

NATIVE TREES OF THE KINGS WOODS
Natural History
By Frank DeCarlo

When the first settlers came to our local woodlands they found trees over 150 feet tall. Where can such trees be seen today? In pre-Revolutionary days, the forest covered Palisades and its fine stand of timber first came to the attention of "THE KINGS MEN". In 1685 these forest lands were retained for the Crown and therefore named "THE KINGS WOODS". The "Kings broad arrow" was a mark placed on many of these mighty specimens. This mark, only fanned the flame of revolution in the hearts of the early landowners of those times. Soon most of these lands were cleared for lumber and agricultural use. The forest on slopes or ridges or in areas too wet for cultivation were kept as a source of wood needed for shelter, fencing, household utensils, and heating. Until the middle of the nineteenth century, wood was the only source of fuel. To meet the enormous demand for wood, the woodlands were cut frequently and repeatedly for cordwood. Cutting of woodlands at 20- to 25-year intervals was common. Starting in 1850 the substitution of coal for wood started. Humans did less damage to woodlands, so that the forest were able to recover. Fertile farmland soils eroded away and fields were abandoned to return to woodlands. Natural historians stated that there are more trees now than there were a hundred years ago.

Since their initial occupation humans have proceeded to destroy totally or to modify the natural forest. The forest primeval has long been gone. The earliest real evidence of plants in New Jersey consists of fossils. Fossils of primitive plants dating back to more than 225 million years ago have been found in New Jersey. The types of plants that we know today did not exist at that time. Huge fernlike trees grew in swamps. About 65 to 135 million years ago, plants somewhat similar but still ancestral to those of today grew in New Jersey. Fossils 1.75 million years old give evidence that during this time, plants growing in New Jersey were quite similar to those now found in the latitude of Virginia.

When the glacial ice started to move over the northern part of our state about 1 million years ago, it must have destroyed existing plants. Advancing ice completely overruns the forest, destroying all trees that lie in its path. During the ice age some plants species were able to continue their existence by migrating southward. Those species unable to migrate were exterminated. Some believe that it was so cold in southern New Jersey that only treeless vegetation similar to that found in the Arctic today could have existed. The area could have been Arctic tundra or spruce - fir forest typical of Canada today at some time in our past.

Evolution of THE KINGS WOODS

The last ice sheet was as much as 2,500 to 3,500 feet in thickness and started to melt and retreat from New Jersey about 18,000 years ago. Glacial ice melts caused higher sea levels. Land areas previously covered with vegetation are now inundated with sea water. Evidence of the changing sea level has been found in the Hackensack Meadowlands where remains of a former cedar tree forest are now overlain with tidal marsh grass. The lowest sea levels of New Jersey moved the shoreline to about 100 miles east of today's shoreline.

About 570 to 225 million years ago New Jersey was attached to Africa and Europe as a single land mass called Pangaea. North America then drifted away, and an ocean basin was formed separating North America from Africa and Europe. Water covered New Jersey for millions of years. Land areas previously covered by oceans is identified through the fossils of past marine animal and plant life found embedded in rock. Volcanic activity with lava flows occurred in New Jersey in

the Jurassic period 195 million to 135 million years ago. Magma intrusions resulted in the formation of the Palisades.

"THE KINGS WOODS" of New Jersey are part of the Palisades and it's adjacent lowlands.

The Palisades are made of intrusive or extrusive lava material known as diabase and basaltic rocks. The adjacent lowlands are composed mostly of shale, sandstone and argillite formations. From Precambrian time to the present, varied and complex geologic processes have produced a landscape of diversity in "THE KINGS WOODS". Many variations in relief, in soil parent rock and surface deposit material, in soil types and land drainage have an impact on vegetation.

Plant habitats of THE KINGS WOODS

The word habitat is understood to mean the place in which one plant or a group of plants live. Within any one habitat plants of different species usually grow together.

Based on combinations of environmental factors and the natural landscape, "THE KINGS WOODS" has four different types of terrestrial plant habitats. The Palisades has one habitat that consists of ridges, steep slopes, and rock outcroppings. There are still exposed rock outcroppings, a reminder of the time when the glacial ice stripped the soil mantle and left the rock surface exposed. The second habitat is the upland, which are slopes, hilltops, valleys, and ravines. The third habitat is the fresh water wetlands, which includes marshes, swamps, and flood plains. The last natural habitat is the tidal marshes of the Hudson River and the Hackensack River valley.

The most important factor for differentiation among plant habitats appears to be the amount of water in the soil substrate. The medium in which the plant is rooted. Rock outcroppings are extremely dry sites with too little water and nutrients for most plants. Ridges and steep slopes are sites with limited water and nutrients for plants. Uplands, flats, valley, and gentle slopes are sites with adequate water supply for plants. Swamps and floodplains (wetlands with trees and shrubs) are sites that is flooded occasionally. Marshes are sites that are flooded regularly and have too much water for many plants. There are many species of trees that occur in this areas diverse plant habitats.

"THE KINGS WOODS" is part of the Eastern Deciduous forest of the United States. Its name, Eastern Deciduous, is derived from the fact that the climax forest of the region is dominated by deciduous trees, they outnumbered the coniferous trees. Climax means, forest types that have been relatively long lasting in time. Virgin forest once covered the area but most of it has been destroyed. Humans have displaced most of the natural vegetation and modified the composition of much that remains. Just take a look around your own neighborhood. But it is still possible to find wooded areas that once covered this region. Despite its small area "THE KINGS WOODS" has a diverse variety of trees. The following list is made up of the typical tree species that can be found locally.

Common Deciduous Trees:

Red oak	Sugar maple
Black birch	Black oak
Red maple	White birch
White oak	Sliver maple
Gray birch	Scarlet oak
Box elder	Yellow birch

Swamp White oak	Shagbark hickory
Sassafras	Chestnut oak
Black cherry	Bitternut hickory
Pin oak	Pignut hickory
White ash	American beech
American elm	American chestnut
Flowering dogwood	Ironwood
Hophorbeam	Basswood
Black walnut	Tulip tree
Sweet gum	Sour gum
Sycamore	Black willow
Pussy willow	Shadbush
Black locust	Honey locust
White mulberry	Aspen
Cottonwood(Ailanthus)	

Coniferous Trees:

American larch
Atlantic white cedar
Black spruce
Eastern hemlock
Pitch pine
White pine
Red cedar

Common Shrubs:

Witch hazel	Arrowwood
Blueberry	Spicebush
Maple-leaved viburnum	Stanghorn sumac
Laurel	Multiflora rose
Perperbush	Azalea
Inkberry	Rhododendron