett, C.A. Smith, John E. Du Bois, F.A. Kribs, and others involved in the Blodgett Tract.

John W. Blodgett, the final owner of the tract, purchased it from Smith in 1917 as a speculative venture. Although the tract was not highly regarded as a timber property by Blodgett or his advisers, it contained high percentages of Sitka spruce, which was enjoying a brisk market as a war material.

Context 2: the Spruce Production Division

When the U.S. entered World War I, lumber for shipbuilding and for aircraft production was recognized as a strategic material. During the summer of 1917, however, the west coast lumber industry was the scene of a massive confrontation between radical labor groups--especially the Industrial Workers of the World--and the mill owners. As a result, the industry produced far less lumber than its assigned goal, and the military intervened in the fall of 1917.

The agency to intervene was the Spruce Production Division of the Signal Corps, which had the dual assignments of remedying the labor situation and ensuring adequate production of spruce and fir. The S.P.D's commander, Col. Brice P. Disque, set up headquarters in Portland. He provided Army troops for duty in the northwest forests and mills when the mill owners agreed to 8-hour days and Army standards of food and accommodations in their camps. Since the troops' presence discouraged strikes or sabotage, the situation stabilized. Disque then created the Loyal Legion of Loggers and Lumbermen, an industry-wide organization of labor and management that endured until the mid-1930's.

To solve the production problem, Disque built a centralized remanufacturing mill at Vancouver, Washington. Spruce stumpage throughout the northwest was logged by contract loggers, and the lumber or cants were shipped to Vancouver for milling into aircraft dimension stock. As the nation-wide shortage of boxcars began to threaten this operation in the winter of 1918, Disque formed the Spruce Production Corporation which was to establish spruce mills on the Olympic Peninsula in Washington and in Lincoln County, Oregon. In the spring of 1918, the S.P.C. began building a mill in Toledo, Oregon, and a railroad towards the Blodgett Tract, which lay 27 miles to the south.

During the summer and fall of 1918, Disque negotiated with Blodgett for the timber on the tract, but Blodgett refused to let Disque log the tract. Although Disque had the power to commandeer the tract, he was forced to purchase it as real property, the only timber land purchased by the S.P.C. during its brief history. On November 8, 1918, the railroad was completed from South Beach to the tract. The S.P.C. was beginning to build its logging spurs on the tract when the armistice was signed on November 11.

Context 3: Railroad Logging During the 1920's

Between 1922 and 1929, the Pacific coast lumber industry developed rapidly. The national market for lumber remained strong, and production expanded each year. Although railroad logging technology had made its debut during the previous decade, it was during the 1920's that the huge centralized systems based on external-combustion technology grew to dominate the industry on the Pacific coast. Like all industrial systems, railroad logging left its imprint on the cultural, economic, political, environmental and social conditions of the areas it affected.

In 1919 the U.S. Spruce Production Corporation offered its properties for sale. The successful bidder for the Lincoln County properties was the San Francisco-based Pacific Spruce Corporation, which bought the Blodgett tract, the Alsea Southern Railroad, and the mill in Toledo. After the company was reorganized during the recession of 1920, it began logging the Blodgett tract in 1922. This required the construction of a permanent company "camp" near Waldport, Oregon, and the construction of five spur railroads into the rugged terrain of the tract. The first spurs (1 and 2) were built during 1922 and 1923, with spurs 3 , 4, and 5 following in 1924 and 1925. In the winter of 1927, the Manary Logging Company--the logging subsidiary of Pacific Spruce--was disbanded and logging on the tract diminished to a sporadic level. In 1934, the Pacific Spruce Corporation was sold at a receiver's auction, with the railroad going to a new owner, the mill remaining with the Pacific Spruce interests, and the Blodgett tract returning to Federal ownership. In 1936 the cut-over portions of the tract burned, and in 1941, the tract was included in the Siuslaw National Forest.

Context 4: Forest Conservation Efforts 1935-1945

During the 1920's and 1930's, the northwest forests suffered from careless logging, disastrous fires like the Tillamook Burn, and poor management practices. As the industry slowed down after 1929, cut-over land reverted to local government for property taxes, or was traded to the national forests under the tri-partite exchange plans. As surplus manpower became available later in the 1930's, the Civilian Conservation Corps was organized to provide forest conservation services.

