

## THE LANDSCAPE AND THE ERA OF LUMBERING IN NORTHEASTERN WISCONSIN

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An understanding of the totality of the present landscape of northern Wisconsin requires an investigation of its era of primary exploitation. Wisconsin at one time led the nation in lumber production, and for forty years the industry dominated the commercial and industrial activities of the state. Although a passing phase of history, lumbering left a conspicuous mark on the geography of Wisconsin. The process of exploitation produced elements and patterns that shaped and molded the character of the present landscape. By its nature, the contemporary landscape asks the degree of influence the lumber industry had in its formation. The answer is not an easy one. The vast pine forests and the men who cut them are now scarcely more than memory. Man and nature have considerably altered or obliterated many of the original forms and patterns. While the full impact of lumbering has been obscured in the changing landscape, an examination of the present and its evolution still provides some measure of its impact.

The rivers divided the forests of northern Wisconsin into clearly defined regions with the major stream of each basin acting as the main thoroughfare of log transportation. Before railroad transportation became widespread, the rivers of Wisconsin formed six natural lumbering districts: the Green Bay and Wolf River districts in

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the northeastern part of the state, and the Wisconsin, Black, Chippewa, and St. Croix districts in the northwest.<sup>1</sup> The early history of northeastern Wisconsin largely concerns the development of the Wolf River basin (Map 1). This river system was an integral part of the mass exploitation of the pineries of Langlade, Forest, and Shawano counties and played an important role in the economic expansion of the tributary Fox-Winnebago area.

### *History of Lumbering*

The Wolf River pineries ranked among the finest in the state and the river became famous for the pine it produced. The employees of Daniel Whitney initiated the logging of these pineries in 1835 along the Rat River. In time more logging camps came to this region and at first the lumbermen rafted the logs to mills at Stockbridge and Neenah. The first sawmill on the Wolf appeared at the outlet of Shawano Lake in 1842.<sup>2</sup> In 1854 logs driven down the Wolf produced 40,000,000 board feet of lumber.<sup>3</sup> By the end of the Civil War, the Wolf River district ranked among the leading lumber producers in the state. During the early seventies the log cut ran between 150,000,000 and 200,000,000 feet annually.<sup>4</sup> With the depletion of the pine, however, production decreased 35,000,000 feet from 1874 to 1880 and in 1886 it dropped to less than 100,000,000 feet for the year.<sup>5</sup> In 1890 with the white pine almost gone, fewer and fewer drives came down the river. By the turn of the century, logging on the Wolf was virtually over. The estimated production in the Wolf River district between 1835 and 1896 approached 5,000,000,000 feet.<sup>6</sup>

With the extension of main railroad lines northward in the late 1870's, the era of stream driving shaded almost imperceptibly into the age of rail

transportation. In most cases the rail-ways first served for the hauling of sawn lumber. The first logging railroads, most of them temporary, came into use with the depletion of pine near the streams. The increasing utilization of hardwoods, which water-logged and sank in water, further emphasized the movement of logs by rail and accelerated the use of the railroad. Near the turn of the century lumbermen began constructing logging lines and spurs into the forests. After the exhaustion of the white pine, hardwoods and rail logging prolonged the life of the lumber industry well into the 1930's. In 1940, the closing of the Thunder Lake Narrow Gauge, the last of the important logging lines, marked the end of the lumbering era.<sup>7</sup> In its wake, however, the industry left a significant mark on the geography of the Wolf River area.

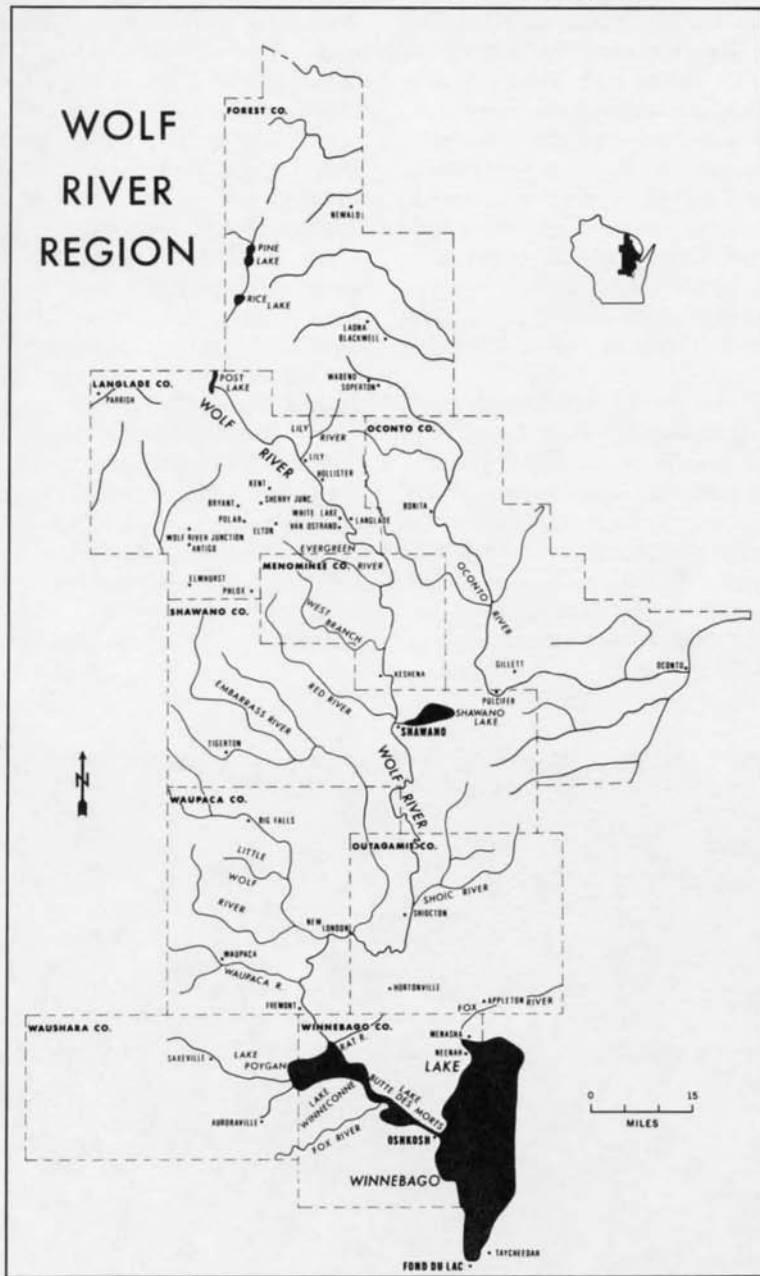
### *The Cutting of the Forest*

Virgin timber once covered nearly all of the Wolf River area. Today, most of the region consists of crop land and second growth forest (Plate 1). Almost the last vestige of virgin timber is gone (Plate 2). The appearance of this landscape asks how the area looked before the era of lumbering and how lumbering changed it.

