

Live Oak Use

Historic Time-Line:

European Colonization & Nation Building

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This time line attempts to summarize use of live oak (*Quercus virginiana*) wood, and the forests from where it was harvested, starting in the mid-1500s to the present. The reason live oak wood and forests are historically better documented in use than most other North American trees, is the demand for live oak by European naval powers, the United States navy, and commercial ship builders along the Atlantic coast of North America. Economics of this commercial / strategic forest product assured interest in live oak growth and harvesting.

Live oak wood can be described as: heavy, tough, durable, shock resistance, lasts long under compression loads, great strength in tension, and 2-3 times more resistance to decay when exposed to wet and dry cycles than most American woods. Historically, live oak wood was used for: caulking mallets and anchor mauls; hawsing beetles; hubs, axles, wheel rims of heavy carts; screws and cogs for mill wheels; submerged piles, locks and water wheels; polished interior beams and finished beams; staircase decorations; parquet flooring inserts; ship building ribs and knees; and, handles.

Below is a brief list of historical points where live oak is specifically mentioned or was involved. Please note this historic time-line is for *Quercus virginiana*, the principal live oak species of the Southern and Southeastern United States, and is not associated with other live oak species in other parts of the country. The primary source for this information is the 1981 book “**Live Oaking: Southern Timber for Tall Ships**” by V.S. Wood, published by Northeastern University Press, Boston, MA. (206 page hardback).

1556 – Spanish identified uniqueness of live oak and felt it represented great wealth for ship building.

1610 – English in Virginia identified live oak as a unique species of oak.

1682 – Live oak wood properties cited in reports as tough and strong grained.

1710 – Modern recovery of a sunken ship from this year showed it was built with live oak structural members and planking of baldcypress and longleaf pine.

- 1720s – 1850s – Great ship building period using live oak by England, Spain, France, and United States navies and by commercial interests.
- 1745 – Live oak cited in Georgia as “...lofty, Spanish moss robed live oak is the monarch of the woods.”
- 1769 – English reported on Georgia and Florida live oak being plentiful, with live oak of salt edges and islands being superior to inland and fresh water area live oak due to less sap and finer grain. (Stressed oaks were slower growing.)
- 1775 – Live oak pirates decimating public lands from the Florida panhandle area over to Louisiana, selling wood to Spanish in New Orleans.
- 1784 – Cumberland Island, Georgia reported denuded by as many as 300 British loyalists from Florida who were shipping live oak to the West Indies on British ships.
- 1790 – Live oak claimed to be highly prized in French shipyards.
- 1793 – French plant taxonomist wrote back to France live oak is the finest wood for ship construction on the continent. He sent back plants and seeds, but they would not grow in the royal gardens of France.
- 1794 – French loyalist in Philadelphia tried to secretly purchase Cumberland Island Georgia for the French government. This plan discovered and failed.
- 1794 – Congress passed a bill authorizing President Washington to form a navy starting with six frigates. Building contracts for the ships were given to six different shipyards along the Eastern seaboard.
- 1794 – Eli Whitney invented the cotton gin. Agricultural pressures to cut down and kill live oak forests greatly accelerated.
- 1797 – After many procurement problems, the first three frigates (38-44 gun ships) of the new United States of America navy were launched. (United States, Constellation, and Constitution)
- 1798 – United States Secretary of the Navy Stoddert stated live oak from Georgia is almost indispensable in construction of the largest naval ships, especially in parts most subject to decay.
- 1799 – Congress passed an act to purchase and protect for naval use live oak lands. Two islands in Georgia were the first of this naval reserve land.

Navy Ship Building: Historic documentation suggested the best timber from at least 60 acres of live oak forest was needed to build one 74 gun ship. Live oak trees required for a 74 gun ship-of-the-line was cited as 680 trees (34,000 cubic feet of live oak wood). Live oak trees needed for a 44 gun frigate was

estimated at 460 trees (23,000 cubic feet of live oak wood), and for a sloop was estimated at 160 trees (8,000 cubic feet of live oak wood).

- 1800 – Federal price paid for live oak of naval quality was ~75 cents per cubic foot. (Very expensive!)
- 1812 – 1840s – Yankee whaling vessels built bigger, better, and longer lasting using live oak.
- 1823 – Live oak and Southern redcedar theft from public lands by businesses rampant.
- 1826 – Survey of live oak along the Atlantic coast in Florida reported more than half of all live oaks were gone as far as 15 miles inland.
- 1827 – Timber Trespass Act passed by Congress to hold live oak lands in reserve and try to control loss. (Tree cops!)
- 1830 – Silvics and silvicultural beginnings – use of coppice and acorn regeneration, preventing deep planting, good watering, removing competition, transplanting 4-12 inch trees, releasing and cleaning around 2 inch trees in the forest, and setting out small trees in open areas.
- 1831 – Most of world's ship quality live oak publically owned by the United States – most forests seriously plundered.
- 1832 – United States Secretary of the Navy Woodbury stated there was probably less than 150,000 trees left on public lands, and less than 10,000 on private lands, suitable for ship building.
- 1833 – Live oaks of ship building size grow at roughly three (3) trees per acre for the best and largest specimens. Only 20-30 young trees per acre should be left to grow to attain ship building size.
- 1830s – Audubon observed, due to decay and cracks, many live oak trees were cut, never used, and left to rot.
- 1830s – 1840s – Oak runners (bands of timber thieves called cut-and-run gangs) decimated live oak forests along the Gulf Coast area, especially Louisiana.
- 1840s – 1850s – Steam powered ships began replacing sailing vessels.
- 1840s – 1860 – Fast wooden Pacific clipper ships were built emphasizing only the finest building materials, like live oak and redbay from Southern coastal forests.
- 1841 – Two of the largest commercial ship builders were caught stealing live oak off government lands for their commercial use. Smaller companies were caught cutting live oak off public lands and selling it to the United States Navy.

- 1850s – Many protests occurred regarding live oak pirates on public lands.
- 1862 – Ironclad ships became the standard requested by the United States Navy – live oak demand fell sharply.
- 1867 – Price of premium live oak was \$2.00 per cubic foot – four (4) times white oak.
- 1868 – Naval reserves of live oak lands from Florida panhandle to Louisiana amounted to more than 250,000 acres.
- 1883 – Congress passed a steel hull naval ship procurement bill which ended United States Navy use of live oak. The Navy kept a small supply of trees and wood in reserve.
- 1917 – A few small boats were built of live oak for World War I in Darien, Georgia. This was the last official government use of live oak for new ships.
- 1930 – Live oak stored under water by Navy since before Civil War used for repairs of USS Constitution.
- 1962 – Live oak stored under water by Navy since before Civil War used for repairs of USS Constitution.
- 2014 – Donated live oak used for repairs of USS Constitution, and other naval uses.
- 2016 – Many large live oaks today are stump sprouts from live oak trees harvested in the first half of the 19th century.

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