

The Wood Age

For 99% of hominin history, we were living in the Stone Age. It began some 3 million years ago, followed much later by the Bronze and Iron Ages, at just 10,000 and 5,000 years ago.

Hominins have used wood throughout those ages. For all that time, you could say we've been in a Wood Age—though scientists never officially named one.

Wooden artifacts don't often turn up in the archaeological record, because they decompose.

Nonetheless, traces have been found. Some stone tools in East Africa, dating to around 1.5 million years ago, show residue of being attached to wooden handles.

A wooden plank apparently polished by humans was dated to nearly a million years ago in Jordan. In Eurasia, wooden spears from more than 300,000 years ago were likely used for hunting or fishing.

A recent find near Kalambo Falls, in today's Zambia, revealed wood logs cut by stone tools to form a platform or shelter. At 476,000 years old, these are the earliest known examples of wooden construction.

And wood is still widely used today. The average American uses 2 pounds of wood each day, mostly in packaging. Building the average American house requires 2 to 3 acres of forest! And nearly a billion people still burn wood for energy.

Though we never had an official Wood Age, we're definitely still in it.



Dr. Larry Barham, from the University of Liverpool in the United Kingdom, works on the excavation of the tree trunk found alongside a wedge (object b in the following figure) dated at around 476,000 years old.

Credit: Dr Larry Barham with permission



BUREAU OF
ECONOMIC
GEOLOGY

Background: The Wood Age

Synopsis: Despite the prominent role of wood in everyday life for hominins, there is no “Wood Age.” From spears and digging sticks to fires and shelter, wood has assisted in the making of standardized tools but is largely ignored by archaeologists when discussing early technological advancements. The prevalence of wood is also understated in modern life, with the material essential to us still.

- Early human history is divided into different ages, Stone, Bronze, and Iron. These ages correspond with tools and advancements made during these time periods.
 - In the Stone Age, hominins first started to use and make stone tools at different times in different places around the world. The earliest Stone Age tools are about three million years old, and were found in Kenya.
 - The Bronze Age marks the start of smelting metals, usually copper and copper alloys including bronze, which is copper mixed with tin. The first artifacts from this age were found in Western Asia from about 10,000 years ago.
 - Finally, the Iron Age started when bronze and copper smelting became widely replaced by iron, beginning in Western Asia 3,200 years ago. However, the first smelted iron items were made 4,500 to 5,000 years ago.
- Throughout these ages, mankind used wood to produce and employ these advanced tools, for example, wooden handles and wood fires. However, archaeologists never named a “Wood Age.”
 - Some scientists have argued for decades that the organic material deserves more recognition for the role it has played in technological advancements.
 - Complicating these arguments, true evidence of wood tools is rare as wood easily decomposes, and scientists cannot concretely determine when a Wood Age would begin.
- While well-preserved wooden objects are rare, some artifacts have been found to provide further insight into how our ancestors used wood.
 - Some early stone tools show residue of being attached to wood that suggests hominins were working with wood 1.5 million years ago in East Africa.
 - The earliest wood artifact found is a fragment of a polished plank from 780,000 years ago discovered in the Jordan Valley.
 - Digging sticks, used to dig up roots, and wooden wedges have been found in Africa from about 500,000 years ago, alongside stone tools.
 - Some wooden spears found across Eurasia can be dated to 300,000 years ago, with about a dozen spears found in Schöningen, Germany. These double-sided sharpened sticks were likely used for hunting large animals or fishing.
- A finding in Kalambo Falls in Zambia has provided new insight on wood structures built and used by hominins.
 - When the site was first excavated in the 1950s and 1960s, archaeologists found many wood and stone objects in the waterlogged earth. However, there was no way, at the time, to know exactly how old they were and no clear evidence that they were used.
 - Fifty years later, scientists revisited the site to date the artifacts using modern means, and after further excavation, discovered two logs joined together with signs of modification.
 - One log was placed atop another, with a notch carved into it to fit snugly against the bottom log. High resolution photos revealed clear marks of carving using stone tools.

References: The Wood Age

These Ancient Whittled Logs Could Be the Earliest Known Wooden Structure | Nature
Homonins Built with Wood 476,000 Years Ago | Nature
Should the Stone Age Be Called the Wood Age? | Cosmos
Wood Products in Everyday Life | USDA
What Evidence Is there for a “Wood Age” to Rival Those of Stone, Bronze, and Iron? | Discover