Originally few barrens occurred along the Wolf and a mixed hardwood-conifer forest interspersed with solid stands of pine covered most of the region. Langlade county contained a continuous mixed forest of hardwoods and hemlock with scattered and dense patches and belts of white pine. A heavy forest of pine mixed with hemlock and hardwoods covered over half of Oconto County, while a forest of almost pure pine extended through the central part of the county. The northern part of the county contained a heavy conifer-hardwood forest with

# LOCATIONAL MAP

## WOLF RIVER REGION



RER

MAP 1

pine individually scattered or in small bodies. A heavy forest of pine mixed with hardwoods covered southeastern Shawano County, pure pine dominated the area surrounding and north of Shawano Lane, and a very heavy mixed forest of hardwoods, hemlock, and pine covered the northwestern part of the county. Most of northwestern Forest County consisted of a flat, swamp pinery, while a mixed hardwood, pine, and hemlock forest covered the remainder of the county. Numerous bodies of almost pure pine interrupted and dotted this mixed forest.<sup>8</sup>

By the close of the nineteenth century the northern forest showed the effects of lumberings. Most of the mixed forests no longer contained pine, and the greater part of the pine forest no longer stood. The fires following most logging operations aided the axe in altering the forest. The careless logging of the time was an invita-

tion to the flames. The loggers removed only the choicest pine, leaving on the forest floor great heaps of branches and tops known as "slashings." With the advance of settlement and sawmills into the forest region, the danger of fire increased. In 1871, the Peshtigo fire, which centered on the lumbering town of Peshtigo, burned millions of feet of standing timber, swept away whole villages and took the lives of 1,500 people.<sup>9</sup> The pine damaged on the Wolf, Shioc, Embarrass, and Red Rivers alone amounted to 50,000,000 feet.<sup>10</sup>

One or more fires swept through the slashings on most of the logged areas. These fires produced significantly different effects than the earlier fires of the Indians. The accumulations of tops and branches left by the loggers increased their intensity. Moreover, in clear cutting the loggers removed most or all of the seed trees, some of which ordinarily would have persisted in pro-



Plate 1. Oconto County second growth. This picture taken along County Trunk T illustrates the typical forested area of the upper Wolf River area of today. (Author, 1970.)



*Plate 2. Virgin Stand—Menominee County—Sec. 16, Township 30 North, Range 15 East. One of the few remaining examples of the original forest. (Author, 1970.)*



tected places. In some areas the repeated fires left large tracts of bare waste or stump prairies, covered only with weeds, grasses, and scattered scrub oak, aspen, and white birch (Plate 3). The combination of a fire-degraded soil and a lack of pioneer conifers, like red and white pine, caused the successions following lumbering to be very different from the original.<sup>11</sup>

A striking feature of the post-lumbering forest was the great increase of aspen and jack pine, the acreage of both being very small in the original forest. The almost entire disappearance of white pine and the great reduction in acreage of northern hardwoods was also notable. In most cases the jack pine replaced the red (Norway) pine on the light sandy soils, while aspen replaced the white pine on the better sandy soils and in large parts of the mixed forest. In some areas of light sandy soils, the repeated fires enabled scrub oak to replace pine<sup>12</sup> (Map 2).

The wooded, semi-wooded, brush, and burned areas of the Wolf River region represent the heritage of the lumbermen. Although the northern forest of today contains tracts of good second growth maple, birch, hemlock, and some pine, much of the region consists only of aspen, jack pine, and scrub oak.

#### *River and Lake Improvements*

For many years the major form of log transportation in the Wolf River area was stream driving. This method of log transportation simply involved moving logs by floating them in loose aggregations down the waterways, using the power supplied by natural or flushed stream flow.

Many of the rivers and streams offered serious obstructions to log driving in their natural state. These

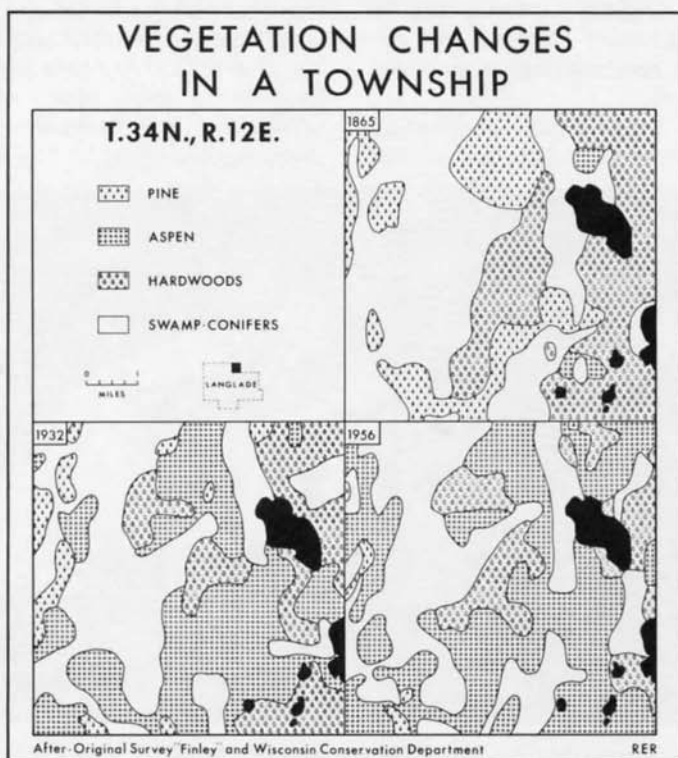
obstructions might consist of boulders, rock-strewn rapids, narrow gorges, waterfalls, sandbars or accumulations of driftwood and fallen trees. As the lumber industry expanded, improvements in the streams became necessary to assure successful driving. Below Shawano the Wolf contained few hindrances to log driving, but the crystalline rocks in the upper reaches of the stream gave rise to some serious obstacles. Large through the efforts of the Wolf River Boom Company, organized in 1857, and the Keshena Improvement Company, organized in 1866, the entire Wolf River became an excellent driving stream.<sup>13</sup>

