

Passenger Pigeons: Technology, a False Sense of Security, and their Disappearance
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Just over 150 years ago, the passenger pigeon, *Ecopistes Migratorius*, was one of the most numerous bird species in North America with population estimates in the billions. Yet, one can only find them today in museums, as stuffed examples, having been declared extinct in 1914, or learn about them through written records. Up until the mid to late 19th century, passenger pigeons were widespread across North America; they were unique among the continent's bird species due to their population size and their contributions to a vast web of ecological intersectionality.¹ Passenger pigeons were known for their ability to cover entire forests, as described by the writer Mark Twain in his 1906 autobiography, *Autobiography of Mark Twain, Volume 1*: "the birds would come in millions, and cover the trees and by their weight break down the branches."² A newspaper account titled "*Netting Wild Pigeons in New England*" provides a visual record aligned with Mark Twain's writing.³ The passenger pigeon's demise began in the late 19th century at the same time as the US population was greatly expanding, and while a vast cross-country railroad system was being developed. Human population expansion, technological advances such as the proliferation of railroads and invention of refrigerated rail cars, and the creation of a telegraph network, led to the commercialization of passenger pigeon. The false sense of plentitude produced by high-scale hunting as a result of the passenger pigeon's commercialization, and the disinterest in keeping captive populations due to the difficulty in

¹ Joel Greenberg, *A Feathered River across the Sky: The Passenger Pigeon's Flight to Extinction* (Bloomsbury, 2014), 68.

² Mark Twain, *Autobiography of Mark Twain: The Complete and Authoritative Edition, Volume 1* (University of California Press, 2010), 218.

³ Appendix A; "Netting Wild Pigeons in New England," *Frank Leslie's Illustrated Newspaper*, September 1867, p. 8.

breeding them hid the bird's population collapse from the public eye until it was too late and no more could be found.

The population expansion from 1870-1900, increase in railroad availability, invention of the refrigerated train car in 1867, and the creation of telegraph networks led to the commercialization of passenger pigeon products, such as soap or oil, and the development of national markets. From 1870 to 1900, the U.S. population grew from close to 38.55 million to 76.21, nearly doubling in just 30 years.⁴ This increase in population also led to increased demand for passenger pigeon meat as an inexpensive source of food. While pigeons were initially hunted in smaller numbers in order to provide sustenance for hunters in between larger kills, pigeon meat began to be developed as a regular food source leading to increased demand.⁵ Pigeons thus became a traded commodity and regional markets where people went to sell pigeons were created. The use of passenger pigeons was diversified beyond food. The fat from pigeons was used to create products that ranged from soap to oil, and pigeon feathers were used to fill beds and pillows.⁶ These regional markets were usually in local towns near where hunters lived and were often unable to absorb the massive supplies of passenger pigeons that were killed. The excess in supply resulted in an inability to sell and drove down the prices.⁷ As a result of this price decrease, fewer pigeons were hunted, since it was simply not economically viable to hunt pigeons when they would rot in the markets. This series of events soon reversed; national markets began to emerge in large population centers such as New York, enabled by the

⁴ History Staff Jason Gauthier, "1870 Fast Facts - History - U.S. Census Bureau," United States Census Bureau, accessed May 8, 2022,

https://www.census.gov/history/www/through_the_decades/fast_facts/1870_fast_facts.html;

History Staff Jason Gauthier, "1900 Fast Facts - History - U.S. Census Bureau," United States Census Bureau, accessed May 8, 2022,

https://www.census.gov/history/www/through_the_decades/fast_facts/1900_fast_facts.html.

⁵ Greenberg, 71.

⁶ Ibid, 73-74

⁷ Errol Fuller, *The Passenger Pigeon* (Princeton, NJ: Princeton University Press, 2015), 62.

expansion of the railroad network that allowed farther and faster transportation of pigeons.⁸ Since these markets were now in large population centers instead of local towns, there was a virtually unlimited demand. Regions that did not utilize passenger pigeons before, could now get orders from hundreds of miles away. The invention of the refrigerated train car allowed perishables (including pigeon meat) to be shipped even further and helped produce more profit, as before, meat shipments would often spoil on long journeys.⁹ As Henry Clay Merritt, a famous pigeon hunter at the time, described in his memoir, *The Shadow of a Gun* (1904), he was already freezing his birds before the invention of the refrigerated train car: “we could and did freeze birds fairly well in summer... In the summer of 1871 we filled [a freezer] full of woodcocks in June and kept them in a fairly salable shape till September.”¹⁰ Merritt’s statements indicate that meat preservation through cold storage was used even before commercial refrigeration was available. The invention of the refrigerated railcar led to cold storage mobility, and thus incentivized killing more pigeons for larger and more interconnected markets. As well as helping with shipping passenger pigeons, railroads also helped transport hunters to pigeon flocks when they were sighted and broadcasted through telegraph wires.¹¹ The combination of all these technological advancements helped hunters prey more on passenger pigeons, allowed them to earn more profit, and encouraged further killing.

