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A detailed illustration of two pigeons perched on a dark, gnarled branch. The pigeon in the foreground is smaller and has a reddish-brown head and neck, with a body that is a mix of green and brown. The pigeon behind it is larger and has a more vibrant, iridescent appearance with shades of purple, blue, and red. The background is a soft, textured wash of light colors.

## Passing of the Pigeons

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# Feathered Farewell

Once the most abundant — and perhaps most rural — bird on Earth, the now-extinct passenger pigeon filled skies across Pennsylvania until excessive hunting for food and sport, destruction of traditional breeding grounds, and perhaps natural catastrophe led to its demise nearly a century ago

by Perry Stambaugh

Editor

“I dismounted, seated myself on an eminence, and began to mark with my pencil, making a dot for every flock that passed. In a short time, finding the task which I had undertaken impracticable, as the birds poured by in countless multitudes, I rose and [counted] that 163 dots had been made in 21 minutes.

“As I traveled on, the air was literally filled with pigeons. The light of noon-day was obscured as by an eclipse, and the continued buzz of wings had a tendency to lull my senses.

“Before sunset I reached Louisville, Kentucky. The pigeons [subsequently estimated at 1 billion] passed in undiminished number, and continued to do so for three days in succession. The people were all in arms. The banks of the Ohio [River] were crowded with men and boys, incessantly shooting at the pilgrims [flying south], which flew lower as they passed over the river. Multitudes [of the birds] were thus destroyed. For a week or more, the population fed on no flesh other than that of pigeons, and talked of nothing but pigeons.”

— John James Audubon, American naturalist and ornithologist, Fall 1813

At one time in Pennsylvania, seemingly clear skies would darken for hours with the shadow and noise of an approaching thunderstorm. The cause — from some distant woodland, massive “sheets” of passenger pigeons had taken wing, a mile-wide river flowing as far as the eye could see, feathered layer upon feathered layer. The flocks were so thickly packed that a single shot could bring down 30 or 40 birds; many were killed simply by people who hit them with pieces of wood as they cleared hilltops.

J.C. French, author of the 1919 collec-



**PIGEON PERCH:** This illustration of a passenger pigeon comes from an 1898 publication “Birds that Hunt and are Hunted.” Failure to adapt to changing conditions hastened the birds’ downfall.

tion, “The Passenger Pigeon in Pennsylvania: Its Remarkable History, Habits and Extinction,” wrote, “I never saw one here later than October nor earlier than April, when they were so plentiful that grain crops were sometimes destroyed in a few hours. They went to distant feeding grounds, with males [toms or cocks] — which roosted separately of the females

[hens] — leaving in a body early in the morning, sometimes before light, returning by mid-day to relieve their mates on nests. The whole valley would be filled with pigeons, sometimes eight courses deep, and for an hour or more in the morning they swept westward, nearly a mile a minute. In late afternoon and evening, the hens returned from searching for food



in equally impressive fashion.”

During the first half of the 1800s, North America may have boasted as many as 5 billion passenger pigeons, comprising 40 percent of all birds on the continent. Some researchers believe there may have been more passenger pigeons in the United States and southern Canada at one point than all other birds in the world combined. In Pennsylvania, passenger (also called wild, traveling, or wood) pigeons nested most often in northwestern counties and intermittently elsewhere, notably Adams, Lancaster, and York counties.

To almost everyone, the pigeons seemed like an inexhaustible resource, and were generally regarded as a pest. Yet within a few decades after the Civil War, they would be exterminated.

“The fate of the passenger pigeon illustrates a very important principle of conservation — it is not always necessary to kill the last pair of a species to force it into extinction,” cautions Darryl Wheye, an ornithological researcher at Stanford University and co-writer of “The Birder’s Handbook.”

### Pigeon Power

Passenger pigeons, considered quite beautiful by most observers, preferred beechnuts, acorns, or chestnuts — cyclical foods that caused them to “wander” to different hardwood forests each year. (The word “passenger” is derived from their migrating patterns.) Like clockwork, pigeons headed north from southern states for a late March/early April to June breeding season, a highly synchronized affair with exact times for courtship, nest building, egg laying, incubation, hatching, and feeding. The early arrival guaranteed them first dibs on the previous year’s nut crop following the snowmelt. Once nuts were consumed, pigeons turned to hemlock or pine seeds, wild berries, grain crops, and earthworms.

