

**“The Seven Sisters”
Palisades Diabase bedrock**

These slopes and flatter areas underlain by diabase bedrock on the west side of the Palisades were nicknamed “The Seven Sisters” by early residents.

Early residents gave the nickname “The Seven Sisters” to the slopes and flat areas between them, especially on Palisade Ave. The solid bedrock that forms the Palisades cliffs along the Hudson River and the sloping hills on the eastern side of Englewood and vicinity are composed of diabase basalt. This dark-colored igneous rock (Fig. 1) was created about 200 million years ago as part of the Late Triassic-Early Jurassic Newark Basin. (See “Bedrock Geology.”) Magma rose from a deep source of molten material but was forced to flow horizontally underground between layers of the older sedimentary rocks, rather than reach the surface. Later, regional earthquake activity tilted the layers downward to the west, and erosion removed most of the overlying softer sedimentary rocks to expose the harder diabase basalt (Fig. 2).

Fig. 1. Diabase (credit: <https://en.wikipedia.org/wiki/Diabase>)

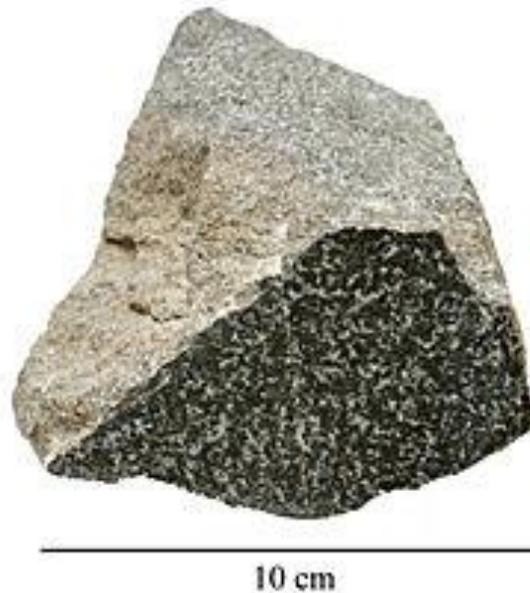
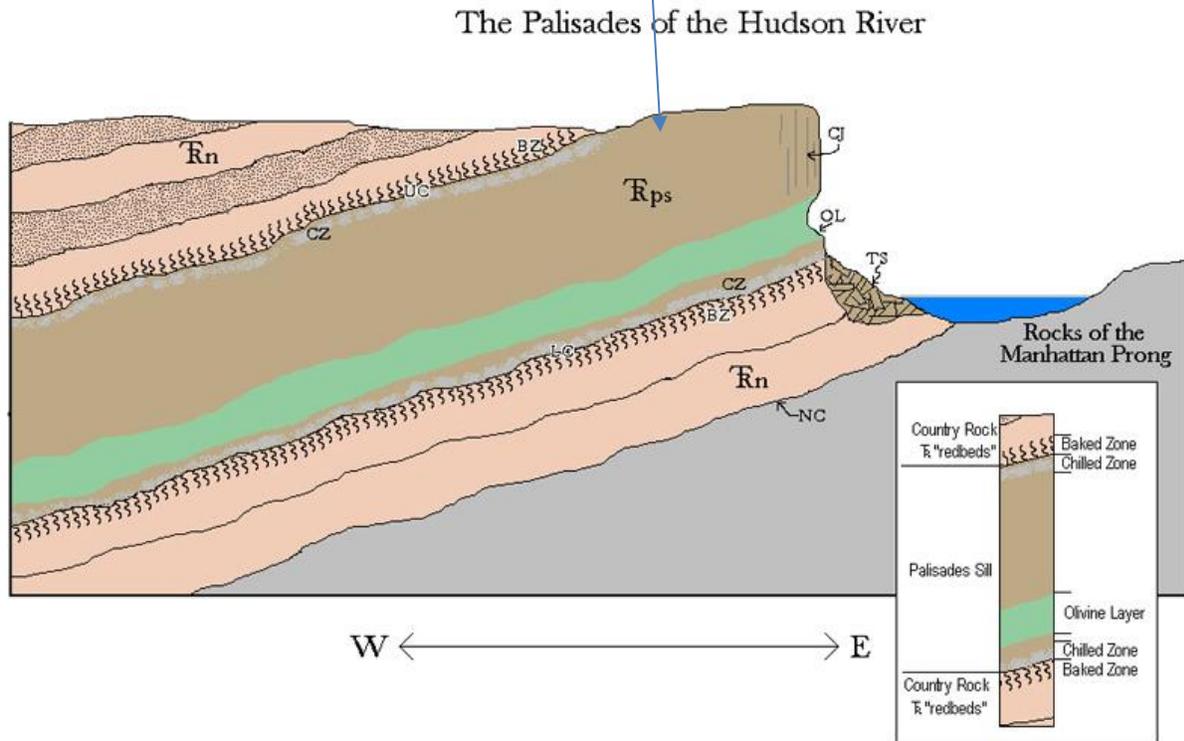


Fig. 2. The “Seven Sisters” formed on the sloping upper surface of the Palisades Sill (TRps). It originally formed beneath the overlying sedimentary rocks (TRn), but was exposed as these were eroded. The whole region was tilted downward to the west. (https://en.wikipedia.org/wiki/Palisades_Sill)



Credit: <http://stevekluge.com/geoscience/images/palisades/default.html>

What is now Palisade Avenue was originally constructed as a logging road to bring cut timber down the hill to where the Northern Railroad was being constructed. It was a dirt road that ran directly from the top of the Palisades to Overpeck Creek. Palisade Ave. was not paved until 1913, when more automobiles began to serve the needs of the wealthy residents of the East Hill.

Dr. John Lattimer in *This Was Early Englewood* (p. 25) provides a more detailed description of “The Seven Sisters Hill in Englewood”:

As one travels west down the back slope of the Palisades (on Palisades Avenue in Englewood) one comes to a first dip about a half-mile west of the margin of the Palisades at Martin Court. This is the topmost of the so-called “Seven Sisters” hills. This dip was caused by a crack (or fault) in the thinning-out edge of the lava sheet, which settled down several dozen feet at this point, creating a valley. Then, still travelling west of Palisades Avenue, one goes up again to Woodland Street, ascending the second of the “Seven Sisters” hills. The one proceeds down the back slope of the top of the lava sheet to the Dwight-Englewood School, where the edge of a layer of sandstone projects up. As one goes over this edge and down again to Jones Road, one then meets the edge of yet another one of the “Seven Sisters” hills. The succeeding edges of the sandstone layers make succeeding hilly irregularities

that give the back side of the Palisades its “roller-coaster” effect as you go down Palisades Avenue.

Lattimer includes a detailed cross-section of Palisades Avenue from the top west to the Teaneck border on pp. 30 – 31.

For more information about the regional geology

General:

Lattimer, John K. (1990) *This Was Early Englewood*, pp. 25, 30 – 31.

Dustin Griffin “[The History of the Flat Rock Brook Watershed](#)”

Palisades Interstate Park Commission--New Jersey “[Geology and Ecology of the Palisades](#)”

Marcia Anderson/The EPA Blog “[The Palisades: Building Blocks for New York City and the Nation](#)”

Technical:

NJ Geological Survey “[The Palisades Sills and Watchung Basalt Flows, Northern New Jersey and Southeastern New York: A Geological Summary and Field Guide](#)” Open-File Report OFR 92-1

H.R. Naslund “[The Palisades Sill, New York and New Jersey](#)” NYS Geological Association

Dr. Mike Passow: “[Brief Introduction to the Geology of Flat Rock Brook Nature Center and Bergen County](#)”