In the late 1800s, the pressure on the passenger pigeon population came not only from commercial hunting, but also from trap-shooting which gave the public a false sense of plentitude by slaughtering thousands of pigeons in single sporting events. Trap-shooting was the destructive practice of using a shotgun to hit live, moving pigeons. It was used by the wealthy as

⁸ Fuller, 25-27.

⁹ Greenberg, 87-90.

¹⁰ Henry Clay Merritt, *The Shadow of a Gun* (Chicago: The F.T. Peterson company, 1904), 111.

¹¹ Greenberg, 194

a social event.¹² A particularly notable meet was in 1878, at the St. Paul Minnesota Sportsmen's Club, which used 10,000 live pigeons for shooting. In another one, in Dallas in May 1880, 5,000 pigeons were shot.¹³ Such trap-shooting matches were indicative of the slaughter that accompanied the wealthy elite's activities. The reason why these trap-shooting competitions were able to get so many pigeons was that pigeons often massed together in large numbers and were easy to catch at the same time.¹⁴ There were such massive populations in small areas that the competitions were able to continually use passenger pigeons without caring about how many were killed. Pigeons that were grown in captivity and fed were often much more expensive and could "easily command 2.50 to 3.00 per dozen" as opposed to "one dollar to one twenty-five per dozen"¹⁵ and thus, trap-shooting competitions often resorted to utilizing wild ones. The public often spectated these matches, sometimes even using the ones that got away from the rich as target practice, and were awed by the quantities killed.¹⁶

Not only were pigeons used for trap-shooting in the false belief that the vast amounts of pigeons killed would not harm the overall pigeon population, but hunting pigeons for leisure also led to many passenger pigeons dying and was a major cause for concern. An account from William Dunlop, a pigeon hunter in Quebec in 1830 described the futile attempts of the police officers that were trying to stop fervent shooting at a flock of pigeons: "It was found that pigeons, flying within easy shot, were a temptation too strong for human virtue to withstand; --and so the contest was given up, and a sporting jubilee proclaimed to all and sundry."¹⁷ The use

¹² Ibid, 114.

¹³ Stanley Castro, "Additional Records of the Passenger Pigeon in Texas," *Bulletin of the Texas Ornithological Society* 34, no. 1 (2001): pp. 5-16, 16.

¹⁴ Fuller, 26.

¹⁵ Merrit, 184.

¹⁶ Greenberg, 115.

¹⁷ William Dunlop, *Statistical Sketches of Upper Canada: For the Use of Emigrants* (London: J. Murray, 1832), 38.

of “contest” to represent the idea of preventing pigeon killing and the fact that the police force gave up because the “temptation” to kill passenger pigeons was too strong shows that the safety of the pigeon was of no concern to most people. Accounts similar to these were repeated in other areas both in Canada and the United States.¹⁸ Besides shooting, people often used pieces of wood and other long poles to knock hundreds of pigeons out of the sky and nets to capture dozens at once.¹⁹ Pigeons were so easy to hunt that accounts were recorded of men who could kill up to 132 with one shot of their weapons (in reality, it was a cannon).²⁰ The vast scale of killing created an environment where everyone believed that the passenger pigeon would always be plentiful and that they could continue killing these pigeons with no consequences even if it was just for fun.

The realization that the passenger pigeon had largely disappeared came too late as people only cared about their preservation after they had nearly gone extinct and monetary rewards were offered. The last wild passenger pigeon was believed to have been killed by a boy on March 24, 1900 in Pike County, Ohio, and all efforts after that time were focused on finding live pigeons.²¹ The American Ornithologists Union, an organization that describes its goal as facilitating “social and scientific intercourse between American ornithologists,” led the efforts.²² Unaware of the population collapse, the Union started offering a reward for dead pigeons that it hoped to use in research. Sadly, this led to further killings; people quickly took up on the offer and thousands of

¹⁸ Greenberg, 132-135.

¹⁹ Fuller, 78-80.

²⁰ Albert Hazen Wright, “Some Early Records of the Passenger Pigeon,” *The Auk* 27, no. 4 (1910): pp. 428-443, <https://doi.org/10.2307/4070900>, 430.

²¹ W. F. Henninger, “Henninger's List of the Birds of Middle Southern Ohio a Preliminary List of the Birds of Middle Southern Ohio,” *The Auk* 20, no. 1 (1903): pp. 83-83, <https://doi.org/10.2307/4070122>, 54.

