

131ST ANNUAL ACADEMY MEETING¹
Presidential Plenary Address by Michael A. Homoya²
“INDIANA 1816 – CONNECTING WITH OUR PAST, PRESERVING FOR OUR FUTURE”

Although some text has been added, the following generally adheres to the outline and content of Michael Homoya’s presidential address given at the 131st Annual Academy Meeting held in Indianapolis on March 26, 2016. Citations have been added.

INTRODUCTION

In 1916 the annual meeting of the Indiana Academy of Science (IAS) occurred during the centennial anniversary of Indiana’s statehood. The IAS president reported on the general advancements in science that had occurred worldwide (Bigney 1917), while others addressed advancements made in Indiana during the previous 100 years, e.g., Evermann (1917) and Coulter (1917) on zoology and botany, respectively. They all make for interesting reading, but it was a presentation given in 1895 by the principal founder of the IAS, Amos Butler, that intrigued me most (Butler 1896). His presidential address, titled *Indiana: A Century of Change in the Aspects of Nature*, was also a centennial piece of sorts, but not one regarding the 100th anniversary of statehood. It was rather a description of landscape changes starting with the influx of settlers beginning in the late 1700s.

For him to know that those changes had occurred require knowledge of what existed previously. By the time Butler was born in 1860, much of Indiana’s aboriginal landscape was already cleared and developed, so while he hadn’t seen first-hand the conversion that had taken place prior to his life, he did have access to settlers still living that did. He also had available written accounts provided by explorers, pioneers, and government surveyors from as early as the 1600s. From those resources he was able to contrast his contemporary landscape to that which had occurred a century earlier.

¹ J.W. Marriott, Indianapolis, IN, 26 March 2016.

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This year, 2016, is Indiana’s bicentennial, and I would like to return to the topic, to remember a land of vast forests, expansive wetlands, clear flowing waterways and lakes, and prairies stretching across the horizon as far as the eye could see; to remember a time when herds of bison traveled ancient paths, passenger pigeons darkened the skies, and wolves, bears and panthers roamed the land.

Join me as we turn the clock back more than 300 years and begin with what may be the earliest first-person written account of Indiana’s landscape.

THE FRENCH CONNECTION

In December 1679, while traveling in a canoe with La Salle and others down the Kankakee River, Fr. Louis Hennepin described floating through a seemingly endless expanse of treeless wetlands (Shea 1880). “It [the river] takes its course through vast marshes, where it winds about so, . . .” He also described travelling on that tortuous river for a whole day and had “not advanced more than two leagues [ca. 8 kilometers (5 miles)] in a straight line.” It was expansive, as he said that “As far as the eye could reach nothing was to be seen but marshes full of flags and alders.” They were traveling through what later became known as the Grand Kankakee Marsh, an area of vast marshland estimated to be over 200,000 hectares (≈ 500,000 acres) in extent. So vast it was that some have referred to it as the “Everglades of the North.”

THE BRITISH ARE COMING!

In subsequent years many others followed Hennepin, entering the state mostly via a variety of water courses, particularly the Ohio and Wabash rivers. One trip resulted in what is thought to be the earliest known painting of the Indiana landscape (Fig. 1). It was made during a trip down the Wabash River by British military lieutenant Henry Hamilton on his way to Fort Sackville in Vincennes. During one of his encampments he took time to illustrate a limestone promontory jutting into the Wabash. Indicated on today’s USGS



Figure 1.—“View of Wabash.” This 1778 sketch by Henry Hamilton is a site now known as Rock Island near Logansport, Indiana. It is believed to be the earliest depiction of Indiana’s landscape still extant. (Original: MS Eng 509.2 (32), Houghton Library, Harvard University. This image was obtained from <http://oasis.lib.harvard.edu/oasis/deliver/~hou00125>.)

topographic maps as Rock Island, Hamilton’s painting shows a cliff shaped somewhat differently than today and an open understory in the forest (compared to the rather dense understory present now). This is possibly the result of artistic license, but very possibly it depicts reality, as some natural breakdown of the cliff has likely occurred since then as well as succession of plant growth. Regarding the latter, the openness of the understory could be attributed to thinning by fire. Indigenous peoples were known to have used fire as a means of “cleaning” out brush and trees.

PUBLIC LAND SURVEY

Approximately 8 million hectares (\approx 21 million acres) of Indiana’s 9 million hectares (\approx 23 million acres) is believed to have been forested. Forests extended statewide except in the northwestern part of the state where prairie prevailed. We know this in great part due to the work conducted by surveyors of the U.S. Government’s Public Land Survey (PLS).