The majority of the improvements on the Wolf secured head for artificial freshets. The most common logging dams consisted of a cribwork of logs or timbers filled with stone and gravel and sluiceways to carry logs over the dam. A sluiceway consisted of heavy timbers laid at an angle of about 20 or 30 degrees and held in place by stone-filled cribs (Plate 4). After the Civil War, lumbermen constructed over forty dams on the upper Wolf and its tributaries to aid log driving (Map 3).<sup>14</sup> In Langlade County the lumbermen constructed the Upper Post Lake Dam, the most important dam on the river. The waters from Upper Post Lake formed the principal reservoir for log driving on the entire Wolf south of it. The flood started in Upper Post Lake and until the logs neared Shiocton they depended on flushed flow from above to move them.<sup>15</sup>

After the last log drives, some logging dams continued to be used for water storage, power, or dam sites, but many were simply abandoned. Many of the reservoirs formed by logging dams, however, still dot the landscape. In most cases the original dam is gone, and the reservoirs now serve the tourist, vacationer, or sportsmen rather



Plate 3. Stump Prairie—Langlade County—In some cases repeated fires left a degraded soil that can support only a meager vegetation of short grasses and some shrubs. (Author, 1970.)



MAP 2

than the lumbermen. Chute Lake, Post Lake, Roberts Lake, Reservoir Pond, Townsend Flowage and many others originated as the impounded waters of a logging dam.

While much of the river driving era is lost in time, the lumbermen left a legacy of place names. Boom Bay, Boom and Little Boom Island, Gilmore's Mistake, Peavey Falls, Hansen's Rips, Sullivan's Rapids, Twenty Day Rapids, and Gardiner Dam along the Wolf are just a few of the many names that originated during the logging era. In addition, evidence of the logging dams still rewards the careful searcher along the headwaters of the Wolf and Oconto rivers. On the Wolf alone remnants of small impounding structures and dams occur at fifteen different sites along the main stream.<sup>16</sup> Especially on the smaller tributary streams much of the original dam may still be seen, hunting, moss-covered and decaying, mute reminders of a past era (Plates 5 and 6).

To get the logs to their destination in the shortest time and at the least ex-

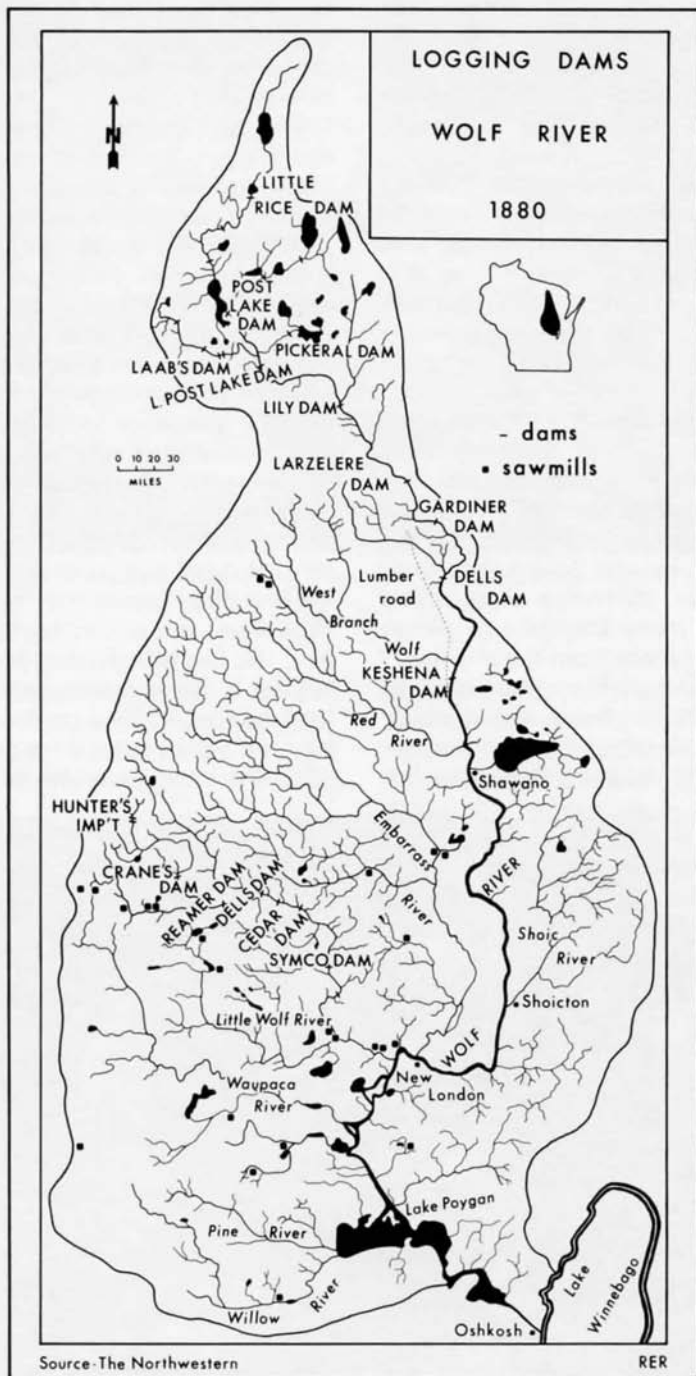
pense the lumbermen found various improvements in addition to dams necessary. As early as 1866 sixty men traveled to the upper Wolf to deepen the channel, blast out rocks, close up side cuts, and build wing dams and side booms.<sup>17</sup> Between 1870 and 1880, however, spurred by the retreat of the timber line northward, the greatest advance in the improvement of the upper Wolf took place to enable the lumbermen to continue using the river for driving logs to Oshkosh.

