

Calumet Dune Trail

Twelve thousand years ago these gentle slopes made up the Calumet Dune System, at the edge of a much larger Lake Michigan. The dunes gradually became covered with vegetation: first grasses and annual herbs, then shrubs and trees took root. As the Lake level dropped and the beach moved to the north, a forest slowly emerged on these old dunes.

On this short (1 km. or ½ mi.) hike, you will find clues that tell the story of this forest and its 12,000-year history. Reading the signs of the land is an activity that you can learn and enjoy anywhere.



1

Open Sand

A bit of the old dune looks at you on the slope ahead. Notice the mosses, lichens and other plants gradually colonizing the bare sand. Many factors could have exposed this spot: fire, bulldozers, or perhaps children playing games after church (the Visitor Center was once a church). Across the road to your left two more bare patches are scoured by the wind. When dune plants are destroyed, winds can cause severe erosion, creating bowl-shaped *blowouts*. Ahead on the trail you will skirt an old blowout, now reclaimed by the forest. Let's see what else has happened over the last 12,000 years.

2

Black Oak

To get to know this forest citizen, first reach out and feel the rough, corky bark. This thick skin enables black oaks to survive all but the hottest fires. We are discovering that some naturally caused fires are actually valuable. They help recycle nutrients, clear underbrush, and germinate seeds. Many fires, however, are extremely destructive; it takes a trained expert to tell the difference. See if you can find fire scars on other oaks along the trail.

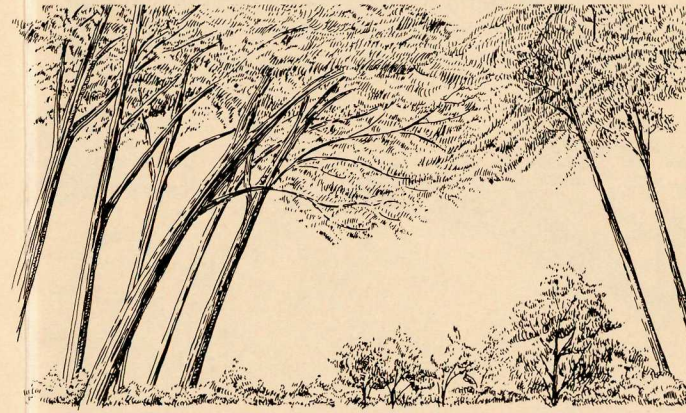
Notice the mosses (dark green) and lichens (pale green) growing on the lower trunk. Mosses prefer wetter conditions whereas lichens like it dry; the combination of the two suggests moderate moisture levels.

3

Old Clearing

You are looking at an ancient *blowout*, which gradually has become forested like the surrounding slopes. Some time ago—probably less than one hundred years—most of the trees in the blowout were killed. Three clues can be used to estimate when the trees died and the clearing opened.

First, we know that the clearing has to be older than the *saplings* or young trees now growing there. Their age can be told by using an *increment borer* to remove a small core from the trunk. Counting the growth rings in the core gives you the age of the tree.



You can also count the number of *terminal bud scars* on a branch. These scars mark the beginning of each year's growth. Unfortunately, the older scars are usually covered with bark and can't be seen.

The first method is more accurate, and gives us an age range of 10-20 years for the sassafras and black cherry saplings. Several years may pass before new trees sprout in a clearing, so we can estimate that this clearing is more than twenty years old.

4

Young Clearing

Notice how the oaks bend away from the small clearing next to the trail. That fact alone tells us that this clearing was made when the oaks were mature trees, already set in their direction of growth. We can confirm that by looking at the fallen logs on the ground. This clearing apparently opened less than ten years ago; we could guess that even if the logs were removed.

Trees bending toward the light, or growing their branches on the side toward the light, can also be seen at the edges of fields, rivers and roads.

5

Meadow Plants

Here in the woods we find grasses and several other plant species normally found in open woods or meadows: mullein, goat's rue, fern-leaved false foxglove, intermediate dogbane and staghorn sumac. These plants suggest that the area has been open for many years. With the forest canopy closing in above, we wouldn't expect to see many of these species here in twenty years.