The birds — similar to mourning doves, but larger — formed colossal nesting colonies covering anywhere from 30 to 850 square miles, with large trees holding up to 90-100 nests made of loose twigs. Sweeping in size and scope — up to 40 miles long and several miles wide — these so-called “pigeon cities” were built with military precision, having clearly defined boundaries.

“Treesplitting from the weight of birds were common,” Wheye asserts. “When abandoned, roosting areas looked as if a hurricane had swept through.”

Surprisingly, passenger pigeons had a low reproductive rate. They generally laid one egg at a time, which was incubated



**ORNITHOLOGICAL RENDERINGS:** A famous drawing of passenger pigeons by John James Audubon (who is depicted in accompanying woodcarving). In the early 1800s, there were 50 passenger pigeons for every robin, then the second most common land bird.

by both parents in stick, platform-like nests. (If food was particularly plentiful, a pair might raise two or three broods in a summer, moving from one region to another.) Once hatched, chicks (also called squabs) would be fed a high-fat curd called “pigeon milk” produced by the females. Orphaned young would be cared for by neighboring pairs.

About two weeks after hatching, older birds would depart with the young — often weighing more than the adults and too fat to fly — dropping to the ground. After a few days the chicks slimmed down, gained the power of flight, and joined the flocks.

John Chatham, a naturalist called the “poet laureate of central Pennsylvania,” wrote in the 1870s that the whistling of pigeons at a roost was so loud a person could not make himself heard to someone standing within earshot.

The birds’ speed — 60-70 miles per hour or more, propelled by quick, stabbing wings — and flying prowess impressed all, earning them the nickname “blue meteors.”

“Newspapers recounted how pigeons captured in upstate New York were filled with rice that must have been taken from fields in Georgia or South Carolina only eight or so hours before,” says Wheye. “Some off-course migrants were observed as far west as Wyoming and



British Columbia. A few apparently even managed to reach Europe.”

### Heavy Harvests

During the 1830s, consumers in growing East Coast cities developed a taste for cheap pigeon meat. As demand grew over the next two decades, large-scale commercial hunting commenced, particularly after railroads penetrated into pigeon-rich sections of Michigan and Wisconsin.

Carried out by well-organized “pigeoners” — often guided to prime rookeries by telegraph messages — the hunting operations occurred at a pace that seems incredible today. In Michigan, more than 235,000 birds were hauled east from Grand Rapids on July 23, 1860. During 1869, pigeoners in that state collected 7.5 million birds; seven years later, they handled 400,000 carcasses a week at the height of the nesting season — 1.6 million for the year. The “saturnalia of slaughter” — as a few commentators of the period dubbed it — hit full stride in 1878 when at least 10 million and up to 15 mil-





**COMMONWEALTH TRIBUTES:** A monument to the passenger pigeon, top, located in the service territory of Gettysburg-based Adams Electric Cooperative, was first erected by the York-Adams Area Council, Boy Scouts of America, in the “Pigeon Hills” of southwestern York County in October 1947. It was rededicated along the shores of Lake Marburg in 1982. A state historical marker, bottom left, dedicated on June 3, 1948, stands along state Route 66 near the village of Pigeon in Forest County — site of huge passenger pigeon nestings and an area served by Youngsville-based Warren Electric Cooperative.

lion birds were harvested from one of the last great passenger pigeon breeding grounds, located at Crooked Lake near Petoskey, Mich.

The best pigeoners could dress and pack dead pigeons at the rate of around 25 dozen per barrel and ship them in ice or salt to urban markets in under 48 hours. (One merchant in New York City reported processing 18,000 birds

a day.) So great were the harvests that from 1857-85 an active New York passenger pigeon commodity market developed for up to five months each year. Interestingly, wholesale pigeon prices over the period averaged \$1.55 per dozen, with an average shipping cost of 36 cents per dozen.

“Hand in hand with extermination of breeding flocks came harvesting of wintering birds in the south,” Wheye states. “Averaging fairly reliable data, a total 10 million pigeons nationwide were shipped annually from 1866-76. Another 2 million were probably killed accidentally in overcrowded rookeries or by animals each year. And beginning about 1830, live pigeon trap shoots became a favorite pastime, leading to another 250,000 annual deaths by the 1870s.