The accumulations of driftwood and fallen trees that covered portions of the riverbed for miles required large crews of men to remove them. At a narrow spot formed by rock ledges near the Menominee-Langlade County line, large boulders overgrown with cedar covered the river. For a suitable channel for log driving, the lumbermen cut out the cedar and blasted out boulders for approximately one-quarter of a mile.<sup>18</sup> Another significant improvement took place at the Dells where the Wolf flows through a deep, steep-walled gorge. The Dells were



Plate 4. Logging Dam on the Little Wolf River, Waupaca County, 1890's. (Courtesy Oshkosh Public Museum, Oshkosh, Wisc.)





MAP 3

originally only about sixteen feet wide and a log going through sideways could lodge and form a log jam. The improvement company blasted the Dells almost four feet wider to prevent this (Plate 7).<sup>19</sup> At Keshena Falls, however, the lumbermen made perhaps the greatest single improvement on the Wolf. The granite ledges here sent the river in sharp twists and turns that hindered log driving. The lumbermen build a dam and its waters released at flood height carried the logs safely over the falls.<sup>20</sup>

Parts of the upper Wolf originally contained many large boulders up to ten feet in diameter that impeded log driving. In improving the river from Smokey Falls to just north of Langlade, the improvement company constructed over thirty-five wing dams and blasted many boulders to pieces and removed them from the channel.<sup>21</sup> In all the company blasted out and removed boulders from about thirty miles of the riverbed. The lumbermen had removed most of the rocks be-

tween Keshena and Gardiner Dam by the end of 1878, and by the fall of 1879 the river was moderately clean from Post Lake to Oshkosh.<sup>22</sup>

The lumbermen also made significant improvements in some of the lakes to aid log driving. Most often these improvements took the form of canals or cuts to enable logs to be driven between a lake and a driving stream. In 1872 low water prevented driving logs out the usual channel between Shawano Lake and the Wolf River so the lumbermen cut a canal of about a quarter-mile long.<sup>23</sup> As late as 1909 lumbermen excavated a canal out of Shawano Lake because the natural channel was too crooked for the logs to move down easily.<sup>24</sup> The most important canal dug to facilitate log driving was the "boom cut" between the Wolf River and Boom Bay in Lake Poygan. The bay offered excellent facilities for the holding, sorting, and rafting of logs, but originally a narrow stretch of lowland separated it from the river. In 1858 the Wolf River Boom Company



Plate 5. Remains of Farm Dam—McCaslin Brook—Section 34, Township 33 North, Range 16 East. (Author, 1970.)



Plate 6. Remains of Knowles Dam—North Branch of the Oconto River—Section 5, Township 33 North, Range 16 East. (Author, 1970.)

excavated a canal eighty feet wide and six feet deep between the Wolf and the bay. The cut, bounded by dredge banks, was a mile and a half long (Plate 8).<sup>25</sup>

When logging took place on a large scale with several companies driving logs on the same river, the logs became mixed which necessitated their holding and sorting at some point above the mills. On the Wolf lumbermen constructed intermediate and terminal facilities to handle efficiently the thousands of logs that came down the river each year. Although the booming facilities on the Wolf were not the largest in the state, they were among the most complete. The river contained extensive works including detaining booms between New London and Oshkosh and large booms, sorting, and rafting works in Lake Poygan (Map 4).

The four store or detaining booms on the Wolf began about two miles above the mouth of the river. They

consisted of a row of piling driven into the riverbed parallel to the bank and hung with boomsticks. At the head of these booms a sheer boom slanted across the stream to guide the logs into the boom. The lower end of each boom contained a swinging boom to allow the logs to move downstream when necessary. When rafting began at Boom Bay, the boom company opened the storage booms one at a time and drove the logs down stream and into Lake Poygan, which contained two immense booms.<sup>26</sup>

In some cases to improve the waterways, the lumbermen made relatively permanent changes in the landscape by cutting short canals across bends or between lakes and streams, by straightening channels, by clearing away rocks and driftwood, and by blasting gorges wider. The best insight into nature and extent of these improvements is a visual comparison of a portion of a river improved for logging with a section not improved (Plates 9 and 10). Yet, in



Plate 7. Dells of the Wolf River. Note the angularity of the rock where blasting took place. (Author, 1970.)

many instances, as Boom Bay illustrates, the impact of lumbering as nature reclaims its own or as a new cultural impact masks the identity of the former (Plates 11 and 12).

### *Rail Transportation*

During the first phase of lumbering, white pine and river driving dominated the activities of the industry. With the exhaustion of the white pine along the streams and the increasing utilization of hardwoods, however, the railroad assumed importance as a means of transportation. The foundation for the first lumber-carrying railway came in 1860 with the building of the Chicago and North Western from Oshkosh to Green Bay. With its extension in 1871 to the Menominee River, the Wolf River district, along with the entire eastern pinery, obtained an outlet to western markets.<sup>27</sup> The use of the railroad brought revolutionary changes to the logging and milling branches of the lumber industry. The railroads enabled

the industry to exploit new timber resources and develop new markets. Before rail transportation the lumbermen located their sawmills on the banks of some river or stream. The logs came down the river into the booms and during the spring and summer the mills, using power supplied by the stream, cut them into lumber. The Wolf as a good driving stream produced a fairly centralized pattern of lumber manufacturers with a concentration of mills (steam) around Lake Winnebago. The rest of the area with its numerous water-power sites and local market orientation resulted in a relatively even distribution of small, water-powered sawmills (Map 5). Gradually, with the decline of white pine, the smaller mills and those at less favorable sites disappeared. In the late 1870's most of the mills in the towns around Lake Winnebago except for Oshkosh closed down.<sup>28</sup> The mills at Oshkosh, situated at an especially favorable location and backed by larger capital, managed to