6

Wetlands

The low wetlands ahead of you (south) are typical of prehistoric northwest Indiana. These wetlands lie between the Calumet Dunes and the Glenwood Dunes—an older system that formed at the Lake's edge about 14,000 years ago.

Thousands of acres of northwest Indiana marsh and swamplands were drained in the last hundred years to allow agricultural, industrial and residential use of the land. But wetlands are rich in wildlife and important for flood control. The National Park Service and other land management agencies are working to save some of the last remaining wetlands.

Bracken Fern

Black Oak

Witch Hazel

Wild Strawberry

Sassafras

Goat's Rue

Mullein

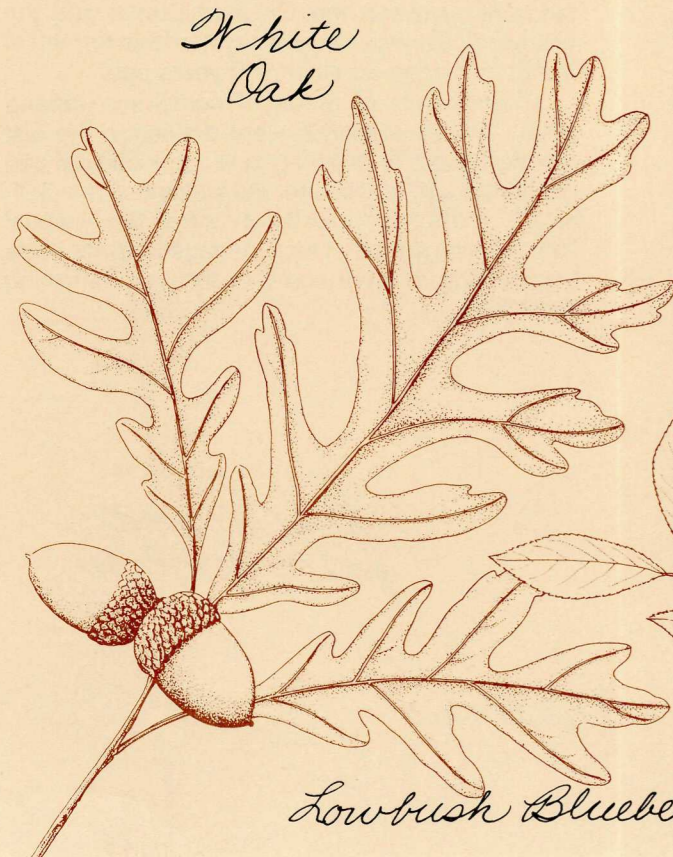
Fern-leaved false Foxglove

7

White Oak

Isn't this a magnificent tree? Its rounded shape is further evidence that this area was once more open. Forest trees tend to grow tall and straight, competing for light, while trees in the open can spread out.

Lumbering has reduced the number of white oaks. Their wood is excellent for shipbuilding, barrels, furniture and firewood; their bark was used to tan leather. Bushy trees like this are scorned by lumbermen, who prefer long, straight trunks.



White Oak

8

Blueberries

Black oaks and blueberries have something in common; they both thrive with periodic fires. Although the National Park Service is considering the controlled use of fires to restore natural systems, it is a job for experts. Smokey Bear's advice still stands.

Common edible berries and fruits in National Parks can be picked for personal consumption only. Be careful you know what you are eating, do not trample other plants, and leave enough for the animals that live here.