In 1941, the C.C.C. built Camp Angell on the Siuslaw National Forest's newly-acquired Blodgett tract. The C.C.C. disbanded before reforestation got started on the tract, but a conscientious objectors organization, the Civilian Public Service group, moved into Camp Angell and began reforestation work in 1942. They continued to work on the tract until the end of the war, planting trees, building roads, and guarding against fires. In addition to their forestry work the C.P.S. were active in the arts, especially literary efforts, which they published on their own press. Several prominent west coast writers, including William Everson, Glen Coffield, Kenneth Patchen, and Jacob Sloan were interred on the Blodgett tract.

F. ASSOCIATED PROPERTY TYPES

II. Description

The extant resources on the Blodgett Tract related to the logging theme are the five railroad spurs built between 1918 and 1926. The spurs were surveyed by the U.S. Army and the Spruce Production Corporation in 1918. Approximately 3.6 miles of grade were built during 1918, but no rail was laid until the Manary Logging Company began its operation in 1922. Although the Manary Company followed the Army surveys on most spurs, they chose different routes on spurs 2 and 5.

The rugged terrain of the Blodgett Tract dictated some design characteristics for the railroad logging system. Extensive trestling carried the spurs over watercourse crossings and across terrain too precipitous for conventional earthwork. Johnson and Whisnant (1924) cite examples of track on the spurs that averaged 50% trestling. Field examination has confirmed their estimate.

Features

1) Roadbed

The spurs on the Blodgett Tract were built as temporary spurs of the Alsea Southern Railroad, which ran from South Beach, on Yaquina Bay, to a point c.1 mile beyond Camp One, near Waldport. The spurs were designed to be temporary, serving as long as the timber they reached was being cut. There was no reason for extending the life of the spurs beyond 3-4 years, since the logging practices employed on the Blodgett Tract did not provide for selective cutting or a sustained yield. Construction standards were appropriate for temporary service, and evidence from contemporary accounts establishes that the rail was removed from the spurs as soon as their timber was exhausted (Lincoln County Leader May 8, 1930). This was the conventional practice within the industry.

Blodgett Tract Spurs

Spur	Length	Survey	Grading	Complete	Remarks
Spur 1	1.6 mi.	1918	1918	1922	first logging
Spur 2	0.3 mi.	1918	1918	1922	spur of 1
Spur 3	5.2 mi.	1918	1925	1925	
Spur 4	8.1 mi.	1918	1918	1923	extended 1933
Spur 5	7.6 mi.	1918	1926	1926	not built to S.P.D. survey

Walter Mason Camp (1904) remarks that a civil engineer's three considerations in railroad construction are gradient, curvature, and drainage. Standards of gradient on the spurs were more extreme than standards for the main line of the Alsea Southern. Grades ran as high as 7.3% and curves ran as sharp as 14 degrees/100'chord. No adverse grades were found on the spurs, however. The extensive trestling, which solved the drainage problem, solved the gradient problem as well. Deep cuts and fills, which are used to maintain the gradient on most railroads, are rare on the Blodgett spurs, since trestling was more expedient than earthwork. On the extant portions, the depth of cuts does not exceed 8' and the height of fills does not exceed 6'. The material of the roadbed is earth, and the ballast material was sand, according to historic accounts (Inventory of Properties 1919). None of the ballast remains visible.

2. Forks, Switchbacks, Wyes, and Sidings

Forks, switchbacks, wyes, and sidings are configurations of track that enabled the loggers to operate their equipment on the spurs.

A fork is essentially a spur of a spur--i.e., a branch off a spur line that taps a stand of timber out of reach of the main spur. Spurs 3, 4, and 5 were built with forks incorporated into their design. Spur 3 forks in section 12 (T.14s R.12w), spur 4 forks in sections 18 and 16 (T.14s R.11w), and spur 5 forks in section 30 (T.14s R.11w) (Map AS-23 1918). In addition, there are short forks on several spurs that were added as the spurs were built. These are found on spur 3 in section 13 (T. 14s R. 12w), on spur 4 in section 16, and on spur 5 in sections 19 and 30 (all T.14s R.11w).

Switchbacks were built to enable a locomotive to negotiate terrain too steep for conventional road building practices. The switchback has a lower and an upper leg contoured into a hill with a switch connecting the two legs. The locomotive advances up one leg, switches, and then backs up the second leg. A switchback was located on spur 4 in sections 20 and 21 (T. 14s R.11w).