survive. In the 1870's many mills lacked rail transportation. From 1863 to 1870, the North Western carried only about 95,000,000 board feet of lumber to Chicago from the Green Bay and Wolf River pineries.<sup>29</sup> More and more, however, mills not located on a railroad found it increasingly difficult to compete with mills having rail facilities. With receding forests, mill owners in Oshkosh found that driving logs down the Wolf brought diminishing profits. By the 1880's, mills began to disappear from their old location, moving north with the extension of the railroads. In 1885, some mills still lacked rail access but a growing concentration of mills along rail lines was evident (Map 6). The major center of production remained at Oshkosh only because of its excellent rail facilities. The 1890's saw all the major clusters of mills and most individual mills located along railroad lines (Map 7). In 1892 mills along the Milwaukee, Lake Shore and Western Railway alone produced over 400,000,000 board feet of lumber.<sup>30</sup> After

the turn of the century came a tendency toward fewer but larger mills at points with good rail facilities in the timber regions (Map 8).

Besides modifying the spatial characteristics of lumber production, the development of rail transportation released logging operations from a dependence on the weather and enabled the year-round sawmill to replace the seasonal mill. The railroad also enabled a more direct transportation of the product to market and encouraged the milling of the logs as close as possible to the area of cutting. Correspondingly, the number of portable mills increased.

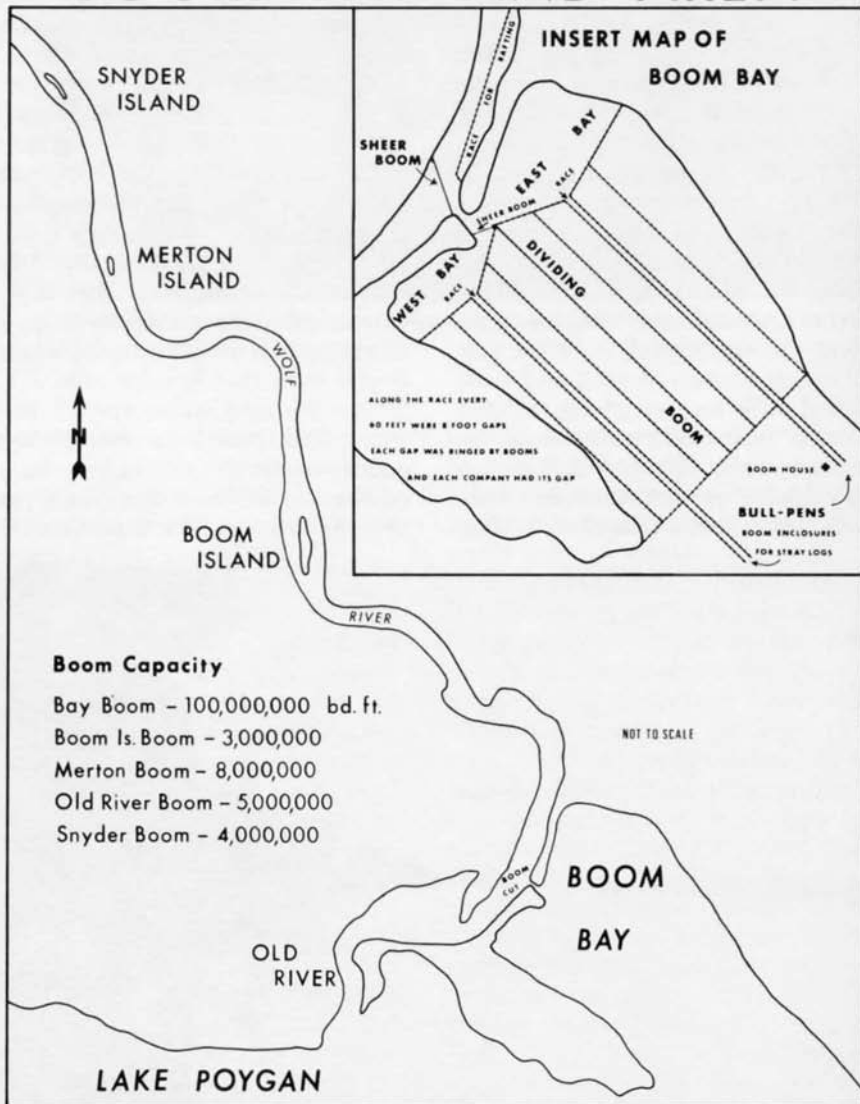
Some lumber companies built private railroads to log their timberlands, others simply utilized the common carrier systems contiguous to their stumpage. Of the various rail lines, logging is most closely associated with the temporary and often-moved logging spurs. The limited duration of logging operations in any particular area limited the use of these spurs to a year or two. As the need for a particular spur



Plate 8. The Boom Cut constructed to give Boom Bay direct access to the Wolf River. (Author, 1970.)



# BOOM BAY AND AREA



AUTHOR'S RECONSTRUCTION

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MAP 4



*Plate 9.* The North Branch of the Oconto River which was improved for log driving. (Author, 1970.)



*Plate 10.* Section of the South Branch of the Oconto River which was not improved for log driving. (Author, 1970.)