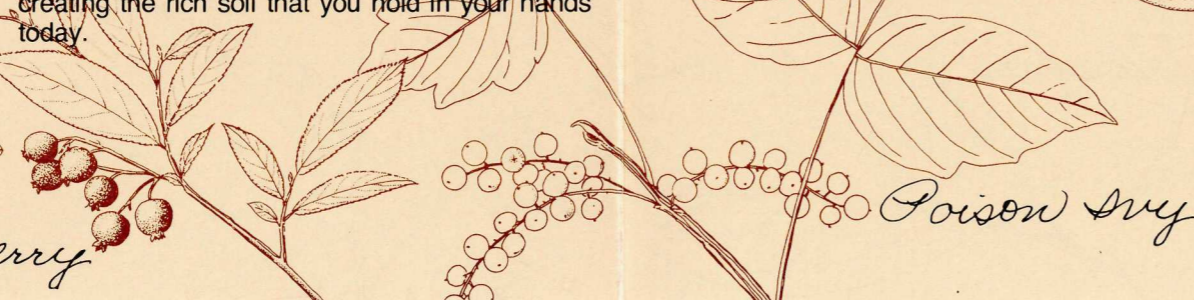
9

Dirt

Here is your chance to meet the wonderful stuff that gave birth to this forest, and to use your senses of smell and touch. Step off the trail a couple feet, find a clear spot, and kneel down. Start investigating the leaves on top of the soil. Are they dry or wet? Do they crackle when squeezed? How do leaves lying a little deeper compare to those on top? Do they have any smell?

Notice what happens to leaves and other *organic* (once-living) matter as you explore deeper. They are being recycled: broken down by fungi, bacteria, worms and insects to feed growing plants. Dirt is truly alive—millions of living things now rest in your hands.

The sand grains in the soil washed up on the Calumet Beach of Lake Michigan. Northwestern winds blew them inland, forming dunes. As plants grew and died, organic matter built up in the sand, creating the rich soil that you hold in your hands today.



Lowbush Blueberry

10

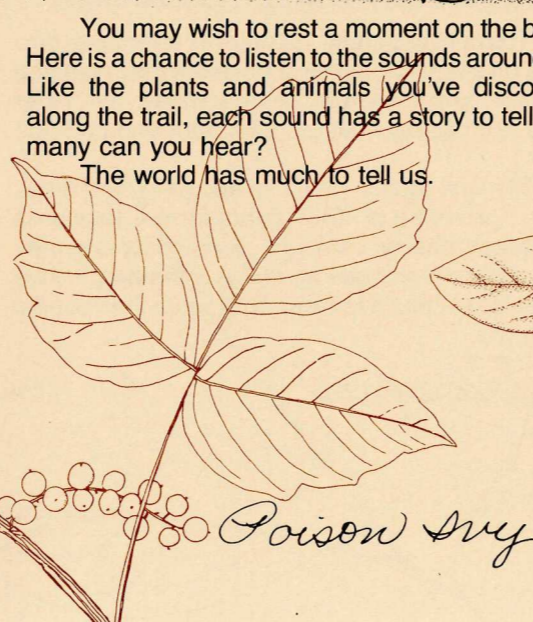
Blowout

Do you recognize the valley in front of you? This is the same old blowout that you met in stop #3. You can tell from the shape of the blowout that dominant winds have long blown from the northwest.



You may wish to rest a moment on the bench. Here is a chance to listen to the sounds around you. Like the plants and animals you've discovered along the trail, each sound has a story to tell. How many can you hear?

The world has much to tell us.



Poison Ivy

11

Wintergreen

This tiny shrub with its dark evergreen leaves tells us of glaciers that were last here over 14,000 years ago. For this little plant came south with the glaciers, and is a survivor of those cold and wet glacial periods.

12

Tulip Poplar

Whereas wintergreen survives from the glacial periods, the tulip tree arrived here during the warmer and drier periods between glacial advances. It grows best in rich soils, and its presence often led to the choice of an area for farming.



Tulip Tree

Wintergreen

13

Beach

You are near the end of the trail. If you look down the slope (crouch down—it is easier to look under the shrub layer) you can see what was once the Lake Michigan beach. After the Lake level dropped, the Calumet Dunes supported a major Indian trail; much later the trail became a road connecting Fort Dearborn (now Chicago) with Detroit. Today it is U.S. Highway 12, running the length of the Park.

