

## Fall Color Audio Tour Transcript

### East Side Main Loop

[Narrator] Welcome to this driving tour of the Arboretum's East Side. Be sure to stay on the main road and bypass any turns to alternate routes.

[Narrator] Please take a few minutes to adjust your volume now. This tour works best when experienced between 10 and 15 miles per hour. While you shouldn't have to adjust your audio too much you'll have a chance at each of the major landmarks on this route to pause and continue. In the meantime be sure to follow all posted signs and rules of the road.

[Music]

[Jim] Hello, welcome to The Morton Arboretum. My name is Jim and I'll be one of your interpreters on this tour. But first let me give you some background and general information which I think will help you better appreciate this living museum. The Arboretum's namesake, Joy Morton, was born to J. Sterling and Caroline Joy Morton in Michigan in 1855 and later moved with his family to Nebraska. His dad was a tree lover and established Arbor Day.

[Jim] Joy moved to Chicago in 1878 as a 23-year-old seeking to become an entrepreneur. After misses in several industries, he bought a small salt distribution company, renamed it Morton Salt and amassed a fortune. In 1909, Joy Morton bought the first acreage of what was then farmland to build a country home and live his dream of planting trees. By the time he was 66 years old he decided to leave a legacy beyond salt. He reached out to the director of the Arnold Arboretum at Harvard University and the both of them planned what was to become this Arboretum.

[Jim] In 1922 Mr. Morton officially opened The Morton Arboretum. Always a man with big plans, Mr. Morton wanted this Arboretum to be among the most respected in the world. And we continually strive for that goal by collecting and researching woody plants and then educating the public while working with scientific communities worldwide on the value, health, and well-being of plants. And that is why we consider ourselves to be champions of trees.

[Jim] Moving on, you'll come to Frost Hill. At its crest you can look across to a high stand of conifers on the horizon. Everything between you and those trees is a part of the Arboretum! Our plants are grouped into three categories. Those categories are taxonomic (or family), geographic (representing the geography from which they originate), and special (which includes plant size soil requirements and horticultural traits).

[Jim] After Frost Hill, the first family collection is the conifers. You probably know them as evergreens or pine trees but conifers—so named because they bear their seeds in cones -include spruce, larch, pine, cypress, redwoods, cedars, junipers, arborvitae, and yews. Except for the larch, dawn redwood, and bald cypress, conifers hold onto their needles all year.

[Jim] One other very important thing about woody plants: They serve as the lungs of the earth. They trade oxygen for carbon through their leaves. Woody plants are estimated to produce about half the oxygen in our world. Phytoplankton in our oceans is roughly responsible for the other half. That's why it's important to keep our trees and our oceans healthy.

[Jim] Our crabapple collection is next and on both sides of the road. It was started in 1959 and it's well known throughout the botanic community for its diversity of crabapple types. Now the difference between a regular apple and a crab apple is size. A crab apple is less than two inches in diameter—any larger and it's just a standard apple.

[Jim] Just across from Crabapple Lake is our magnolia collection. Magnolias have exceptionally large flowers which can be creamy white, purple, or yellow, and their fragrance is in a league of its own. We have some 40 different kinds of magnolias in our collection. You know, magnolias have the distinction of being among the oldest woody plant species on earth. They date back some 90 million years and are believed to pre-date the emergence of bees which later served to pollinate the flowers and harvest the nectar.

[Music]

[Jim] Our next attention-getter is Crowley Marsh, on the left of the road. If woody plants are the lungs of the earth, then wetlands are the kidneys of the earth. Wetlands filter out toxins to produce healthy groundwater and they absorb floodwaters while serving to be the nestlands and homelands for insects, reptiles, mammals, and birds—particularly waterfowl.

[Music]

[Jim] Check out that structure just past the buckeyes on the left. Notice the rounded tops' resemblance to a honeycomb? Other than being aesthetically pleasing, it designates our linden tree collection. Now what does a honeycomb have to do with a tree? Simply put, bees love linden trees! In the summer the trees are covered with beautiful, heavily scented yellow flowers that draw lots of honey bees. Beekeepers have long argued that the nectar collected from linden flowers produces the sweetest and purest honey.

[Jim] Our oak tree collection is next. It was started in the 1930s and covers 12 acres containing 56 different varieties of oaks and more than 200 specimens from North America, Asia, and Europe. The collection also contains 17 of the 21 oak species native to Illinois.

[Jim] As you experience our oak collection you will see a number of trees with silver bands around their trunks. These are called dendrology bands and they measure the growth of the oaks. It's part of the

research being conducted by the Arboretum in conjunction with a number of botanic gardens and scientific agencies throughout the United States.