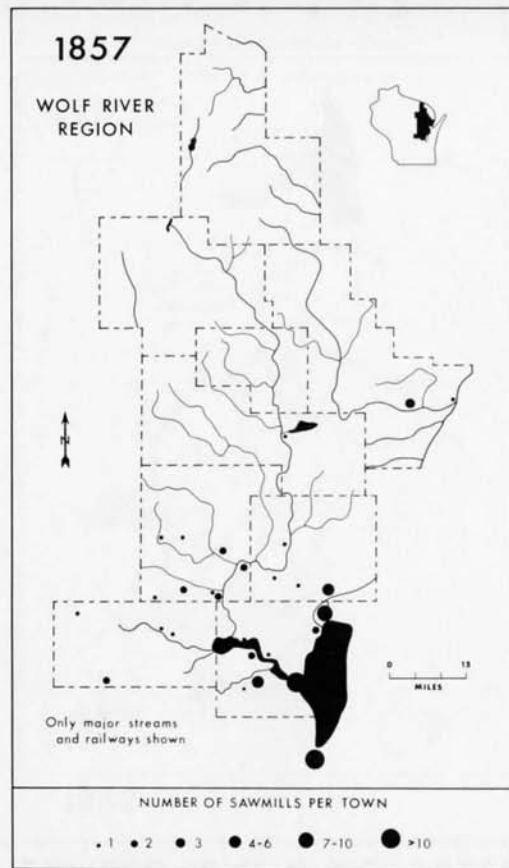


*Plate 11. Boom Bay Past. (Courtesy Oshkosh Public Museum, Oshkosh, Wisc.)*



*Plate 12. Boom Bay Present. (Author, 1970.)*

# LUMBER MANUFACTURERS

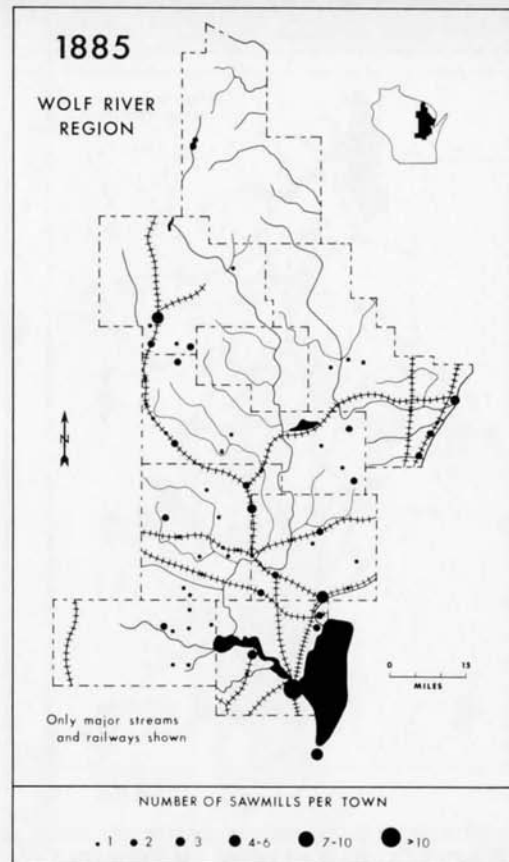


Source - Wisconsin State Directory

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MAP 5

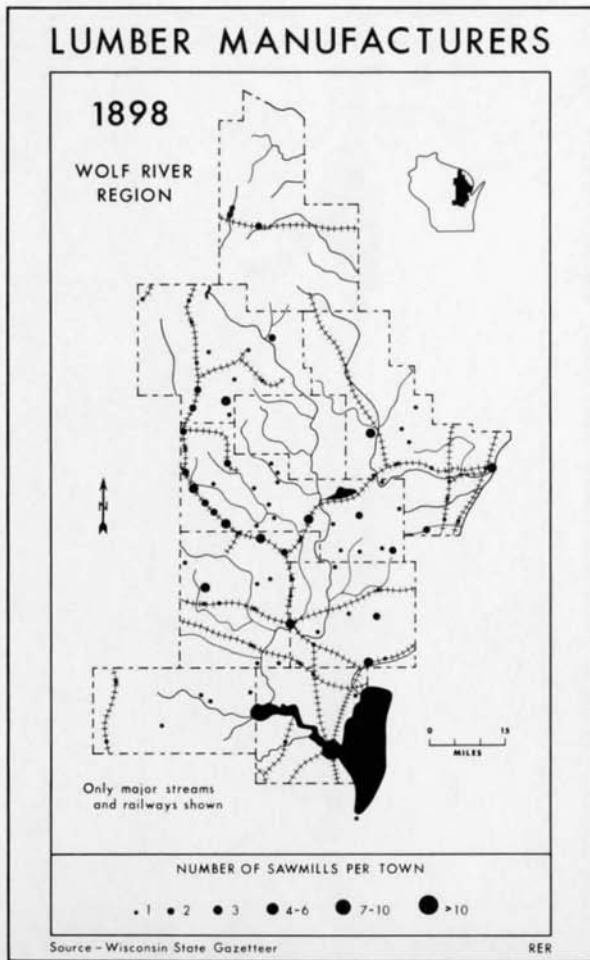
# LUMBER MANUFACTURERS



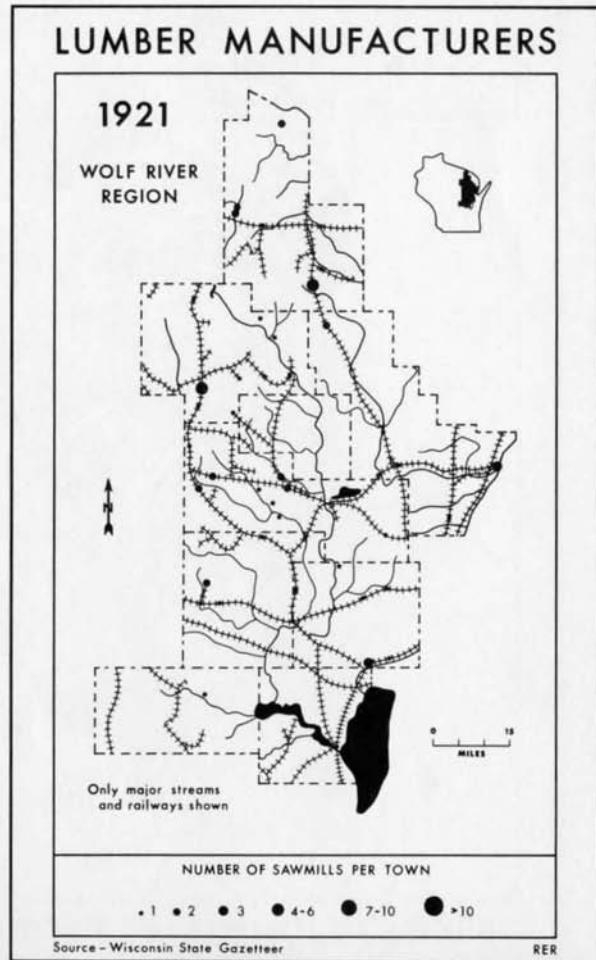
Source - Wisconsin State Gazetteer

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MAP 6



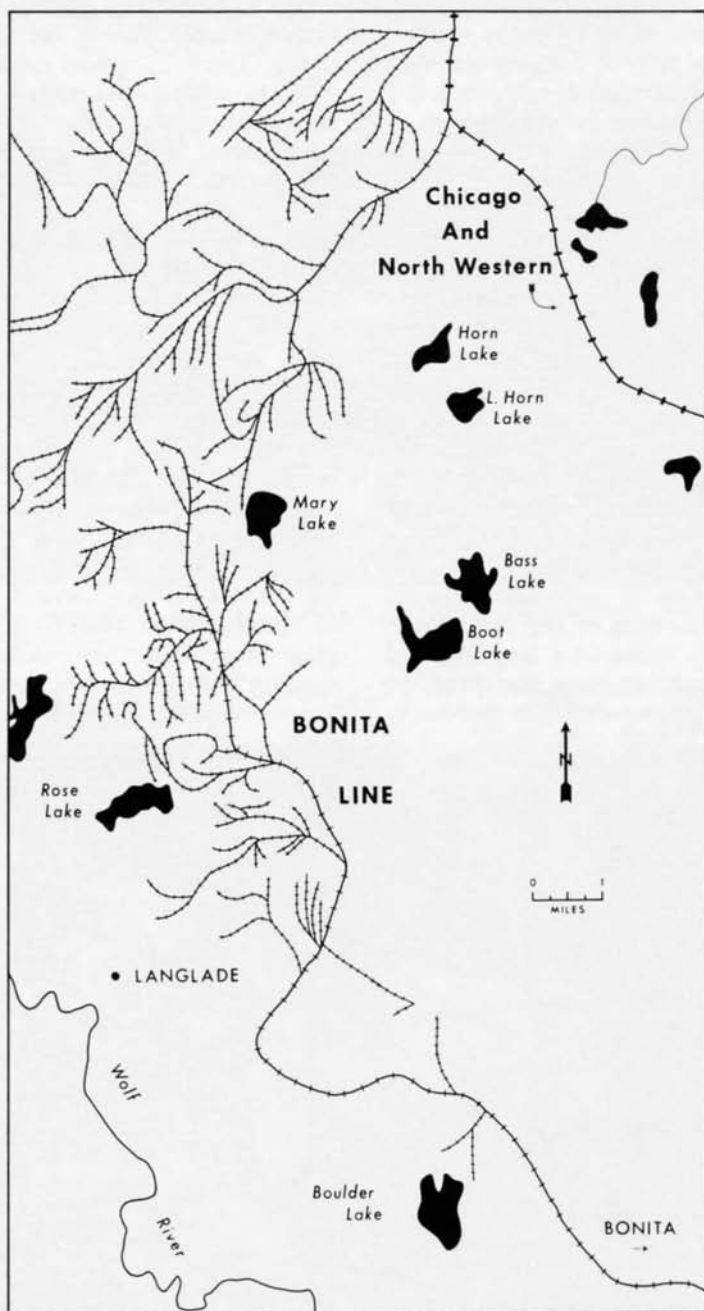
MAP 7



MAP 8



# BONITA LOGGING LINE



Source - Good

RER

MAP 9

terminated, the lumbermen picked up the rails and relaid them on new grades. The Bonita line with its many logging spurs was a typical logging railroad (Map 9). Lumbermen constructed this line in 1916 to log the hardwoods in portions of Oconto and Langlade County. The principal timber holders in the area, Holt and Baclom and the Oconto Company, owned mills in Oconto. As a result, the North Western Railroad built a branch westward from Bonita on its main line to the timber and carried the logs to Oconto. The last trackage of the Bonita line disappeared in 1934.<sup>31</sup> Today, all that remains are portions of its roadbed, occasional ruins of bridges and trestles, and the scarred landscape where logging camps, mills, and other structures once stood (Plates 13 and 14).

The building of railroads entailed significant changes in the landscape. The railroads required a brushed and stumped right-of-way fourteen to twenty-four feet wide. Dirt and rocks

removed along the right-of-way provided material for grades and left a noticeable ditch along each side of the grade. The local gravel deposits excavated for ballast left a mark on the landscape. Streams, from small creeks to large rivers required many types of bridges to obtain favorable grades. Valleys and ravines often necessitated trestles or fills, and at times railroad construction meant rock or earth cuts (Plates 15 and 16).

