

“Manufacturers of Steam Distilled Turpentine and Pine Oils, Rosin, Navy Pitch, Kidney Rosin Oil and Rosin Paint Oil.”<sup>39</sup> Hammond began with this industry—its founder, Peter Hammond, had extensive landholdings that produced pitch and charcoal, as well as timbers for masts, all needed for the port in New Orleans.<sup>40</sup> As the pine forests reached their limits, in a sad final step, even stumps were dynamited out of the ground to extract their valuable resin. This practice was promoted in an advertisement for Hercules Powder in Chattanooga, Tennessee, in the 1920s that read,

Utilize your stumps. The Hercules Powder Company has given special study to the problem of blasting long-leaf pine stumps and their utilization to produce Naval Stores as an offset to the cost of clearing. We are glad to advise owners of cut-over pine lands who contemplate work of this kind.<sup>41</sup>

The use of stumps was only a desperate means to continue the poorly managed naval stores industry as a Mr. Hawley of the U.S. Forest Service commented pointedly,

The supply of stumps is no more inexhaustible than the supply of trees which originally grew on these stumps, and probably within 10 or 15 years after the last tree of the present stands of longleaf pine has been cut, the stump of that tree will be pulled out and distilled for the production of wood turpentine and wood rosin. What will be the condition of the naval stores industry of this country when that time comes?<sup>42</sup>

In its short period of production, the naval stores industry certainly changed the forests and the landscape of our piney woods. The great longleaf forests east of the Mississippi are now all but gone, and one still can find depressions that testify to dynamited stumps. Many of the plant and animals species that use this habitat are on the rare, threatened, or endangered species list, from gopher tortoises to orchids. It is unlikely we will ever see such forests again—unless we make a conscious effort to re-create them.

The fate of our longleaf pine forests is unclear. On a more positive note, The Nature Conservancy has bought hundreds of acres of pinelands near Covington, with plans to re-establish longleaf pine forest and savannas and protect the unusual plants and animals that once inhabited them. The Girl Guides are replanting longleaf pines at Camp Whispering Pines north of Hammond. With time, small regions of Louisiana will be restored to remind us of the landscape that once produced naval stores and maintained sea-going fleets.

## **The Story of Cypress**

European colonists quickly discovered that cypress wood is resistant to rot, yet strong and easy to work. The Louisiana timber trade began early—around 1700. Much has been written about cypress logging; the following overview comes largely

from an article on southern deepwater swamps,<sup>43</sup> with specifics for Louisiana extracted from Rachel Norgress's article<sup>44</sup> in the *Louisiana Historical Quarterly*.

Louisiana once had more than 1.6 million acres of cypress forest.<sup>45</sup> Some of these trees were 120 feet high and from 25 to 40 feet in circumference (recall figure 2-7). One large tree felled in Livingston Parish along the Amite River in 1931 was more than 1,000 years old and 91 inches in diameter at the base. When William the Conqueror invaded England in 1066, this tree had already been 300 years old. The local newspaper lamented,

There is a warning from this fallen giant. Its huge stump with its 1,300 rings seems to proclaim that the cypress tree was one of the last of its kind. It belonged to that forest primeval so fast disappearing. Easier it was to struggle against the storm and the lightning than against the invasion of the woodsman, and the whirl of the sawmill.<sup>46</sup>

Because cypress swamps are flooded for much of the year, harvesting was at first a difficult proposition and only a seasonal occupation. Bummers and swampers from the north came south each year by train or steamboat to join local Cajuns in the logging camps for the winter cutting.

Fresh-cut cypress trees do not float and at first were removed during low water levels by oxen. By 1725, loggers learned to cut the bark from a band around the base of the tree during the late summer and winter. This technique, called girdling, killed the tree and allowed the wood to dry enough so that it could be floated out during high water in the spring. This made the whole process of harvesting much easier, yet the extent of cypress timbering was relatively modest until the steam engine was applied to the operation.

The first advance toward large-scale commercial logging of cypress was set up by changes in legislation. The Timber Act of 1876 made large tracts of swampland available for 25 to 50 cents per acre, a fraction of their commercial value. Yet because of the difficult logistics described above, many of those acres and their stands of trees may not have seemed especially lucrative to harvest at the time of sale. Then a revolutionary technological device that made this possible was the pullboat (figure 4-3), invented in 1891. Using steam powered winches and cables, pullboats could drag in fallen trees from as far away as 5,000 feet. Canals were excavated deep into swamps so the entire forest could be stripped systematically (figure 4-4, top). In some places the pullboat would move down the canal 150 feet or so at a time and set up a "run" to pull in cut logs. Each run was cleared of trees and stumps, and served as a pathway for repeated dragging of logs, gradually scouring the ground into a mud-and-water-filled ditch. Swampers would work from boats or rafts to fell the tree, trim the branches, cut the trunk into log lengths, winch them to the boat, then build them into rafts. These rafts could then be floated to mills for processing. In other places the boat was not moved and the winch was used to drag in logs from all directions, making runs that radiated outwards like spokes of a wheel. Both parallel and wheel-shaped markings are still visible from the air over many cut over Louisiana swamps (Figure 4-4, bottom).