Wyes were features which enabled the locomotives to turn around. They were configured as a triangle of track which permitted the locomotive to advance over one leg, switch and reverse over the second leg, then switch and advance over the third leg. Wyes were located on spur 4 in section 16 and on spur

5 in section 30 (T.14s R.12w). At Camp One on the main line of the Alsea Southern was a large wye that served the entire system.

Sidings were parallel lines of track built to switch cars or locomotives off the spur for loading or temporary storage. Sidings appear in historic photographs of the spurs, although none was identified in the reconnaissance.

3. Trestles

Logging railroad trestles were of two types, the vertical bent trestle and the horizontal or cribbed trestle. The vertical trestles were larger, both higher and longer, than the horizontal. Vertical trestling is also characteristic of more permanent installation, although it was used as a temporary form of trestling on the Blodgett spurs. Photographic evidence suggests that trestles of both types were built on the Blodgett spurs, but the reconnaissance found no extant trestles on the tract. The fire of 1936 burned the trestles, and any remains deteriorated rapidly in the warm moist coastal climate.

Vertical trestles were built with a pile driver, which drove the vertical members of each bent into the soil (Johnson and Whisnant 1924). This practice differed from construction practices on other railroads, where the bents were set on concrete, stone, or timber pads to protect them from contact with the soil. Horizontal trestling was built from logs laid across each other on the ground. This type of trestling was subject to rot from contact with the soil as well as stress from the weight of the railroad equipment.

4. Camp

The main camp for the logging operations on the Blodgett Tract was Camp One, located off the tract in section 14, T.14s R. 12w. Johnson and Whisnant (1924) refer to a second camp, which was composed of railcars on spur 1. Archaeological evidence of this camp may remain.

5. Landing or Donkey Setting

At suitable points along each of the spurs donkey engines were set to log using the skyline or "swing" system. As described by Johnson and Whisnant (1924) this system required three donkey engines and used a head spar tree near enough to the railroad line so that a McLean boom could be used to load log cars or

disconnected railroad trucks. Two donkey setting sites remain discernible. These are both located in section 30 (T.14s R.11w) on the portion of spur 5 that was not burned in the 1936 fire. On each site, the donkey sleds remain in place.

6. Incline

The logging incline was a radical device which lowered a railcar down a very steep grade by a winch or donkey engine. Inclines were never common, but they enjoyed a vogue during the 1920's, especially in the coast range of Oregon and Washington. One contemporary source suggests that inclines were less expensive to build and operate than switchbacks (McGillicuddy 1921). Grades on inclines from logging operations throughout the west ranged from 10% to 68% (Cowling 1926). Spur 5 had a short (c. 1000') incline with a grade of c.28%. A donkey engine was used to raise and lower the railroad trucks on the incline. Evidence of wreckage at the bottom of the incline shows that at least one set of trucks went off the end of the track.

7. Artifacts

Artifacts found along the spurs include railroad and logging related debris.

Railroad-related:

Rail Steel rail in 20 foot sections is found on spur 5, especially in section 30 (T.14s R.11w). Rail dimensions are base width 4 3/8", height 4 1/4", width of head 2 3/8". This conforms to A.S.C.E. standard 60-pound rail (Weitzman 1980).

Ties Ties that escaped the 1936 fire are limited to spur 5, and are now submerged beneath the forest floor. Dimensions were apparently the conventional 8"x8"x8'.

Spikes Rail spikes are a common artifact on all railroads. Those from the Blodgett Tract are too rusted to measure accurately, but they appear to have been 5 3/4"x1/2" square, a common dimension.

Anglebars Also called "fish plates," these common items of railroad hardware were used to join pieces of rail.

Trestle Hardware Spikes and bolts used in trestle construction remain in place on several sites. They are too rusted to measure accurately.

Logging-related:

Donkey sleds These log structures were used to mount the donkey engines. They were manufactured in Toledo, and were transported to the Blodgett Tract by rail. Once on the ground, the donkeys could move into position by winching themselves along the ground. Sled dimensions average 50' long and 14' wide.

Cable Cable was needed for yarding and loading logs, as well as other uses in construction. Dimensions range from the 2' (diameter) cable used for the skyline to material as small as 1". Cable ends were finished by splicing or by poured zinc sockets.

