The geological history of the Indiana Dunes is related to large-scale rises and falls in Lake Michigan’s water level after the last Ice Age. These variations were caused by several factors—the opening and closing of lake outlets and inlets as glacial ice advanced and retreated, the varying precipitation caused by climate change, and the gradual change in the elevation of the ground surface as the weight of the glacial ice was removed (known as “isostatic rebound”).

The most recent of the ancient shorelines, the Tolleston Beach, began to form as lake level rose from an extremely low level—so low that water could not be seen looking north from what is now the modern shoreline. Lake Michigan reached its modern elevation about 6,000 years ago but continued to rise more than 20 feet above today’s level, peaking at about 4,500 years ago. Over the next 100 years, the lake fell more than 13 feet in elevation, exposing sand that was blown up into the high dunes.

Hundreds of relict shorelines (beach ridges) remained as the elevation of the lake rose and fell. These coastal remnants carry past records of varying lake levels. Geologists study these records to understand the modern patterns of lake-level change. Researchers at the Indiana Geological and Water Survey discovered that the high lake levels observed today are part of a pattern established millennia ago.

Few think of Indiana as a coastal state, yet 45 miles of picturesque Lake Michigan shoreline—the Indiana Dunes—sits across its northwestern tip. Diverse in coastal landforms and rich in natural habitats, this stretch of waterfront includes Mt. Baldy, a 125-ft sand dune; the region’s newest national park; a state park; and many opportunities to enjoy the beauty of Indiana’s splendid coast.