After the exhaustion of the white pine, rail logging of hardwoods extended the life of the lumber industry for over thirty years in some areas. By the middle thirties, however, only seven private logging railroads remained.<sup>32</sup> Within a few years these, too, ceased operations and ended the lumber era. In spite of the end of lumbering most common carriers continued to operate, even absorbing some logging lines into their systems. Most logging lines and spurs, however, disappeared with the end of the era of



Plate 13. Abandoned Railroad Grade—Bonita Line near Dalton Creek. (Author, 1970.)



*Plate 14. Site of Former Logging Camp along the Bonita Line—Section 31, Township 31 N. Range 16 East. (Author, 1970.)*



*Plate 15. Remains of Railroad Bridge near Langlade. (Author, 1970.)*



Plate 16. Fill thirty-two feet high and several hundred feet long near Butternut Lake on the Thunder-Lake Narrow Gauge. (1960, Courtesy Harry Huston.)

lumber. Today, the ground vegetation obscures many of these abandoned logging lines and spurs. From the air, however, they form an intricate maze of many patterns, winding and crisscrossing through miles of forest. The grades of former logging railroads are still common in the Wolf River area. Some serve as trails or fire lanes, others as forest roads for loggers, hunters, and fishermen. Still others are now county or town roads (Plates 17 and 18).

### *Lumbering Settlements*

Throughout the lumbering era, lumbermen established many settlements from the most temporary of logging camps to large cities. Wherever the lumbermen carried on their exploitation, they set up temporary settlements. By their nature, these temporary logging camps constitute a

separate and peculiar type of lumber settlement.