SIGNIFICANCE

The material resources on the Blodgett Tract conform to N.R.H.P. significance criteria A (association with events significant in the broad pattern of our history), C (embody a distinctive method of construction), and D (may be likely to yield information important to history).

Context 1 relates the tract to the midwestern lumbermen who wrested it from the public domain and then sold it back to the Federal government at a final profit of $47/acre (Puter 1908; Disque Papers 1918). Their business practices skirted the law, and in many instances led to prosecution and conviction for land fraud. Whether the Blodgett Tract was in fact acquired by extra-legal means is beyond the proper scope of this discussion, but its association with land speculators of regional and national notoriety is clear.

Context 2 relates the tract with the U.S. Army Spruce Production Division and the U.S. Spruce Production Corporation. These agencies of the government bought the tract from John W. Blodgett in 1918 and built the Alsea Southern railroad (S.P.D Railroad XII) to reach it. The routes of the five spurs were surveyed by the Army, although spurs 2 and 5 deviated from the original surveys as they were built. Since the Blodgett Tract was the only timber land purchased by the S.P.C., the associations with this part of regional (and national) history are especially strong.

Context 3 is the railroad logging context, an important chapter in the industrial history of the Pacific northwest. Although the water-based cargo mills preceded the railroad-based

mills on the coast, the latter combined the technological advantages of railroad logging with the business advantages of railroad marketing. The result was a manufacturing and merchandising system that was particularly well suited to the American mood in the 1920's. Enormous quantities of timber could be logged, and the resulting lumber could be sold throughout the nation-wide rail network. The logging spurs built by the Manary Logging Company--a subsidiary of the Pacific Spruce Corporation--represent the extension of that system into an otherwise obscure corner of the west.

The civil engineering features and artifacts that are left on the Blodgett Tract are the material vestiges of a complex industrial system and the political, financial, and social sub-systems that it created. Without the industrial potential, the midwestern capitalists would not have coveted the tract, the Army would not have seized it, nor would the Pacific Spruce Corporation have risked its fiscal and human resources to log it.

Logging the Blodgett Tract shaped the settlement of south Lincoln County, and milling the logs into lumber ensured the prosperity of Toledo, Oregon, where the Pacific Spruce Corporation mill was located. Portions of the mill built there by the Army in 1918 are still in use as part of the huge Georgia-Pacific complex, and the Blodgett Tract itself--which was virtually abandoned when its timber was exhausted in 1935--now supports a second forest of merchantable fir, spruce, and hemlock.

REGISTRATION REQUIREMENTS

Railroads are nominated to the National Register as linear districts--i.e., as features which constitute a continuous route from point to point and preserve the characteristics of original construction. Few historic railroads remain with the rails and ties in place, but the characteristics of the grade and earthwork must remain essentially as they were built. Railroads deteriorate in predictable ways. The wooden parts rot or burn, the roadbed is modified for motor vehicles, and untended portions of the roadbed are overgrown by vegetation or washed out.

The spurs on the Blodgett Tract have suffered three major threats to their integrity. The first is the original construction standards, which featured soil roadbeds and extensive trestling. Soil roadbeds are easily overgrown or eroded, and unmaintained trestling weakens and collapses within a matter of years. Unlike main line railroads, the Blodgett spurs were not

built to last.

The second threat came from the forest fire of 1936. Forest fires are especially damaging to historic railroads since the wooden parts--trestles, road crossings, and ties--burn out. In addition, many railroad builders incorporated logs and stumps into their roadbed construction. These buried wooden elements also ignite during hot fires and burn out, leaving voids in the roadbeds which hasten their erosion (Tonsfeldt 1986).

Finally, the conservation groups modified the spurs for motor vehicle use. The modification consisted of building new grades around trestle sites and pouring tons of crushed rock on the original grades to make an all-weather surface. As a result, most of the spurs have been re-routed at trestle sites and buried under as much as 2' of rock surface.

The reconnaissance found spurs 1 and 2 to be overgrown to the point that they were no longer discernible for most of their route. Spur 3 has been converted to motor use for all of its length, with original contours retained only on a portion of the northern fork. Spur 4 is similarly modified. Spur 5, however, escaped conversion to a motor route. The lower portion of spur 5--below the fork--was burned in the 1936 fire, but the upper portion has one fork (section 30, T.14s R.11w) that has neither conversion damage nor fire damage. This is also the part of the system which has the highest concentration of features, including the incline and the extant donkey sleds. This portion of spur 5, then, is the remaining grade most suitable for nomination.