Beginning in the late 1700s in the southern half of the state and into the 1840s in the north, practically the entire state was marked off into square mile sections as part of a system forming townships. The surveyors took notes regarding the land’s suitability for farming (e.g., 1st rate, 2nd rate, etc.), kinds of trees present (if in timber) and presence of prairie or other natural features, including rock outcrops, water features, and even pigeon roosts. The notes, available for viewing at the Indiana State Archives

in Indianapolis, are the best source of information that exists anywhere for specific locations of natural features on the ground.

I find the notes’ main value helps us know the original plant composition of a site, at least as it existed 200 years ago. For example, save for a few planted trees and exotic ornamentals no natural vegetation presently exists at the state capitol campus in Indianapolis. There’s no clue what grew there naturally. Information provided by PLS surveyors provides a good idea however.

In 1820 surveyor W. Laughlin wrote about a section line within a half of a block of the Capitol noting: “Land 1st Rate, Ash, Walnut, Sugar, &c., undergrowth Spicewood, Prickly Ash, &c.” (notes for the line between sections 2 and 11, Township 15 North, Range 3 East ; Fig. 2). At the point where section lines 1, 2, 11, & 12 intersect, Circle Centre Mall now stands. It was there in 1820 that the surveyor noted a black walnut (*Juglans nigra*) with a diameter 12 inches at breast height (dbh) and an elm (*Ulmus* sp.) 24 inches at dbh. These trees are known as bearing or “witness” trees, ones used by subsequent surveyors and settlers to help locate the section corner.

Those trees weren’t particularly large, but there were larger ones in the area (1/2 mile away the surveyors recorded a black walnut with a diameter of 44 inches; Fig. 2). Elsewhere in the state surveyors recorded trees of greater diameter. Of particular note was an approximately 8 foot diameter American chestnut (*Castanea dentata*) located in southern Perry County. American chestnut was once common in southern Indiana and the eastern United States but is now practically absent due to chestnut blight.

The species mentioned most often in the literature as the largest tree in the early Indiana landscape was American sycamore (*Platanus occidentalis*). In the early 1800s several travelers, including Michaux (1805), James (1823) and Maximilian (see Witte & Gallagher 2008) noted large sycamore trees over 12 feet in diameter occurring in the Wabash and Ohio River floodplains. The largest tree known to me, at least in terms of diameter, was one measured in the Ohio River floodplain of southern Harrison County (Pickett 1828). It was almost 21 feet in diameter! Trees of that size, of any species, are no longer present in Indiana.

Also gone from the Hoosier landscape are the various natural grassland types. Most of the early writers referred to them as prairies, or barrens, the latter typically containing a mixture of grasses and forbs that characterize prairie as well as hosting an

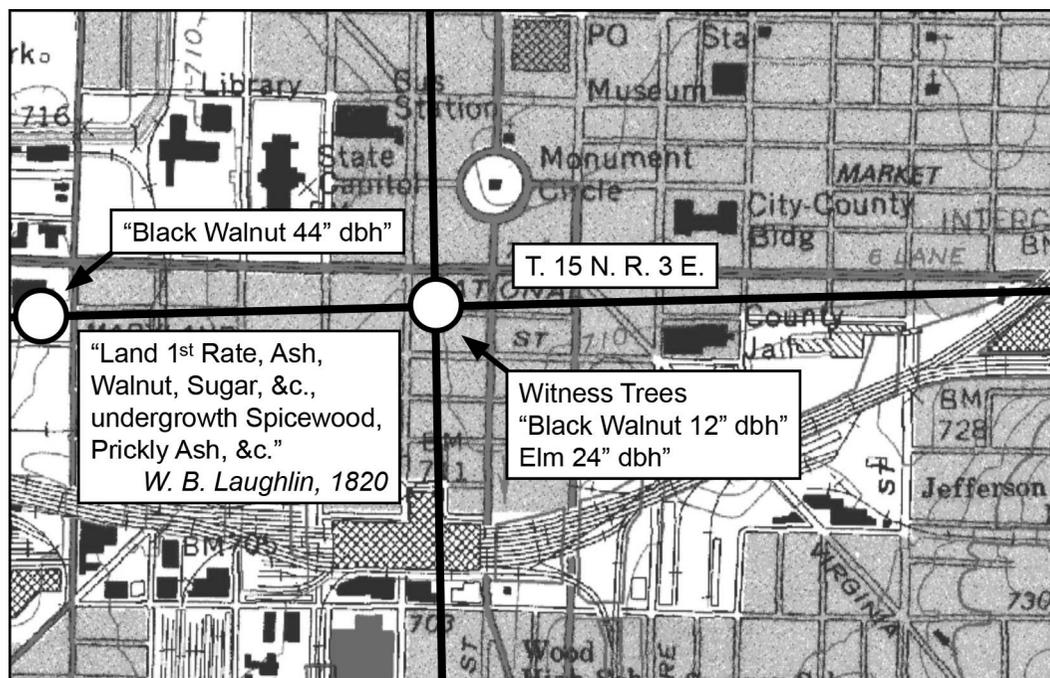


Figure 2.—Notes on the vegetation of land now occupied by downtown Indianapolis as recorded in 1820.

assortment of scattered shrubs and trees. Occurrences of native grasslands existed throughout the state, albeit rather sparingly in most areas except in the far northwestern counties. In those counties prairie was dominant, especially in what is now Benton County, where one could travel for tens of miles through prairie and see few if any trees save for an occasional prairie grove. Today, because of conversion to agriculture, almost none of the land formerly occupied by prairie retains native vegetation.

