Along the southern shoreline of Lake Michigan is a landscape in which rapid change has been the only constant. The climate, the landscape, plants, wildlife, and human activity have all changed dramatically here in recent time.

Climatic Change: An Icy Land Becomes Warmer

Like most places, Indiana Dunes has a geologic history that is millions of years old. Here, though, the land was wiped clean and a new set of surface features emerged in a process that ended about 10,000 years ago. The event responsible for this new beginning at Indiana Dunes was the most recent ice age. Because the landscape was so completely reshaped by that age, all the natural land features seen here today can be explained by it.

When the climate warmed and the great ice sheet melted, the landscape emerged that was just as cold and barren as the North Slope of Alaska is today. This includes fostering the wisest use of our owned public lands and natural resources. As the Nation’s principal conservation authority, whose address is Indiana Dunes National Lakeshore, RR 2, Box 139A, Chesterton, IN 46304, is an immediate charge. Tel. (219) 926-1215.

As the water level fell, great quantities of quartz, a mineral very common on the earth’s surface, were revealed. Wind and waves, taking up where the grinding power of ice had ended, eroded the quartz into smaller and smaller particles. The result was sand—a vast supply of sand that was constantly replenished as the water level fell and exposed to the wind.

Where lake levels remained constant for centuries, water created shorelines complete with sand dunes and steep banks. Geologists can easily spot those old shorelines as they parallel the present-day shoreline some distance inland. For purposes of identification, those temporary lake levels have been given names. Lake Chicago was the name of the most prominent of the extinct levels here.

The Growth Of A Dunescape

Dunes are created whenever three conditions are met: 1. a plentiful supply of sand combines with 2. a wind that almost always blows from one direction and 3. a natural trap—that is, a landscape feature that causes the wind to drop the sand.

Along Lake Michigan, the sand is lifted by northwesterly winds that blow unhindered across the openness of the lake. A short distance inland, however, plants, dunes, and hills slow the wind and cause it to drop its cargo. The result is shoreline dunes. These dunes are generally arranged from lakeshore to inland forest in order of increasing age, though old dunes are sometimes found near the lake. Those located away from the lake (the backdunes) are often hundreds or even thousands of years old. Soil has formed on them and forested slopes cover their slopes. Dunes nearest the lake (the foredunes) are in the process of receiving sand blown up from the beach and are newly formed.

Lakeside dunes, because their sand is constantly being shifted by the wind, are active; inland dunes with sand securely held in place by soil are stabilized. Frequently, trampling or erosion will tear loose the plant cover and soil on stabilized dunes, exposing the sand beneath to the wind. In such cases, bowl-shaped depressions called blowouts are created.

Plants For A Changing Landscape

Many different kinds of environments exist at Indiana Dunes. Because of that, a wide variety of plants grows here. Along the shore are plants that can outreach the shifting sand by growing new roots and runners. Cottonwood trees and marram grass are good examples. Behind the blowing, shifting sand of the foredunes are plants such as jack pine, sand cherry, and cottonwood that grow in dry, infertile places. Further inland, where the soil, wind, and moisture conditions are less influenced by the lake, forests like those in many places across the Midwest are found. Botanists and ecologists call this sequence plant succession when plant types replace each other in one place and biotype succession when plant types succeed each other across a changing landscape. Intersecting among the dunes are wetlands—marshes, ponds, swamps, and bogs. Pinhook Bog, a well-developed sand flat bog typical of the northern lakeshore, is located within the authorized park boundary. The bog, privately owned, is not open to the public.

The Indiana Dunes area has been for many years of great interest to scientists. Here, ecologists like Dr. Henry Chandler Cowles worked out the first theories of plant succession. Botanists also frequent the area because it is an outpost for species that do not commonly grow elsewhere in this area. Nearby alongside one another live southern dogwoods, northern fuchsia barberries, flowers from the Plains, and even cactuses like most places across the Midwest are found.

A Meeting Place For Birds And Mammals

Just as plants and dunes maintain a close relationship, so do plants and birds. At Indiana Dunes are birds that you might associate only with other sections of the continent. Their occurrence here is due to the variety of habitats and to the Lakeshore’s location on a migration route that leads birds north and south along the length of Lake Michigan. The ponds and marshes in the Lakeshore are excellent places to see many varieties of birds, sometimes including such species of the far north as snow buntings and evening grosbeaks and such southern species as Louisiana waterthrushes, Carolina wrens, and mockingbirds. In like manner the presence of prairie-like areas brings in such plains birds as meadowlarks and bobolinks.

The southern shore of Lake Michigan is sometimes an oasis for mammals more common elsewhere, but in general, the wildlife here differs little from many places in the midwest. Deer, raccoons, opossums, woodchucks, squirrels, and chipmunks are seen frequently. There are also reptiles such as frogs, toads, salamanders, lizards, turtles, and snakes. One example of the latter is the harmless but rather threatening-looking hog nose snake, common on the dunes.

For Your Safety

Be cautious when swimming and boating. Most beaches are unprotected and storms sometimes occur quite suddenly. Watch your children especially closely when they are in or near the water. We want your visit to be pleasant.