[Music]

[Jim] One of our newer exhibits is just past the oak collection called the Gateway to Tree Science. It represents the scientific research supporting the best tree care and management practices. I highly encourage you to spend some time in the Gateway to Tree Science; you're going to be amazed at what trees can teach you.

[Jim] I want to thank you for listening. Enjoy your time here; we hope you visit us often and join us as a champion of trees.

[Narrator] You should be nearing parking lot 8 and the Gateway to Tree Science. The next section of the tour begins there. Feel free to pause and pull over if you're running ahead or tap on number two if you're running behind.

[Greg] Hello, my name is Greg and I'll be your guide for this section of the tour which will take us from the entrance of the East Woods at parking lot 8 to the Big Rock Visitor Station. The East Woods are a 400-acre natural area located on the East Side of the grounds here at The Morton Arboretum. Did you know if 10 to 50 of an acre has tree cover it is known as a savannah; an area with 50 to 80 percent tree cover is a woodland; and an area with 80 to 100 tree cover is a forest? The East Woods consists mainly of savannas and woodlands.

[Greg] As you enter the woods, one of the first things you may notice is the stark difference in the undergrowth on the left side of the road versus the right. On the left side, there is a lot of very dense undergrowth: young trees and shrubs crowd together and there is very little sunlight penetration. On the right side, however, there is very little undergrowth. Instead, there is a nearly uniform layer of wildflowers and a great deal more sunlight reaching the woodland floor. This is because the right side of the road is managed by a team of staff and volunteers who come through regularly and remove invasive and non-native species which are competing with native trees and flowers for nutrients and sunlight.

[Greg] Another management technique used by our staff is prescribed fires. Prescribed fires are conducted by trained staff in the spring and fall when the weather is mild and humidity is low. Though decades of research has been conducted on prairie burns, there is still much to learn about using fire in woodlands. The Arboretum has led the environmental restoration industry in research into the techniques and benefits of prescribed fires.

[Greg] Interjected in the midst of the woods is a large, open space with fields on both sides of the road. The field on the right side of the road is home to a stand of young oak trees which are growing near the woodline and will one day form an oak savannah.

[Greg] One other thing you may notice in the woods besides charred logs is all the fallen trees. You might think, "Hey, isn't this supposed to be managed?" The answer is yes, those fallen trees are being taken care

of—by mother nature. Unless a tree has fallen across a public space or poses a hazard to guests we leave it where it is and let decomposition do its thing. The process of fungus, bacteria, and insects breaking down the dead wood allows the nutrients in it to return to the soil and feed the next generation of trees. Standing dead trees and fallen trees also provide homes for many of the animals and birds we have at the Arboretum, including possums, raccoons, squirrels, woodpeckers, and more.

[Greg] Speaking of birds, the Arboretum is a great place for bird watching. Sightings of over 200 different species of birds have been recorded here over the years and we have about 40 different species of birds that make their homes here throughout the year.

[Music]

[Greg] There's a lot of history in the East Woods. Originally called King's Grove after settler Sherman King, the area was once divided into 100 different woodlots which were given to settlers who bought land on the prairie. Settlers often had to travel sometimes for days to access their woodlots. When they got there they generally began cutting down the native oak and hickory trees for timber to build homes, tools, and wagons. Hickory wood, for example, is very strong and makes great axe handles and wagon wheel spokes. It also has a high BTU count, which means that it burns very hot relative to other woods. This is of course very important if you want to keep your cabin warm during a midwest winter.

[Greg] There were also sugar maples in the old King's Grove. Settlers tapped the largest trees for sap to make maple syrup rather than cutting them down. The descendants of those trees now dominate much of the East Woods, resulting in some spectacular fall colors. Sugar maples are very weedy trees and can grow close together with limited sunlight. They will grow straight and tall, with only a few branches at first, reaching for sunlight until they find it and then spreading out to form a high canopy. You can observe this growth habit very clearly near another point of interest in the East Woods: the spruce plot.

[Greg] The spruce plot is a mixed stand of white spruce, blue spruce, and Norway spruce trees that was planted by the Arboretum's founder, Mr. Joy Morton, in the early 1920s as an experiment. He hoped to cultivate the trees and sell them to the lumber industry but the story is that the spruces never got tall enough and so we have them to enjoy today.