²² J. A. Allen, Elliott Coues, and William Brewster, n.d, 1.

birds were hunted for the reward.²³ However, after realizing that pigeons were rapidly disappearing, the Union began seeking undisturbed nests with breeding pairs and offered rewards for people who managed to find them.²⁴ Information about efforts such as these can also be gleaned from contemporary newspaper accounts that included description of the rewards. One article, published in 1913 titled “Only One Passenger Pigeon” began with the text: “Five thousand dollars for a pair of passenger pigeons?... All the bird-lovers of the United States want to see is two genuine...passenger pigeons, male and female.”²⁵ The title of this passage illustrates the importance of this task, and the high monetary reward, which would be just over \$145,000 today, adds to this.²⁶ By using the term “bird-lovers” the article minimizes the number of people that cared about the passenger pigeon’s extinction and shows that the vast majority of people were only interested in the money. Given that the last account of a passenger pigeon found in the wild was in 1900, there was little chance of finding anything 13 years later, which also explains the high reward. Another factor indicating the increased interest in passenger pigeons after they disappeared is that there were hundreds of submissions and accounts of people finding nests and pigeons that ended up just being similar birds such as morning-doves.²⁷ The race to find pigeons, even if financially motivated, displays the sense of urgency that came after realizing how many were killed. No breeding pairs were available in farms and captive-breeding areas either, showing that, before such high monetary incentivization was offered, there was little to no interest in saving the pigeon.

²³ C. F. Hodge, “The Passenger Pigeon Investigation,” *The Auk* 28, no. 1 (1911): pp. 49-53, <https://doi.org/10.2307/4071492>, 49-50.

²⁴ *Ibid.*, 51.

²⁵ “Only One Passenger Pigeon,” *Detroit Free Press*, July 6, 1913, p. 1.

²⁶ “CPI Inflation Calculator,” U.S. Bureau of Labor Statistics (U.S. Bureau of Labor Statistics), accessed May 8, 2022, https://www.bls.gov/data/inflation_calculator.html.

²⁷ Hodge, 51.

Raising passenger pigeons in captivity was challenging and thus, there were few captive breeding attempts and none large enough to stop the species from going extinct. The attempts showed that in addition to cost, there were other difficulties. For example, in December 1895, Ruthven Deane visited the captive passenger pigeon population owned by David Whittaker who had only raised 15 pigeons from two breeding pairs that he received seven years earlier. Deane found that the reason for this slow growth was because “one of the old birds scalped itself by flying against the wire netting, and died -- the other one escaped;” “the destruction of the nest and egg, at times by the female, more often by others of the flock;” and “the killing of the young birds, after they leave the nest, by the old males.”²⁸ These many challenges can also explain why many people did not keep captive populations that could be used to save the species and why there was little interest in raising them without the opportunity to gain profit. The combination of these two factors was augmented by the idea that the passenger pigeon population would never run out.

Technological advancement was a chief motivator for the passenger pigeon’s extinction, and the role of the media displayed people’s indifference for the survival of the species without a monetary reward. The commercialization of hunting as a result of railroads, the telegraph, and refrigeration hastened the passenger pigeon’s death and difficult captive breeding sealed their fate. The extinction of the passenger pigeon remains as a reminder of what our human population can do and shows the importance of current wildlife conservation efforts. The many initiatives after the passenger pigeon’s extinction such as the Migratory Bird Hunting Stamp Act, and the creation of National Wildlife Refuges helped save many species but came too late to save the reason for their creation.²⁹ The role of technological advancements in the passenger pigeon’s

²⁸ Ruthven Deane, “Some Notes on the Passenger Pigeon (*Ectopistes Migratorius*) in Confinement,” *The Auk* 13, no. 3 (1896): pp. 234-237, <https://doi.org/10.2307/4068789>, 2, 3.

²⁹ Greenberg, 196-199.

extinction shows the impact of new inventions, not just to humans but also to the environment and animals and illustrates the necessity of having measures in place to limit the damage that technology can cause.

Appendix A:



The article “Netting Wild Pigeons in New England” was published in *Frank Leslie’s Illustrated Newspaper* in 1867 and features illustrations displaying the massive quantities of passenger pigeons that were seen at that time. One image shows passenger pigeons covering trees and the other displays a flock of pigeons in a dark cloud flying over several hunters.

“Netting Wild Pigeons in New England.” *Frank Leslie’s Illustrated Newspaper*, September 1867.

Bibliography:

Primary Sources:

Deane, Ruthven. "Some Notes on the Passenger Pigeon (*Ectopistes Migratorius*) in Confinement." *The Auk* 13, no. 3 (1896): 234–37. <https://doi.org/10.2307/4068789>.

This source describes Ruthven Deane's visit to a passenger pigeon captive breeding farm that had 15 passenger pigeons at that time. It discusses their behavior and features an interview with the owner of the farm, David Whittaker in which Whittaker describes the many problems with passenger pigeon captive breeding.