You have been introduced to a few ways to read the story of the land. The following books will help you to further explore your world:

—**Reading the Landscape**—May Theilgaard Watts (Collier Macmillan, 1975)

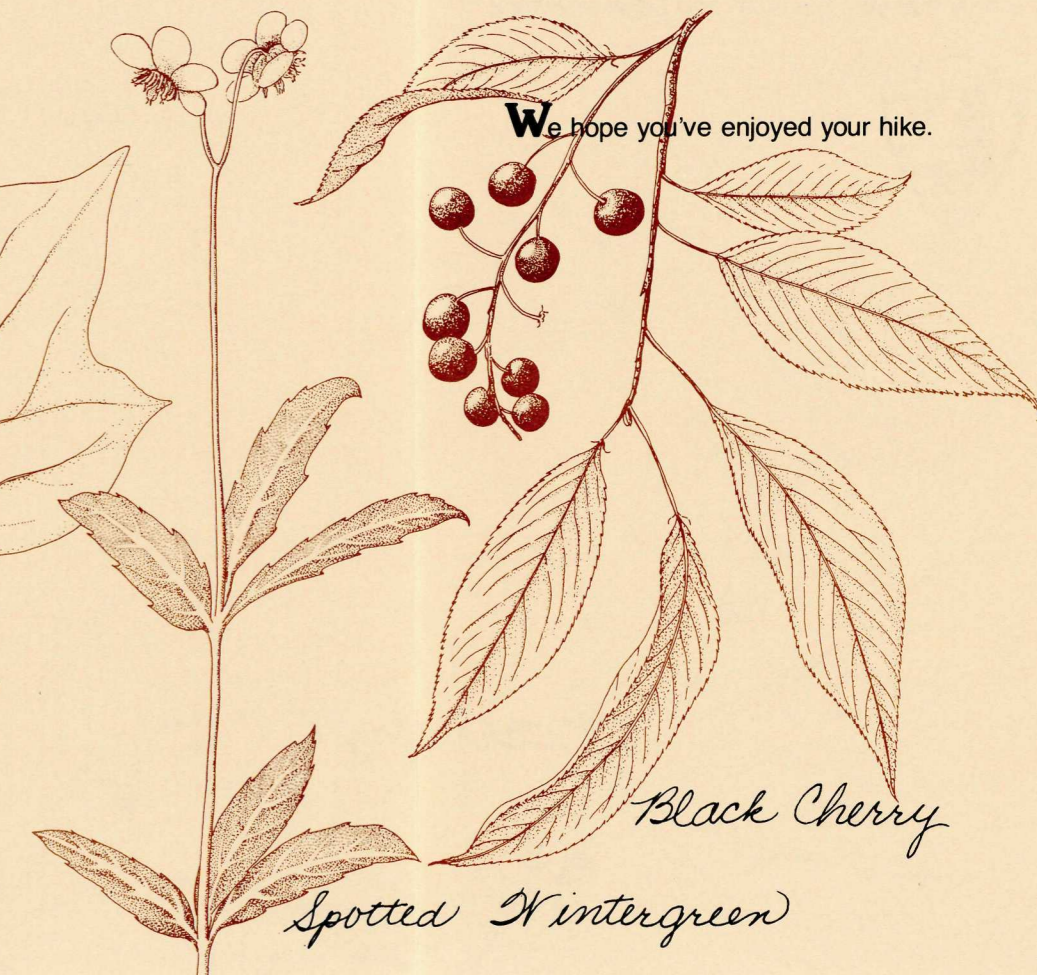
—**Reading the Woods**—Vinson Brown (Stackpole, 1969)

—**Sharing Nature with Children**—Joseph Bharat Cornell (Ananda, 1979)

—**Dune Country**—Glenda Daniel (Swallow, 1977)

—plus numerous field guides and other natural history books.

Many are available in our Visitor Center Bookstore.



Black Cherry

Spotted Wintergreen

We hope you've enjoyed your hike.