Before 1860, most logging camps consisted of small, crude, nondescript shacks. The influx of loggers from New England, however, introduced the "state of Maine Camp." The camp, built of logs, generally varied in size from 24 by 36 to 30 by 40 feet. The roof usually sloped downward on all four sides.

The camp is built of logs 18 x 24 feet, with a roof covered with hemlock boughs. In a smaller shanty the cooking for the entire force is done, and two or three more afford shelter for our teams. These shanties . . . are constructed of basswood logs, matched at the corners and the chinks plastered with mud.<sup>33</sup>

Wetherley's camp is about 35 feet long and 20 feet wide. It has but one room which contains the parlor, dining room, and sleeping room.<sup>34</sup>

Each season the number of camps



*Plate 17. Abandoned Grade of the Bonita Line Now Used as a Forest Trail—Section 26, Township 31 North, Range 15 East. (Author, 1970.)*



*Plate 18. Abandoned Grade of the Bonita Line Now Used as a County Road—Section 25, Township 31 North, Range 15 East. (Author, 1970.)*



and the size of the logging crews grew. In 1875 over eighty logging camps operated on the upper Wolf and its branches. At the same time the number of buildings increased and became more durable. A description of the Bray and Choate camp in 1874:

... we found about thirty men, a cook shanty, a sleeping shanty, and large hovels for the teams, a hospital for sick horses and oxen, a blacksmith shop and repairing shop. The cluster of buildings looks something like a miniature village nestling on the banks of the Wolf.<sup>35</sup>

By the 1880's separate buildings replaced the single, all-purpose building. In this type of camp the two structures, identical in width, stood end to end separated by a twelve foot space and covered by a continuous roof (Plate 19). The expansion of logging operations with the use of railroads enabled more permanent quarters and the

camps gradually became more imposing. In later years lumber and tar paper roofed the camps, and soon most camps consisted entirely of lumber. The camps reached their peak during the last twenty years of the lumber era, consisting of substantial bunkhouses, mess buildings, stores and offices (Plate 20).

The temporary camps built in logging operations usually lasted for only a few years. Few examples of the different types of camps remain. One of the few survivors, the Depot Camp built in 1880, still stands on McCaslin Brook (Plate 21).

As the focus of early economic activity, sawmills gave birth to a large number of settlements in the Wolf River area. Shawano and Winneconne became the chief sawmill towns on the Wolf River and Oconto on the Oconto River, while around Lake Winnebago



Plate 19. Hollis & Krueger Logging Camp, 1880, near Parrish. (Courtesy Langlade County Historical Society, Antigo, Wisc.)



Plate 20. Moore & Galloway Logging Camp, 1890's, Waupaca County. (Courtesy Oshkosh Public Museum, Oshkosh, Wisc.)



Plate 21. Depot Camp built in 1880 on McCaslin Brook, probably the oldest remaining camp in Wisconsin. (Author, 1970.)



Plate 22. Row housing in the company town of Laona. (Author, 1970.)

Oshkosh and Fond du Lac rose to importance. The cities of Neenah, Menasha, and Appleton near Lake Winnebago all began as sawmill towns. Almost all the northern towns began as lumber settlements with Antigo and Wabeno-Soperton becoming important rail lumber centers. Of these many lumber settlements, Oshkosh rose to the greatest lumber manufacturing center in the state and once contained over thirty lumber mills.<sup>36</sup>

When lumbermen built their sawmills in a settled community as Oshkosh, the company usually owned only a few buildings except those for the production of lumber. When the lumbermen located their mills in proximity to the timber, away from existing settlements, they often set up wholly new communities. The dominating sawmill or mills, the row housing, the company-owned dwellings, the company store, the lodging and boarding house of these communities became

the trademarks of a distinctive settlement type, the company town (Plate 22). Their unity of function made these towns self-contained and self-sufficient but in time contributed to their decline and in some cases their extinction. With the cutting of the forest often nothing remained to justify the continued existence of a town. Some towns like Connors Mill, Heineman, and Ingersol have simply faded out of existence. Many, however, like Soperton, White Lake, Little Suamico, Laona, and Blackwell gained new life as diversified wood manufacturing points, as recreational centers, or as retail and distributing centers for the surrounding farming community.

Most towns survived the passing of the lumber industry to remain an integral part of the landscape. The many settlements established during the lumber era laid the basis for most of the present urban pattern of the Wolf River region.

The present Wolf River region contains many elements peculiar to lumbering. An examination of its development reveals its foundations in the lumber era and points out that geography is a product of time and that an understanding of the totality of the present requires an examination of its past geography.

- [1] George Hotchkiss, *History of the Lumber and Forest Industry of the Northwest*, Chicago, 1898, p. 380.
- [2] *Oshkosh Times*, (D), October 7, 1876. Hotchkiss, *op. cit.*, pp. 390, 422.
- [3] James S. Ritchie, *Wisconsin and Its Resources: with Lake Superior, Its Commerce and Navigation* (Philadelphia: C. Desilver, 1858), p. 71.
- [4] Genivera Loft, "The Evolution of the Woodworking Industries of Wisconsin," Master's thesis, University of Wisconsin, Madison, Wisc. 1916, p. 50.
- [5] Hotchkiss, *op. cit.*, p. 394.
- [6] *Ibid.*
- [7] Harvey Huston, *Thunder-Lake Narrow Gauge*, published by author, Winnetka, Ill., 1961, p. 17.
- [8] Filibert Roth, *Forestry Conditions of Northern Wisconsin*, Wisconsin Geological and Natural History Survey, Bulletin No. 1, Madison, 1898, pp. 59-60, 62, 64-65.
- [9] *The Northwestern* (Oshkosh), (W), February 1, 1872. Robert F. Fries, *Empire in Pine* (Madison: State Historical Society of Wisconsin, 1951), p. 105.
- [10] *Shawano County Journal*, November 9, 1871.
- [11] John T. Curtis, *The Vegetation of Wisconsin* (Madison: University of Wisconsin Press, 1959), p. 469.
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