G. Summary of Identification and Evaluation Methods

Discuss the methods used in developing the multiple property listing.

☒ See continuation sheet

H. Major Bibliographical References

☒ See continuation sheet

Primary location of additional documentation:

- ☐ State historic preservation office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Specify repository: _____

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G. SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

Identification

Sites and features on the Blodgett Tract related to the railroad logging theme were identified from two sources--historic documents and field reconnaissance.

The original surveys for the spurs on the Blodgett Tract date back to 1918 when the Spruce Production Corporation prepared a logging plan for the area based on five spurs. These spurs were surveyed along major drainage on the tract from the Alsea Southern (SPC Railroad XII) into the timber. Portions of spurs 1 and 4 were graded, and portions of spurs 2 and 3 were cut out. Information about the original five spurs is available on map AS-23, which is an engineering map of the railroad logging system prepared by the Army in 1918.

The spurs were completed by the Manary Logging Company during the 1922-6 period. In several instances, the spurs built differed from the original surveys. Maps of the spurs as built are available in Palmer's Steam Towards the Sunset (1982) and in this reconnaissance. Palmer's data and the field reconnaissance data generally establish that spur 5 and spur 2 were conceived differently by the Manary company, and that spur 4 was more extensive than the original survey. Extensions to spur 4 include the extension into the quarry on Blodgett Peak, and a logging extension into sections 16, 20, and 21 (T.14s R.11w). Additional sources of historic information about the spurs include the S.P.C. sale inventory (1919), Johnson and Whisnant (1924), the 1936 fire map, and Palandri (1977-8).

The field reconnaissance involved walking the spurs out, noting their location, integrity, and condition. Spurs 3 and 4 are overlaid by motor vehicle roads for most of their length. Identification on these spurs consisted of separating the grades that were originally railroad spurs from the grades that were built as motor roads. Identification of the original railroad spur grades was accomplished by observing the earthwork. Railroad earthwork is more extensive than motor road earthwork, with deeper cuts, deeper fills, less sinuosity, and more constant grades. Historic data reveals that the controlling curvature on the main line and spurs was 16 degrees, a common standard in the industry. Controlling grade was 4% on the main line, but the spurs had grades above 7%. Measurement of curves and grades on the spurs

reveals that the curves seldom went above 12 degrees, but that the grades reached 7.3% or slightly greater.

A second method of identifying spurs that have been converted to motor roads is by artifacts associated with the railroad. Neither ferrous nor organic artifacts survive well in the damp warm climate on the Oregon coast. For this reason, such artifacts as tin cans, railroad ties, and trestle members, which are common on railroad logging sites in drier colder climates, are not available on the Blodgett Tract. Railroad spikes, rail, and trestle hardware are observable on some portions of the system, however.

Spurs 1, 2, and 5 are mostly free of motor roads. For spurs 1 and 2, however, the question of identification is academic since the spurs are situated in the lowest elevations of the Tract and are completely overgrown with thick vegetation. Traces of these spurs are visible, and much invisible earthwork no doubt remains, but the route and integrity of these spurs remain conjectural for most of their extent.

Spur 5, on the other hand, remains undamaged for its route up Starr Creek to its fork in the NW 1/4 of section 30 (T.14s R. 11e). The route of the spur has been obscured by vegetation, but the earthwork is visible on some portions, and the general trend of the spur is discernible from the ground and vegetation.

Integrity

Determining the integrity of the spurs on the Blodgett Tract is complicated by the extensive trestling during construction. Because of the rugged character of the terrain and the copious rainfall, the builders chose to use trestles for most watercourse crossings. The trestles had the advantage of being easy to level and not needing further provisions for drainage. On some portions of the system, trestles constitute 50% of the track (Johnson and Whisnant 1924). Both vertical-bent and horizontal or cribbed trestles were built. As all of the trestles have burned or rotted now, those portions of the system built with extensive trestling may have a low level of integrity. In some instances, as on the western end of spur 5, the roadbed remains as a series of short segments between trestle sites.