Dunlop, William. *Statistical Sketches of Upper Canada: For the Use of Emigrants*. London: J. Murray, 1832.

A book which strives to describe everything about animals and birds that would be needed for an emigrant to Canada. A short section on passenger pigeons and was used for a quote on Quebec pigeon hunting and how it was impossible to stop people from shooting them.

Merritt, Henry Clay. *The Shadow of a Gun*. Chicago: The F.T. Peterson company, 1904.

A memoir by Henry Clay Merritt that described some of his operations as a passenger pigeon hunter. This account from a hunter was invaluable and gave inside information on the price of the pigeons and the desire for a way to refrigerate passenger pigeons in order to transport them farther.

"Only One Passenger Pigeon." *Detroit Free Press*, July 6, 1913.

This was a newspaper account searching for possible leads on live passenger pigeons and offered a reward for any that were found.

Twain, Mark. *Autobiography of Mark Twain: The Complete and Authoritative Edition, Volume 1*. University of California Press, 2010.

Mark Twain's autobiography which included brief mention of passenger pigeons and was used for the quote in the introduction.

"Netting Wild Pigeons in New England." *Frank Leslie's Illustrated Newspaper*, September 1867.

A newspaper article describing the procedure necessary to capture passenger pigeons. It also featured several illustrations which were included in Appendix A.

Secondary Sources:

Allen, J. A., Elliott Coues, and William Brewster. Letter to AOU founders. "American Ornithological Society Letter 1," August 1, 1883.

Letter founding the American Ornithological Union which was used for the quote describing the union's purpose. It lays the groundwork for what the American Ornithological Union would be and what its goals were.

Castro, Stanley. "Additional Records of the Passenger Pigeon in Texas." *Bulletin of the Texas Ornithological Society* 34, no. 1 (2001): 5–16.

This has some records of trap-shooting matches with data on how many pigeons were killed so it is useful in giving an idea of the scale of these matches.

"CPI Inflation Calculator." U.S. Bureau of Labor Statistics. U.S. Bureau of Labor Statistics. Accessed May 8, 2022. https://www.bls.gov/data/inflation_calculator.htm.

Used to calculate how much \$5,000 from 1913 is worth today using inflation rates

Eckert, Allan W. *The Silent Sky: The Incredible Extinction of the Passenger Pigeon, a Novel*. Lincoln, NE.: IUniverse.com, Inc., 2000.

Gives a lot of more general information on the species, population numbers and how it went extinct.

Greenberg, Joel. *A Feathered River across the Sky: The Passenger Pigeon's Flight to Extinction*. Bloomsbury, 2014.

This book was really valuable and helped in a number of occasions, and was used for the phrase "pigeons as provisions to pigeons as products, a general overview of the species' decline and for information on telegraph and national markets

Henninger, W. F. "Henninger's List of the Birds of Middle Southern Ohio a Preliminary List of the Birds of Middle Southern Ohio ." *The Auk* 20, no. 1 (1903): 83–83. <https://doi.org/10.2307/4070122>.

Record of last pigeon killed.

Hodge, C. F. "The Passenger Pigeon Investigation." *The Auk* 28, no. 1 (1911): 49–53. <https://doi.org/10.2307/4071492>.

An account of the efforts made by the American Ornithologists Union to find breeding pairs and has some examples of what nests and false leads came in.

Jason Gauthier, History Staff. “1870 Fast Facts - History - U.S. Census Bureau.” United States Census Bureau. Accessed May 8, 2022.
https://www.census.gov/history/www/through_the_decades/fast_facts/1870_fast_facts.htm.

Used to find population in 1870

Jason Gauthier, History Staff. “1870 Fast Facts - History - U.S. Census Bureau.” United States Census Bureau. Accessed May 8, 2022.
https://www.census.gov/history/www/through_the_decades/fast_facts/1870_fast_facts.htm.

Used to find population in 1900

Novak, Ben J., James A. Estes, Holland E. Shaw, Erika V. Novak, and Beth Shapiro.
“Experimental Investigation of the Dietary Ecology of the Extinct Passenger Pigeon, *Ectopistes Migratorius*.” *Frontiers in Ecology and Evolution* 6 (2018).
<https://doi.org/10.3389/fevo.2018.00020>.

Used for passenger pigeon’s latin name

Wright, Albert Hazen. “Some Early Records of the Passenger Pigeon.” *The Auk* 27, no. 4 (1910): 428–43. <https://doi.org/10.2307/4070900>.

Record of the maximum number of pigeons shot by one gun.

Fuller, Errol. *The Passenger Pigeon*. Princeton, NJ: Princeton University Press, 2015.

Really interesting illustrated book that has some great information about regional markets and the prices of passenger pigeons