No creature could absorb such persecution.”

### Last Keystone State Nestings

In a double-whammy for the pigeons, clear-cutting of once vast hardwood forests across their traditional range coincided with coordinated market hunting. With food-bearing trees dwindling in number, the birds began running out of places to nest. As a result, the increasingly stressed populations became concentrated in smaller areas, making them easier to kill.

Edwin Haskell, in an October 21, 1903, article for the *Potter County Journal*, described the scene in Coudersport during an April 1868 nesting along Dingman Run in that county.

“The presence of so many people near the town, engaged in killing, catching, buying, and shipping pigeons, caused such an influx of money that dealers in sportmen’s supplies soon ran out of shot. The pigeon nesting was such a boon for many poor men. Ten or twelve dollars worth of old birds was frequently the result of one day’s shooting. One dollar per dozen was the price of old pigeons on the ground; the price for squabs was 40 cents per dozen. An industrious old man

with an axe could earn more from the squabs than by shooting older birds.

“On entering the town, normally so quiet, presented a novel spectacle. Men carrying guns came in from all directions, in carriages, buggies, lumber wagons, on horseback, and on foot. A motley crowd.”

Coinciding with the Petoskey nesting in 1878, passenger pigeons established a massive colony in Forest and Warren counties. From April to September, pigeoners virtually destroyed the entire gathering, sending an estimated 7 million birds, and perhaps more, to market.

Pennsylvania’s last big pigeon city formed in April 1886 along the west branch of Pine Creek in Potter County — one of only two nesting attempts made nationally that year. In reflections two decades later, C.W. Dickinson of McKean County, dubbed the “greatest wolf hunter in Pennsylvania,” lamented what happened:

“The beechnut crop of 1885 was very large, which attracted [millions of] the birds. After three days, 30 or 40 men and boys went into the roosting with guns about 9 p.m. and began shooting into the treetops until no more fluttering could be heard. Then, gathering into groups, they made campfires and waited for daylight so they could find the dead and crippled birds. (Of course, certain shrewd individuals always appeared with a barrel of hard cider to sell to the squab hunters for 5 cents per cup.)

“That was the death blow to pigeons in Pennsylvania. Those not killed or maimed left during the night, which was clear with a full moon, taking a northerly direction to reach the big woods of Canada — the course they always took when leaving the state in early summer. Being driven out on the eve of nest building suggests that before they reached their destination, the hens dropped their eggs. With no young to eat the curds that had started to form (and would keep on forming), the craws of the old birds would fill up and they would starve to death; or something like milk fever would ensue and surely kill them.”

### Final Flights

New York passed the first law to protect passenger pigeons in 1867. Pennsylvania made it illegal to discharge a firearm within a quarter-mile of a pigeon

roosting area in 1873 (subject to a \$25 fine); outlawed the actual shooting or disturbing of passenger pigeons on roosts or nesting grounds in 1875; and prohibited removing squabs from nests in 1881. In 1905 — way too late — the Commonwealth adopted legislation protecting the birds for 10 years.

But the laws were seldom enforced and ignored for the most part. Regarding the failed 1886 nesting in Pennsylvania, a *Forest and Stream* magazine editor lashed out, “When the birds appear, all male inhabitants of the neighborhood leave their customary occupations as farmers, bark-peelers, oil scouts, wild-catters, and tavern loafers and join in the work of capturing and marketing the

game. Pennsylvania law very plainly forbids the destruction of pigeons on their nesting grounds, but [still] the nesting birds have been killed by the thousands and tens of thousands.”

As late as 1888, passenger pigeons remained the most numerous bird in North America. But when autumn rolled around, the utterly disorganized, decimated, and terrified flocks migrated south and never returned.