Other problems with integrity occur as a result of overlaying the road bed with a motor road. Where the motor road has been maintained with motor-graders, the blades have removed material

from the crown of the roadbed and distributed it on the edges. This effectively lowers the roadbed between cuts, increasing the grades and producing an undulating grade that is unlike the original.

Evaluation

The evaluation scale described below divides the roadbed into five condition classes:

Class A — Roadbed undamaged by human activities, ties in place and numerous artifacts associated with the site

Class B — Roadbed surface altered for motor vehicle use, but the dimensions, curves, and grades remain original.

Class C — Roadbed has been altered for motor vehicle use by removing ties and changing the dimensions of the original roadbed. Grades and curves remain in near-original condition but the roadbed has been widened and raised.

Class D — Only the railroad route remains. The roadbed has been altered by covering it with another structure along the same route.

Class E — No indications of the roadbed or its route remains.

Evaluating the condition of the remaining grades requires estimating the condition of the extant portions of the grades and then assigning a percentage value to the various condition classes. Where the damage to the roadbed has occurred by natural causes, as in the case of vegetation growing over the roadbed or trees destroying the earthwork, the condition value that corresponded most closely was assigned.

H. BIBLIOGRAPHY

Unpublished Sources

Clarke Beach Papers, Oregon Historical Society manuscript collection, Portland, Oregon.

Big Creek Fire Map, Waldport Ranger District, Waldport, Oregon.

Blodgett Papers, Bentley Library, University of Michigan, Ann Arbor, Michigan.

Camp Waldport File, Oregon Collection, University of Oregon Library, Eugene, Oregon.

Civilian Public Service Camps History File, Oregon Collection, University of Oregon Library, Eugene, Oregon.

Brice P. Disque Papers, Oregon Collection, University of Oregon Library, Eugene, Oregon.

Loyal Legion of Loggers and Lumbermen File, Oregon Collection, University of Oregon Library, Eugene, Oregon.

Map AS-23, Lincoln County Engineer, Newport Oregon.

Martin Volbrecht Papers, Oregon Historical Society manuscript collection, Portland, Oregon.

Periodicals

Lincoln County Leader

The Oregonian

The Oregon Journal

The Timberman

The American Lumberman

The West Coast Lumberman

Published Sources

Abbey's Register of the Western Lumber Industry.
1922-1942 Portland, Or.

American Lumbermen. Series 1-3
1905-6 Chicago: American Lumberman Press.

Beckham, S.D.
1986 "The Resource Center, Building 1381, Angell Job Corps Center, Waldport, Oregon: A Historical Assessment." Corvallis, Or.: Siuslaw NF.

Beckham, S.D., K.A. Toepel and R. Minor
1984 Cultural Resource Overview of the Siuslaw National Forest. Corvallis, Or.: Siuslaw NF

Brown, N.C.
1934 Logging: The Principles and Methods of Harvesting Timber in the US and Canada. New York: John Wiley.

Bryant, R.C.
1913 Logging. New York: John Wiley.

Camp, W.M.
1904 Notes on Track. Chicago.

Coman, E.T. and H.M. Gibbs
1949 Time, Tide and Timber: A Century of Pope and Talbot Palo Alto: Stanford University Press.

Cornwall, G.M.
1917 "Your Country and Mine." The Timberman July 1917 p.6.

Cornwall, G.M.
1924 Timberman Directory of the Lumber Industry. Portland: Timberman Press.

Cowling, H.G.
1926 "Logging Inclines," The Timberman August 1926, p. 37-40.

Cox, T.R.
1974 Mills and Markets: A History of the Pacific Coast Lumber Industry to 1900. Seattle: University of Washington Press.

Disque, B.P.
1918 "Address at the Opening of the Vancouver Cut Up Mill." The Timberman Feb. 1918 p.35.

Evans, G.F. and G.W. Williams
1984 "Over Here, Over Here: The Army's Spruce Production Division During the `War to End All Wars.'" Port Angeles, Wa. and Eugene, Or.: Olympic NF and Willamette NF.

Ficken, R.E.
1979 Lumber and Politics: The Career of Mark. E. Reed. Seattle: University of Washington.

Finucane, S.
1980 A History of the Blodgett Tract. Corvallis: Siuslaw NF.

Gates, P.
1968 History of Public Land Law Development. Washington,DC: USGPO.