[Greg] The spruce plot is extremely interesting because it has its own microclimate. That means that it may be as much as 5 to 10 degrees cooler in the middle of those trees than it is on the rest of the grounds. That's because the trees act like natural air conditioners! They are, after all, long, straight tubes with water flowing up and down them and air blowing in between—which is essentially an air conditioner.

[Music]

[Greg] I hope you enjoyed this virtual tour of the East Woods; I hope you learned something. Thanks for listening!

[Narrator] You should be nearing the parking lot at Big Rock Visitor Station. The next section of the tour begins there. Feel free to pause and pull over if you're running ahead or tap on number three if you're running behind.

[Vicki] Hi, folks, my name is Vicki and I've been a member of The Morton Arboretum for around 30 years but it's been my privilege to share the stories of the Arboretum with guests on the Acorn Express for the past five years. Today I'd like to start at P-13, the Big Rock Visitor Station.

[Vicki] Much of the land on the East Side of the Arboretum had been used as farmland when Joy Morton acquired it. We don't farm here at the Arboretum so some of that farmland has converted back to its natural state. At the top of the hill, just past the Big Rock Visitor Station, you can see a beautiful wetland that has reclaimed its spot. Look behind that wetland and you will see a treeline that represents Illinois' ancient tree canopy, the oak woodland.

[Vicki] Before settlement about 86 percent of our woodland trees were oak species. Today oaks comprise only 17 percent. Oaks are a keystone species, supplying food and shelter for life both above and below ground. That is why The Morton Arboretum has targeted oak conservation and sustainability as a major focus of our work. [Vicki] Standing on its own further down the road from the wetland at P-14 is a sugar maple that is probably the most familiar tree at the Arboretum. In autumn it's probably one of the most visited trees because of the beautiful red and orange leaves that seem to glow in the sunlight. Each year many guests ask me when is the best time to visit for fall color. My answer is always the same: It depends! First of all it depends on the species of tree; different trees change at different times. Buckeyes are one species that change color and drop leaves early, sometimes as early as late August. Oaks change to their orange and rusty brown much later in the season and hold onto many of their leaves well into February.

[Vicki] Color also depends on the weather. For the best color in our area we need sunny days, cool nights, and adequate rainfall. This year we've had a dry summer so we may have to keep our fingers crossed for a little more rain to come. The East Woods are a favorite place for our guests during fall.

[Vicki] As you travel the road from P-14 to P-16 you enter another section of the East Woods that is a mixed hardwood woodland. Unlike the north woods of Wisconsin and Minnesota that have coniferous forests with large stands of pine and spruce, our native woodlands are deciduous. Here you'll find a variety of hardwoods: oak, maple, ash, walnut, and hickory. Throughout the spring and summer you will find an abundance of green in this woodland but as we move into fall you will begin to see color where the sun shines most: the top of the tree canopy and the edges of the woodland.

[Vicki] As living organisms, trees have senses like we do. They can sense both light and temperature. As the nights get cooler and the daylight hours shorten trees know it is time to prepare for winter. Trees begin to stop production of chlorophyll, the substance that gives leaves their green color. Unlike animals, trees can't hunt or gather their own food; they're stationary. They make their own food through the process of photosynthesis, a process which uses chlorophyll, water, carbon dioxide, and sunlight to produce sugars and carbohydrates which feed the tree. The excess oxygen created by this process is expelled into our atmosphere and makes life possible for humans and other animals. The excess carbon is used to create the plant's cellular structure. The tree turns carbon into roots, trunk, limb, branch, and leaf.

[Vicki] As chlorophyll production stops and it begins to leach from the leaves, the original colors of the leaves are revealed. You may see some yellows, rust, and browns. So the color of the leaves doesn't change, it emerges! But what about the vibrant crimson, burgundy, and reddish-orange we see? Trees have another trick to perform as they prepare for winter: Trees create a seal between the stem of the leaf and the new leaf bud which allows nothing to enter or exit the leaf until it falls from the tree. Excess sugar becomes trapped in the leaves during this time and breaks down into a chemical called anthocyanin. It is this chemical, anthocyanin, that gives the dying leaves their brilliant red color. That is why trees such as the sugar maple create such a beautiful palette from yellow to orange to red.

[Vicki] As you enjoy your visit today look all around you—at the grasses in the fields, at the marshes, at the shrubbery along the margins of the woodland, at the native grasses and wildflowers in the prairies—you will see a bounty of color everywhere, making this one of our most popular seasons at The Morton Arboretum. Enjoy!

[Narrator] This concludes the East Side tour. To enjoy more of this tour of the Arboretum, continue past the main visitor center parking lot, bear right to go under the bridge, and start either one of the West Side tours.