Other lasting changes were made to the landscape. The canals dredged for the pullboats, sometimes up to 40 feet wide and 10 feet deep, resulted in the partial drainage of many swamps. In other areas, railway lines were temporarily laid to remove the timber (figure 4-5). These often left behind ridges in the swamp that also affected local hydrology. Between 1880 and 1910, the length of railroads in Louisiana increased from 650 miles to more than 5,500 miles, largely because of this industry. Levees were also employed in this harvest. The May Brothers Company in Garden City, Louisiana, once constructed a levee six feet in height around a swamp to flood it in order to float out the logs. Some mills ingeniously found a way to use spring flood water to power their mills. Since this could be done only a few months of the year, these mills were relatively small operations. Unfortunately, the levees and drainage ditches created by this industry have altered the water levels that were essential for the regrowth of the cypress.

Cypress logging reached a peak in the early 1900s, with a billion board feet cut in 1913—almost enough wood to lay a foot-wide cypress boardwalk from Earth to the moon. It is difficult to imagine the scale of the destruction of the once impressive cypress forests. As one early logger described,

We just use the old method of going in and cutting down the swamp and tearing it up and bringing the cypress out. When a man's in here with all the heavy equipment, he might as well cut everything he can make a board foot out of; we're not ever coming back in here again.<sup>47</sup>

Mr. Harry Hardtner, a prominent lumberman in north Louisiana, wrote a report for the Louisiana legislature in 1910 expressing the consequences of this approach:

Forests were intended to protect us from soil erosion, cyclones, climate changes, and hurricanes. Shall we destroy the protection? We are doing it, and so rapidly that inside of twenty years, Louisiana will be the poorest state in the Union unless measures are adopted to prevent these calamities. What has the lumberman done? Proceeded to cut up these forests just as fast as he can, not leaving even seed to reforest his lands; running his mills night and day; producing more lumber than the country needs . . . Is it not time for the State of Louisiana to act?<sup>48</sup>

In the year following his report, the lumbermen of Louisiana cut 3.5 billion board feet of lumber. (Three years later, the passenger pigeon and Carolina parakeet were extinct.) Seven years later, the rate of forest removal had accelerated to a staggering 4.2 billion board feet.<sup>49</sup> In 1920 it was clear that

it was just a matter of a few years before the supply of cypress would become exhausted. By 1925 many of the once gigantic mills had “cut out;” the mills were silenced . . . the final whistle had blown and the mill laborers had come to seek employment elsewhere.<sup>50</sup>



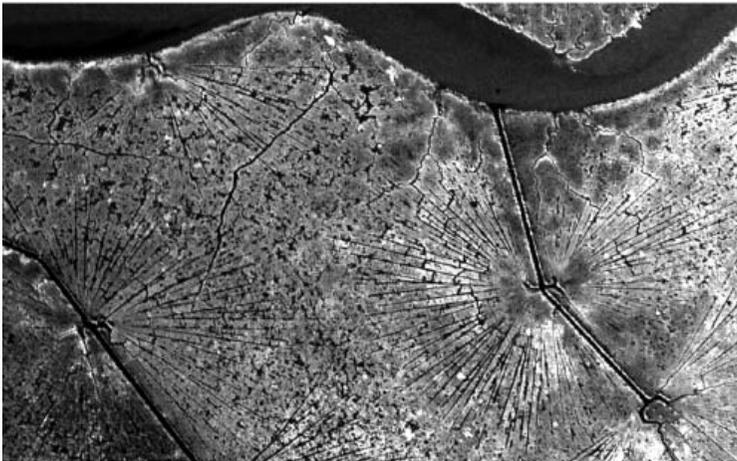
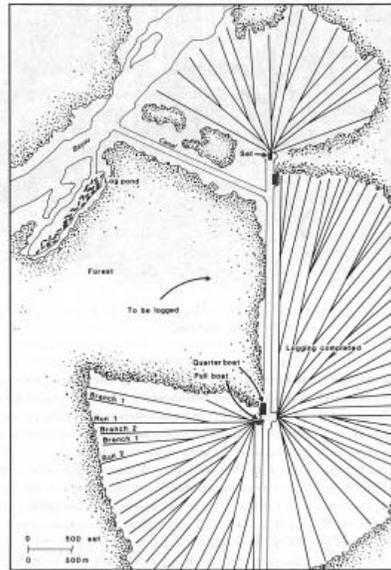
*Figure 4-3. In the late 1800s, William Baptist of New Orleans developed the pullboat system for logging cypress. This two-drum pullboat could skid logs for up to 3,000 feet from the swamp (from Williams, M. 1989. *The lumberman's assault on the southern forest, 1880-1920*. p. 238-288 in M. Williams (ed.) *Americans and Their Forests: A Historical Geography*. Cambridge University Press, Cambridge, UK).*