Greeley, W.B.
1917 Some Public and Economic Aspects of the Lumber Industry. Washington DC: USGPO.

Hawkinson, R.L.
1928 "Wood in Airplane Construction." Timberman Feb. 1928 p.38ff.

Hays, M.H.
1976 The Land That Kept Its Promise: A History of South Lincoln County. Newport,Or.: Lincoln County Historical Society.

Hidy, R.W., F.E. Hill and F. Nevins
1963 Timber and Men: The Weyerhaeuser Story. New York: Macmillan.

Holbrook, S.
1938 Holy Old Mackinaw. New York: Macmillan.

Howd, C.R.
1924 Industrial Relations in the West Coast Timber Industry. Washington DC: USGPO.

Hyman, H.M.
1963 Soldiers and Spruce: Origin of the Loyal Legion of Loggers and Lumbermen. Los Angeles: Institute of Industrial Relations.

Jenson, V.
1945 Lumber and Labor. New York: Farr and Rinehart.

Johnson, B.A. and A. Whisnant.
1924 "Pacific Spruce Corporation and Subsidiaries." Chicago: Lumber World Review.

Labbe, J. and V. Goe.
1961 Railroads in the Woods. Berkeley: Howell-North.

Marsh, F.
1976 Twenty Years a Soldier of Fortune. Portland: Binfords and Mort.

McGillicudy, B.H.
1921 "Lowering Systems Vuesus Switchbacks," The Timberman. Nov. 1921, p.48.

Mead, W.J.
1966 Competition and Oligopsony in the Douglas Fir Lumber Industry. Berkeley: University of California.

Meany, E.
1935 "History of the Lumber Industry in the Pacific Northwest to 1917." Unpub. diss., Harvard University.

[McCollister, E.H. and R.S. Gill]
[1919] History of the Spruce Production Division. Portland: Kilham Stationary.

Morgan, A.W.
1959 Fifty Years in Siletz Timber. McMinville, Or. News-Register Press.

Oakleaf, H.B.
1920 Lumber Manufacture in the Douglas Fir Region. Chicago: Commercial Journal Company.

O'Callaghan, J.
1979 Disposition of the Public Lands in Oregon. New York: Arno.

Palmer, L.
1982 Steam Towards the Sunset. Newport, Or.: Lincoln County Historical Society.

Palandri, G.
1978-9 "Waldport: An Interview with William Everson." Imprint:Oregon 5, 1978-9 p.5-29.

Prentiss, A.M.
1919 Spruce Helped Win the War. Portland.

Puter, S.A.D.
1908 Looters of the Public Domain. Portland: Portland Printing House.

Rock, J.
1985 "Railroad Logging: A Capital Resource." Journal of New World Archaeology. 1985.

Schiffer, M.B. and G.J. Gumerman.
1977 Conservation Archaeology: A Guide for Cultural Resource Management Studies. New York: Academic Press.

Searles, W.H.
1942 Field Engineering: A Handbook of the Theory and Practice of Railroad Surveying, Location, and Construction. New York: Wiley.

Supernowicz, D., S. Tamez and J.T. Rock.
1987 "On the Track of Railroad Logging: A Design for Managing Railroad Logging Cultural Resources in Region 5." San Francisco: USDA Forest Service Region Five.

Tamez, S., J. Rock, S. Forsberg, P. Conners, D. Goddard, D. Supernowicz, D. Mosley, and W. Henn.
1982 "A Thematic Historic Railroad Logging Research Design." Contract Abstracts and CRM. 3, p. 35-51.

Tonsfeldt, H.W.
1986 "Huckleberry #1: Forest Fire Damage to Historic Logging Railroad Resources." Baker, Or.: Wallowa-Whitman National Forest.

Tyler, R.L.
1967 Rebels in the Woods: The I.W.W. in the Pacific Northwest. Eugene: University of Oregon.

Weitzman, D.
1980 Traces of the Past: A Field Guide to Industrial Archaeology. New York: Scribners.

U.S. Bureau of Corporations.
1914 The Lumber Industry. 2 vol. Washington DC: USGPO.

Van Dorn, H.A.
1926 Government Owned Corporations. New York: A. Knopf.

Wacherman, A.E.
1949 Harvesting Timber Crops. New York: McGraw-Hill.