The rapid disappearance of the birds generated enormous controversy. Most scientists credited it to the culmination of years of overhunting and razing of forests. But a few blamed an imported plague or a terrific, though unrecorded, three-day “typhoon” in the spring of 1889

that had continually pushed nomadic flocks — desperately searching for suitable forests — over open water where, disoriented and exhausted, they ultimately drowned. (Unconfirmed newspaper articles from that year cited tales of trans-Atlantic vessels/Gulf of Mexico fishing boats/Great Lakes ore barges — take your pick — plowing through millions of dead pigeons.) A handful of researchers fancied that the birds had changed their migration routes toward the Andes Mountains in South America; others suggested that pigeons had begun nesting further and further north in Canada to avoid hunters, subjecting them to more extreme weather conditions and limiting their ability to lay eggs.

## How They Were Hunted

Passenger pigeons provided Native Americans and early settlers with an easy meal — during the nesting season, one only needed to wander into a colony and pluck some tasty plump squabs (fattened chicks) that had fallen from their nests.

The famous American naturalist and ornithologist John James Audubon commented, “The young pigeons were picked up and piled in heaps until hunters had as many as they could possibly dispose of, then hogs were let loose to feed on the remainder.”

In recollections published in *The Cardinal*, published by the Sewickley Valley Audubon Society in 1939, 88-year-old J.B. Oviatt from McKean County — who hunted pigeons commercially throughout the 1870s — noted that most adults harvested were often pickled in barrels, or the breast meat dried and smoked for winter.

“Farmers at times killed so many that the meat spoiled and had to be used as fertilizer,” he related. “Some squabs were also taken alive and raised in low pens [to prevent excessive movement] and then sold as “stall fed” birds. This was especially true in years of poor pigeon prices.”

To keep up with market demand, professional pigeon hunters devised ways to more efficiently collect succulent squabs. Often, trees were chopped down or set on fire to make the young jump from their nests, or the chicks were knocked down using long hickory poles and even whips.

Nesting adults, on the other hand, would usually be shot from below, although smudge pots filled with burning sulfur or grass were sometimes placed under roosting trees. Scores of dazed birds, overcome by the fumes, quickly fell to the ground. In a few cases, hunters even employed fireworks or a prototype machine gun.

However, the most common hunting technique involved net-

ting. In an open area near a nesting site, a patch of ground was cleared, watered down, and baited with alcohol-soaked grain or salt (which pigeons seemed to crave). A net was then carefully arranged so it would fly out and settle over feeding birds. Bent saplings along the perimeter of this “muck bed” sometimes served as spring poles.

Trappers concealed themselves nearby in a booth or hut made

of tree boughs. To lure the birds in, they released a “flyer” — a pigeon with a 25-foot cord tied to its legs that could be pulled down to mimic the appearance of a bird hovering over a feeding place.

In addition to flyers, trappers normally tethered a decoy pigeon — temporarily blinded by having its eyelids sewn shut — to a tilting perch just outside of the net. (As a stool was commonly used for this perch, the term “stool pigeon” came into being.) Every time the perch — fastened to long poles — was raised, the stool pigeon (to keep balance) flapped its wings as if landing to eat.

When a passing flock settled down to see what the stool pigeon or flyer had

apparently found, trappers sprung the net and began working frantically to secure the device and dispatch birds. Since it was common to catch 200-600 pigeons at a time, an accomplished group could harvest several thousand in just a few days.

Oviatt remarked that his stools — which he generally kept for two to three years at a time — often became so tame he did not need to blind them.

“Even if they escaped from a coop, they soon returned,” he stated. “[In cages], they were very clean, happy, friendly (not aggressive), and healthy birds. [In the wild], they were kind of dumb. When hunted, the birds tended to pack together even tighter, making them easier prey. They never showed any fear of man until toward the end of the nesting season, after their ranks had been depleted.”



**BRANCH BLINDS:** An 1850s Courier & Ives print, “Pigeon Shooting,” shows how hunters and trappers used bough houses to conceal themselves from pigeon flocks.



William Hornady, an early 20th century conservationist, seemed to capture the confusion. “The millions were destroyed so quickly, and so thoroughly en masse, that the American people utterly failed to comprehend it and for 30 years obstinately refused to believe the species had been wiped off the map,” he declared.

In the 1890s, most remaining passenger pigeons began breeding in isolated pairs — something a few had always done — but a behavior that made the birds more vulnerable to predators (since they laid few eggs) and prevented them from successfully replenishing their numbers.