According to J. H. Foster of the United States Forest Service, the lumber industry had contributed little to local economies because they

obtained their lands at low prices and have made fortunes from the increase in the value of the timber. The industry does not develop the country permanently and the earnings are seldom invested where they are of any benefit to the community.<sup>51</sup>

Not only were these companies exempt from tax on the trees they harvested, they were allowed to destroy the forest resource. In 1922, the then Senator Hardtner campaigning for a “tax on natural resources severed from the soil or water” described the outcome this way:

No man has a right to use his property or waste or destroy it to the injury of his neighbor. The owner of a large tract of timber has no moral right nor should he have a legal right to waste or extravagantly utilize the forest for his own enrichment by destroying the seeds of a commodity which could serve the future generations of the race.<sup>52</sup>



*Figure 4-4. The pullboat logging network used to systematically clear cypress from Louisiana's swamps (top, from Williams, M. 1989. The lumberman's assault on the southern forest, 1880-1920. p. 238-288 in M. Williams (ed.) Americans and Their Forests: A Historical Geography. Cambridge University Press, Cambridge, UK). Bottom, a modern aerial view of the wetlands in the Manchac area showing the scars left by pullboat logging.*



*Figure 4-5. A temporary railway laid for the extraction of cypress logs from the swamp (courtesy Glen Montz).*

It was six more years, long after the heyday of logging, that the state passed a tax of 26 cents per thousand board feet.

The average citizen of Louisiana gained little from this exploitation. More than a thousand years of forest growth had been exhausted within a few decades, another thousand would be required to replace it. By 1924, even the Louisiana Red Cypress Lumber Company in Harvey, once the largest cypress mill in world, was liquidated and replaced in 1927 by the Florida-Louisiana Red Cypress Company whose sole purpose was to sell the remaining stock.<sup>53</sup> By 1934, the state had more than 1.6 million acres of cutover cypress land, with only 22,000 remaining in cypress forest.<sup>54</sup>

The most obvious effect of this logging was the complete removal of the cypress trees from some areas of the state where the trees simply failed to regenerate. Along the western swamps of Lake Pontchartrain, for example, one can see marshes that still have stumps, dead knees, and the occasional dead trunk as evidence of the carnage that took place between 1870 and 1920. With the trees gone, the building of land by organic activity slows. Tree roots and leaves from mature cypress forest that used to contribute to land build up (several inches each decade) are no longer there to keep ahead of the rising sea level. Organic matter in the soil is exposed to the air and begins to decompose. The pullboat ditches enhance runoff from the wetlands,

creating hydrologic conditions unfavorable to cypress regeneration. Thus the balance between land and water is changed. As the land sinks, the former forest becomes open marsh, and eventually, open water. Further, in areas near the coast, each ditch serves as a conduit to carry surges of salt water back into the freshwater marsh. Salt water kills young cypress trees. Pullboat logging, therefore, not only removed the forest, but permanently changed the physical nature of the landscape. It was nothing short of a disaster for the coastal wetlands of Louisiana.

Social historians still have much work to do, tracing how the income from despoiling thousand-year-old coastal forests built the wealth and social power of a few families, while leaving the rest of the citizens of Louisiana the burden of paying for the consequences. We must remind ourselves that the logging companies profited for just a few decades from cutting growth that began a thousand years ago, from trees that were already 500 years old when Columbus visited the Americas—trees that were already large before there were telescopes or printing presses, much less electricity and telephones. It is situations like this that have led the writer, Garrett Hardin, to observe that most environmental problems are created when irreplaceable public resources are sold for the private use of a privileged few.

Some conservationists are trying to replant the baldcypress forests of the south. It is a race against time, since rising sea levels and subsiding land are allowing the sea to creep further inland each year. Once marshes are saline, they cannot be replanted to forest. It is sobering to think that even if the young trees survive, another thousand years must elapse again before we see such spectacular trees. At four human generations per century, it will be some 40 generations from now, around AD 3000, before these marshlands may again support ancient cypress trees that were common here until the early part of the last century.

### **William Bartram's View in 1777**

What was the environment of Louisiana like around the time of the War of Independence? There were no cameras to record the landscape scene and no biologists working here. Fortunately, a great American naturalist, William Bartram (figure 4-6), visited Louisiana in autumn 1777, toward the end of his journey (6,000 miles on horseback)<sup>55</sup> across the Southeast. Here are a few of his observations of eastern Louisiana. To put his trip in context, Bartram arrived in Louisiana around the time when the British were attempting capture the Hudson River Valley, a venture that ended at the Battle of Saratoga on October 17. Unfortunately, Bartram arrived severely ill,

incapable of making any observations, for my eyes could not bear the light, as the least ray admitted seemed as the piercing of a sword, and by the time I had arrived at Pearl river, the excruciating pain had rendered me almost frantic<sup>56</sup>

It was several weeks before he could explore.