GRAND PRAIRIE AND THE BIG BARRENS

The vastness of the prairie land in northwestern Indiana and adjacent Illinois caused some people to refer to it as the Grand Prairie. Modern day remnants, however so small, indicate that it must have been beautiful beyond imagination. Several early observers confirm such an impression. “Its surface was undulating like the waves of the sea after a storm, and covered with luxurious grass interspersed with wildflowers of every hue. Around and completely inclosing and seemingly protecting it, stood the forest. I have seen since then many parks of great natural and artistic beauty, but none so charming as was the rolling prairie on that bright morning in June.” (McCulloch 1889). McCulloch,

who became Secretary of the Treasury under Abraham Lincoln and two subsequent presidents, was reflecting about a particular prairie in La Porte County.

At the other end of the state was another large area of natural grassland. Occupying over 32,000 hectares (\approx 80,000 acres) in the karst plain of central Harrison and Washington counties (Keith 1983), this “Big Barrens” region was similar to the northwestern prairie in its diversity of species. The physician and botanist Asahel Clapp of New Albany wrote that the barrens had, “A much greater number of species . . . than I have observed in any other place. It is indeed like a botanic garden but much more interesting.” (Clapp 1836).

The barrens region was crossed by the Buffalo Trace, a trail connecting Vincennes and Clarksville that was thought to have been created by bison herds moving across the state to and from salt licks in Kentucky. Bison were certainly seen on the trace, whether they created it or not. On 4 October 1787, Joseph Buell wrote while travelling the Trace on day three after leaving Vincennes for the Falls of the Ohio: “In our march to day, came across five buffaloes. They tried to force a passage through our column. The general ordered the men to fire on them. Three were killed, and the others wounded.” (Hildreth 1848). Although there are reports of



Figure 3.—“Confluence of the Fox River and the Wabash.” In 1832 Karl Bodmer painted this landscape located near New Harmony, Indiana. Note the Carolina Parakeets (*Conuropsis carolinensis*) on the vines attached to a large American sycamore (*Platanus occidentalis*). (Original is housed at the Joslyn Art Museum in Omaha, Nebraska. This image was obtained from https://commons.wikimedia.org/wiki/File:Confluence_of_the_Fox_River_and_the_Wabash._Watercolor_by_Karl_Bodmer_1832.jpg)

bison in the state after 1800 most if not all were likely gone by then. Some of the other prominent animals once established in Indiana but now absent include elk, mountain lion, Greater Prairie Chicken, American black bear, gray wolf, Common Loon, and the now extinct Carolina Parakeet and Passenger Pigeon.

BIRDS OF A FEATHER

There are several firsthand accounts of Carolina Parakeet observations in Indiana, most made in the early 1800s. Of particular interest is a painting that includes them made by Karl Bodmer. The scene is of the mouth of the Fox River as it enters the Wabash River near New Harmony and it depicts Carolina Parakeets perched on vines draped on branches of a sycamore tree (Fig. 3). Prince Maximilian, a scientist with whom Bodmer was travelling, wrote in his journal that on 25 October

1832 “Mr. Bodner sketched on the [Fox] island where he saw the parakeets.” (Witte & Gallagher 2008). Also in southern Indiana, near French Lick, William Blane (1824) reported, “I saw a large flock of beautiful green and yellow parroquets. These were the first I had met with; and they are very tame, and allowed me to come close to them. I got off my horse, and stopped a short time to admire them.” It appears that the last record of a Carolina Parakeet sighting made in Indiana was in 1859 (Butler 1898). The last known individual of the species died in 1918 at the Cincinnati Zoo.

Flocks of Passenger Pigeons harbored billions of individuals and were described by many observers as darkening the sky by their numbers. Famed ornithologist and artist John James Audubon, while on the left bank of the Ohio River across from Harrison County wrote that in the autumn of 1813 he observed that “The air was literally filled with



Figure 4.—Passenger Pigeon painted by J.J. Audubon in 1809 from the Falls of the Ohio near Clarksville, Indiana. (Original: MS Eng 509.2 (49), Houghton Library, Harvard University. This image was obtained from http://oasis.lib.harvard.edu/oasis/deliver/deepLink?_collection=oasis&uniqueId=hou00007.)

