"Glacial Lake Hackensack"

As glaciers melted at the end of the Last Ice Age about 10,000 years ago, waters dammed by rocky debris formed a large lake that extended from Rockland County to the Newark area. Glacial Lake Hackensack lasted for more than 2,500 years before it drained.

At their maximum extent about 18,000 years ago, great ice sheets covered much of North America (Fig. 1).


Fig. 1 The 'Wisconsin Ice Sheets,' last of the Ice Ages

http://www.gifex.com/detail-en/2009-11-09-10972/Wisconsin-glaciation.html

As glaciers melted at the end of the last Ice Age about 10,000 years ago, melt waters dammed by the terminal moraine (debris left at the far end of the ice sheets) filled low-lying areas. In our area, this created “Glacial Lake Hackensack” (Fig. 2). At its maximum, it was about 5 miles wide and 45 miles long, extending from what is now Rockland County next to the Palisades ridge southward to the vicinity of Newark Bay.

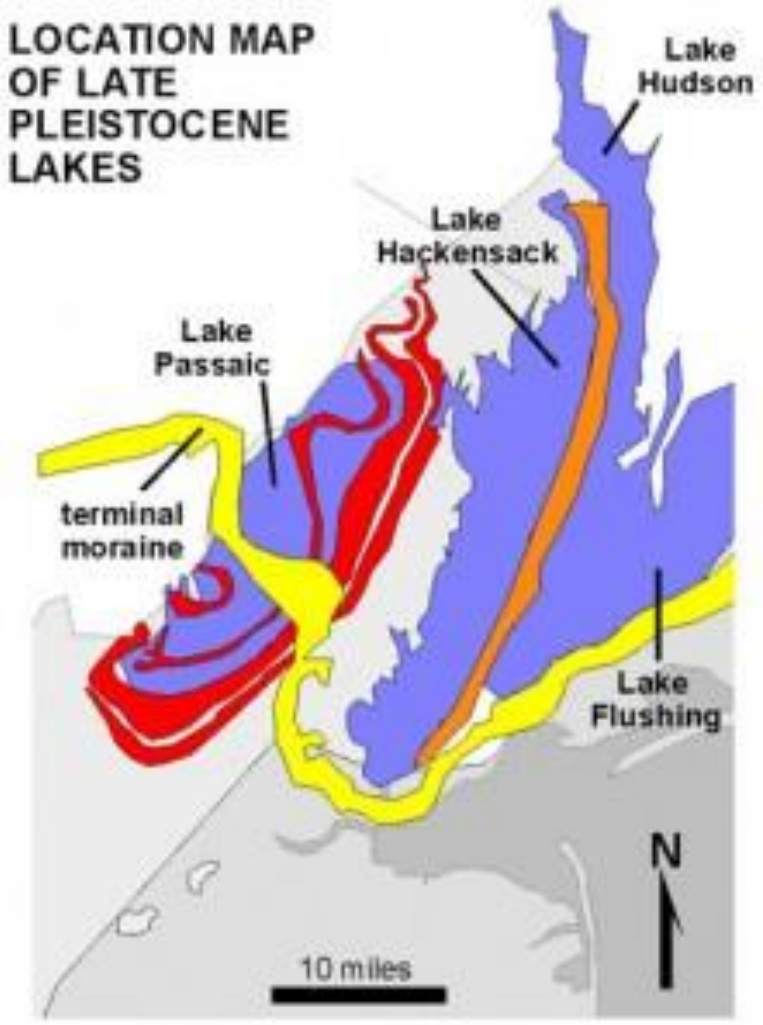


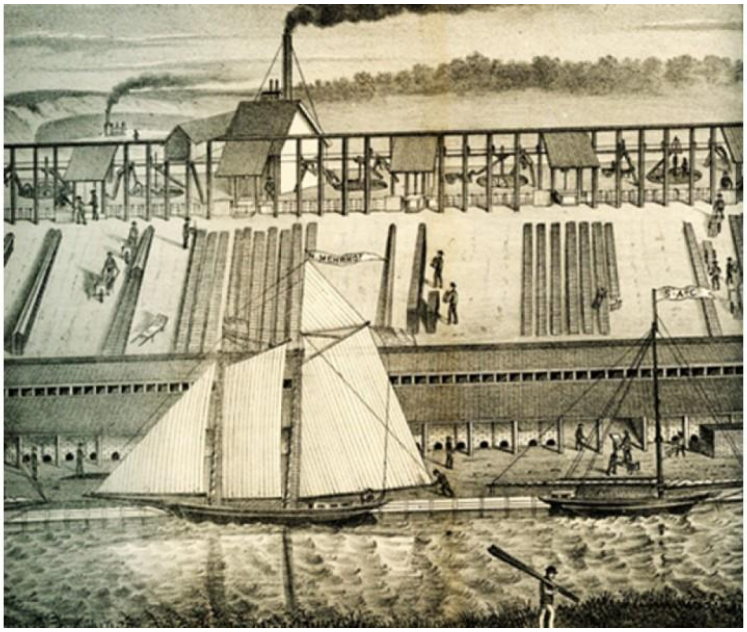

Fig. 2 Glacial Lake Hackensack and adjacent glacial lakes
https://3dparks.wr.usgs.gov/nyc/images/fig144.jpg

The modern Hackensack Meadowlands are remnants of this glacial lake. “Glacial Lake Hudson” lay on the other side of the Palisades ridge and “Glacial Lake Passaic” lay to the west.

Each winter when the lake froze, the smallest particles settled out in the quiet water. These were then covered by larger particles brought in by streams during spring and summer. Such annual layers are called "varved clays." In the 1920s, geologist Chester A. Reeds counted these varves in a clay pit in Little Ferry, NJ, and determined that the lake lasted more than 2,500 years before draining away when it broke through the terminal moraine. You can read more about the story of Glacial Lake Hackensack in *This Was Early Englewood*.

Fig. 3. Varved clays (https://en.wikipedia.org/wiki/Varve)

In the 19th and 20th Centuries, the clays at many locations in what had once been glacial lakes were used to make bricks. Fig. 4 shows one 19th century operation in Little Ferry.



https://patch.com/new-jersey/riverdell/bp--the-story-of-our-valley-chapter-four-a-ton-of-bri98eb08de25

## More information

J.K. Lattimer (1990) *This Was Early Englewood*. pp. 48 – 53.

New Jersey Meadowlands Commission "History of the District"

New Jersey Geological Survey "Glacial Sediment and the Ice Age in New Jersey"

Chester A. Reeds "The Varved Clays at Little Ferry NJ"

"The Story of Our Valley, Chapter 4—A Ton of Bricks"

"Bricks, Stones, and Traprocks"