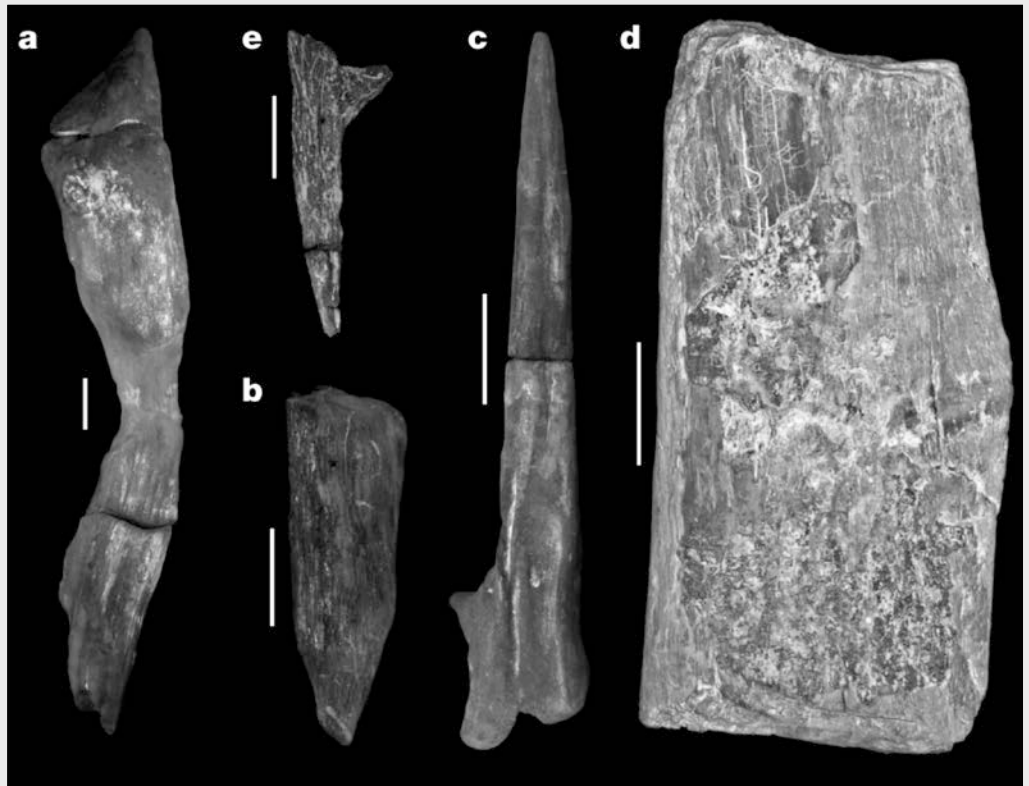
Contributors: Dr. Larry Barham (University of Liverpool), Shannon Lynch, Juli Hennings, Harry Lynch



EarthDate.org
Fact Sheet:
Episode **ED 412**

Background: The Wood Age

These five wood tools were found at the archaeological site of Kalambo Falls, Zambia (south-central Africa). They were preserved underwater and covered in clay and sand, which protected them from drying out. The two oldest pieces (a and b) are nearly 500,000 years old. Piece 'a' is the top part of a structure made from two trees that were cut down and shaped using stone tools. The notch in the middle of 'a' was designed to fit over the tree below (not shown here), which was also shaped. The two pieces fit together, making a stable framework on which a platform or walkway could be built over the wet ground. Object 'b' is shaped like a wedge with a broad base and pointed tip.



It may have been used to split wood or hold something in place. Object 'c' is a branch shaped to a pointed end for digging up roots or other plant foods. This tool is dated to 390,000 years ago. Object 'd' is a log cut from a tree trunk (you can see the axe marks at each end), which might have been used as a working surface for making other tools or preparing food. Object 'e' was found just beneath and is a split branch with a pointed tip. We do not know what it was used for. Both 'd' and 'e' are dated to 324,000 years ago. The people at Kalambo Falls recognized the value of wood for making everyday tools that made life a little bit easier.

Credit: KoprX, CC BY-SA 4.0, via Wikimedia Commons

- This structure, theorized to be some kind of stable platform or simple shelter, is dated to about 476,000 years old, predating the evolution of *Homo sapiens* by over 100,000 years. No hominin remains have been found at Kalambo Falls, so scientists can't be sure which earlier species of *Homo* constructed it.
- These findings are monumental! Scientists had uncovered Neanderthal constructions made of stalagmites and mammoth bones, but, prior to Kalambo, had little evidence of hominins making structures of wood.
- Despite not knowing when the Wood Age began, one could say civilization is still in it today given how wood remains an essential material in our lives.
 - The US Department of Agriculture estimates that the average American uses about two pounds of wood per day, in many products from paper to food flavorings. Collectively, Americans consume over 100 million tons of wood and wood products each year.

References: The Wood Age

These Ancient Whittled Logs Could Be the Earliest Known Wooden Structure | Nature
Hominins Built with Wood 476,000 Years Ago | Nature
Should the Stone Age Be Called the Wood Age? | Cosmos
Wood Products in Everyday Life | USDA

What Evidence Is there for a "Wood Age" to Rival Those of Stone, Bronze, and Iron? | Discover

Contributors: Dr. Larry Barham (University of Liverpool), Shannon Lynch, Juli Hennings, Harry Lynch



EarthDate.org
Fact Sheet:
Episode **ED 412**

Background: The Wood Age

- A residential home often is framed with lumber. Including flooring and other wood construction materials, it is estimated that two to three acres of forest are used to build an average single-family home in America.



A stone axe blade from Kalambo Falls is the kind of tool that was used to cut down trees and shape the wood. The object below the axe is the preserved log from the 324,000-year-old level at the site. Both ends of this tree trunk were squared using such an axe.

Credit: Dr Larry Barham with permission

References: The Wood Age

These Ancient Whittled Logs Could Be the Earliest Known Wooden Structure | Nature

Hominins Built with Wood 476,000 Years Ago | Nature

Should the Stone Age Be Called the Wood Age? | Cosmos

Wood Products in Everyday Life | USDA

What Evidence Is there for a "Wood Age" to Rival Those of Stone, Bronze, and Iron? | Discover

Contributors: Dr. Larry Barham (University of Liverpool), Shannon Lynch, Juli Hennings, Harry Lynch



EarthDate.org
Fact Sheet:
Episode **ED 412**