Pigeons; the light of noon-day was obscured as by an eclipse....” (Audubon 1831) (Fig. 4). The Passenger Pigeon has been considered by some to have been the most numerous bird in North America if not the world. It is almost unfathomable that a species once so abundant would become extinct – and in such a short time. Almost exactly a century after Audubon’s observation, in a zoo not far from where he observed that phenomenal flight, the last known Passenger Pigeon drew its final breath. Interestingly, the last verified wild Passenger Pigeon, both in Indiana and the world, was taken from near Laurel in 1902 (Butler 1913; Greenberg 2014).

Famed Hoosier novelist Gene Stratton Porter also wrote about Passenger Pigeons and many other birds that lived in the swamplands near her home. She was somewhat of an anomaly for her time, writing passionately about swamps and the organisms they harbored while others were vigorously draining them. In her book titled *The Moths of the Limberlost* (Stratton-Porter 1912), she wrote: “To me [the swamp] has been of unspeakable interest, [a source of] unceasing work of joyous nature....” She was certainly one of the early residents of our state to recognize that our natural

landscape was rapidly disappearing and in her own way made the call to appreciate and protect it.

Others were too, including prominent members of our Indiana Academy of Science.

PRESERVING FOR OUR FUTURE: AWARENESS, THE ASK, AND ACTION

Since its existence, the Academy of Science has been at the forefront in proclaiming the importance of preserving Indiana’s natural features. I will mention three people in particular that have played important roles in this regard. All were presidents of the IAS and it is from each of their presidential addresses that I draw the following.

AWARENESS

Amos Butler, a founding father of our organization, was one of the first to talk about the diminishing existence of our state’s natural land and associated biota. It is quite clear that he was very aware of the consequences caused by the growth and development that had taken place in the previous century. I quote his 1895 address given at the 11th IAS Annual Meeting entitled: *Indiana: A Century of Change in the Aspects of Nature:*

“Removing the timber and breaking the ground began to show their effects upon the springs and water courses. Many became dry during the warm season. All life, be it salamanders, fishes, mollusks, insects or plants, that found therein a home, died.” He continues: “The birds that lived among the reeds and flags, mingling their voices with the frogs, disappeared, and the land reclaimed, tells, in its luxuriant growth of corn, no story to the casual passer-by of the former population which occupied it.” (Butler 1896). As Butler and others became aware of the tradeoffs that came with a growing civilization, they began contemplating ways to save the remnants of aboriginal Indiana.

But who would get it started?

THE ASK (OR THE COMMAND?)

Charles Deam, Indiana’s preeminent botanist of the early 20th century and the state’s first state forester, was one of those people lamenting the degradation and destruction of Indiana’s natural areas. In his presidential address during the 40th IAS Annual Meeting, Deam makes a clear plea for protection by stating: “Further I would urge, that the state purchase tracts in our botanical areas and preserve them as laboratories for the study of our native flora and fauna. . . . This generation has no idea how much these [natural] areas will be worth in the future, and we should present them these areas as a gratuity, if not from a sense of moral obligation. The total cost of such wild life laboratories would not equal the cost of a mile of concrete road, and their educational and economic value will more than justify the expense.” (Deam 1925).

But would it happen?

ACTION

Deam’s urging was somewhat satisfied by the establishment of Indiana’s system of state parks starting in 1916 with the creation of McCormick’s Creek State Park, but it became apparent that more land was in need of protection. By the 1960s there was a ground swell of interest in the environment, including protection of natural areas that didn’t necessarily fit the criteria used for the creation of state parks, e.g., expanded recreational use or large size. In 1967 Alton Lindsey, Damian Schmelz, and Stanley Nichols embarked on an extensive inventory of the state to locate the best of the variety of natural community types known to exist. That work resulted in the monumental publication *Natural Areas in Indiana and Their Preservation* (Lindsey et al. 1969). It was an

impetus, among other things, that led to the creation of a state nature preserves system. Lindsey, in his presidential address to the membership at the 83rd IAS Annual Meeting, outlined it all under the title: “Indiana’s New System of Scientific Areas and Nature Preserves.” (Lindsey 1968).

The system he referred to was the result of the Nature Preserves Act, a law passed by the state legislature in 1967 (IC 14-31-1 – 1967 Nature Preserves Act) with bi-partisan support to protect high quality natural areas. This spawned the Indiana Division of Nature Preserves, and from its humble beginnings with a two person staff and one preserve (Pine Hills Nature Preserve) the Division has grown to oversee a program that now numbers 274 state dedicated nature preserves protecting over 50,000 acres.

Thanks to the work of many, especially by certain members of the Indiana Academy of Science and the organization itself, there has been meaningful progress in preserving our natural heritage for future generations. It is my hope that such progress will continue and that all of you will be part of it in some way.

Thank you.

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