The last significant passenger pigeon nesting in the U.S. took place in the spring of 1896 near Bowling Green, Ohio. Yet as these 250,000 birds came together, the call went out over telegraph lines to relentless pigeoners, who

**TOTAL RECALL:** A famous wolf hunter, C.W. Dickinson wrote with disgust about the annihilation of an 1886 nesting effort by passenger pigeons in Pennsylvania — the last in the Keystone State.

quickly arrived by rail and descended on the flock. In just one April day, they finished off the species — 200,000 carcasses collected, 40,000 birds mutilated, and more than 100,000 newborn chicks, too young to fend for themselves, left to die. The 5,000-10,000 birds that survived quickly dispersed into couples, small bands, or as individuals.

In an ironic, and perhaps symbolic, twist, boxcars carrying the last pigeon carcasses to market derailed. The contents



spilled and were left to rot in a deep ravine a few miles from the train depot.

Within just a few years, the birds vanished. On March 24, 1900, 14-year-old Press Clay Southworth shot a “strange bird” that was eating corn on his family’s farm in southern Ohio. His quarry turned out to be the last undisputed passenger pigeon

taken in the wild.

### Epithet

Attempts to breed passenger pigeons in captivity proved largely unsuccessful — absent huge flocks, they showed little desire to reproduce. Only a handful of pigeons hatched in captivity lived more than a few years.

In the early 1900s, the National Audubon Society offered \$1,500 to anyone who could find a wild pigeon nest and received an average of 100 false alarms each year. The Cincinnati Zoo had a \$1,000 standing reward for anyone who could bring in another bird to join its surviving trio of passenger pigeons (descendants of a flock of 17 purchased in 1876). No one ever came forward.

But a few passenger pigeons did live on. Some old-time pigeoners — believing that the flocks would yet return — retained birds for use in their trade. One of the last to do so, Jake Kreamer, kept 10 pigeons, all nearing 30 years old, in a coop behind his Lycoming County cabin until New Year’s Day 1908, when a cat broke into the pen and killed all but two.

Kreamer, “despairing over the vanished millions,” hastily killed the two survivors and had them stuffed. A few months later, he learned that he could have sold both at his own price to the Cincinnati Zoo or any number of private enthusiasts trying to rescue the breed.

The Pennsylvania Department of Conservation and Natural Resources lists the state’s last captive passenger pigeon as perishing in Lancaster County in 1910. The world’s final known survivor, a 29-year-old female named Martha, passed away quietly in her cage at the Cincinnati Zoo in 1914 — a letter that year from

*(continues on page 22)*

## Fleeting Flocks

Wild passenger pigeons “officially” disappeared from Penn’s Woods on October 5, 1890, when Jasper Fincher, while on a picnic in woods along Queneshaque Run near Linden, Clinton County, killed a “handsome” male. The specimen was taken to a local studio for mounting.

But unconfirmed sightings of stragglers continued in the Commonwealth for another quarter century. Woodsmen contended a small pigeon nesting occurred near the “big hemlocks” at the headwaters of Young Woman’s Creek in Clinton County in 1892. J.C. French, author of the 1919 book, “The Passenger Pigeon in Pennsylvania: Its Remarkable History, Habits and Extinction,” claimed to have seen a pair “light in a Juniper Tree” in 1901 near Grantonia in Elk County.

William Hornady, an early 20th century conservationist, reported a “naturalist in northern Pennsylvania fed a flock of 300 in the autumn of 1903 and expected them to return the following year.” (Apparently, they did not.) C.W. Dickinson of McKean County, dubbed the “greatest wolf hunter in Pennsylvania,” spied a group of 100 in 1905 and a lone traveler a year later.

After the last known passenger pigeon died at the Cincinnati Zoo in 1914, all reports of wild passenger pigeons — which continued nationwide until 1930 — were written off as being misidentified mourning doves. This included the final observation from Pennsylvania, made in 1917 by William Mathues, a Delaware County deputy sheriff and “master hunter,” who supposedly spotted 30 feeding in a Springfield Township meadow.

Accepting that passenger pigeons had disappeared forever took time. In 1916, an elderly H.H. Gallup of McKean County summed up the finality felt by many rural residents.

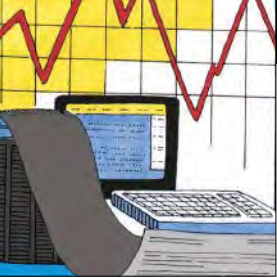
“I thought I heard a cock [pigeon] crow this spring while in the sugar bush,” he wrote, “but as I never heard it again, no doubt I was mistaken. I have seen buckwheat fields so covered with birds that you could not see the ground, and when they were feeding, they seemed to roll over one another, in countless thousands, a sight that future generations can never realize.”

**ALL THAT REMAINS:** Just 1,512 mounted specimens on display in museums and private collections worldwide are the only reminders of passenger pigeons.



compiled by Perry Stambaugh

Editor



## Not Seeing Red

**A**lthough rural residents must drive longer distances to get anywhere, they face significantly fewer traffic signals during their travels. According to data from the Pennsylvania Department of Transportation, Pennsylvania's 48 predominately rural counties boast 2,238 "red lights" — just 16 percent of the state's total. On average, that works out to one traffic signal every 31 miles of highway, compared to

one every 5 miles in urban counties.

Except for Forest and Perry counties, every rural county hosts at least one traffic signal. Counties with few signals include Sullivan (one), Cameron and Fulton (two each); and Juniata and Potter (three apiece).

Outside of Philadelphia and Pittsburgh, traffic signals are almost split evenly between townships and cities/boroughs.



## Feathered Farewell

(continued from page 12)

S.A. Stephan, the zoo's general manager, to Lycoming County resident Charles Eldon placed the actual time of death at 2 p.m. on Saturday, August 29. Martha's remains are displayed at the Smithsonian Museum of Natural History.

So why did passenger pigeons go extinct? Even after the 1896 massacre at Bowling Green, thousands still existed, hunting pressure had ebbed, and although the largest nut-producing trees had been logged, enough suitable habitat existed to permit a recovery.

"The pigeons apparently could only successfully breed when in vast colonies, a behavior that also allowed them to 'swamp' natural enemies with enormous numbers," explains Wheye. "Predators in the area of a roost — such as bobcats, weasels, foxes, and snakes — could not initially make a dent in the population, and since the birds dispersed as soon as breeding was over, animals could not build up numbers to tackle the resource."

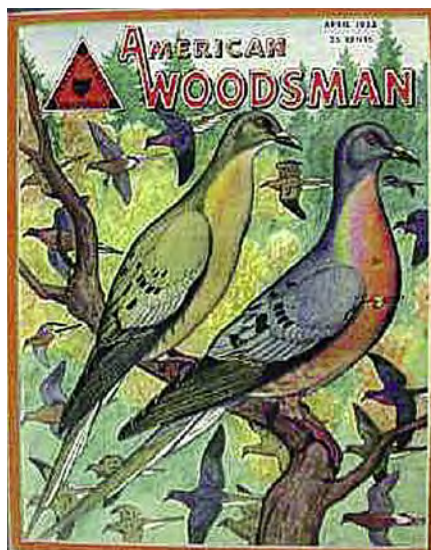
She continues, "While this communal technique worked well in the wild, it increased the birds' vulnerability to over-

exploitation by man. Although storms or disease may have played a role, the last three decades of the passenger pigeon's existence demonstrates that the birds were so persistently molested that they lost cohesion, were scattered far and

wide, slipped below a sustainable population threshold, and thus quickly died out."

The shock of seeing the most common bird in the world disappear forever, though, did lead Congress to quickly enact major wildlife conservation laws — the true enduring legacy of the passenger pigeon.

In his book, "Birds of Western Pennsylvania," W.E. Clyde Todd mused, "One is imbued with the sense of irreparable loss suffered by the passing of the pigeon. The unbelievably vast numbers in which it appeared; the extent of its daily flights; and the enormous area, the unusual density, and the shifting character of its communal roosting and nesting places, were unique. Here was a bird so perfectly suited to its environment that, although a pair laid but one egg at a setting, or two at most, and although its enemies were legion, it increased over the course of time to such an extent that it overran the continent by sheer numbers. The story of its passing is a shameful record of human cruelty, avarice, and indifference — a story one wishes had never been told."



**STILL REMEMBERED:** Long after they had vanished, passenger pigeons were still appearing in various publications, such as this print by Leon L. Pray featured on the April 1933 cover of *American Woodsman*.

