



## Environmental Resources

From Animal Extinction to Ozone

### First Documented Animal Extinction

Martha, the world's only surviving passenger pigeon, died at the Cincinnati Zoological Garden at 1 p.m. on September 1, 1914 at age 29. It was the world's first documented extinction, and the only one for which an exact time is known. The event helped raise international awareness about humanity's impact on the environment and led to efforts to preserve other endangered species of animals and plants.



The fate of the passenger pigeon (*Ectopistes migratorius*) showed that natural resources, no matter how abundant, could be irreversibly damaged when used unwisely. It challenged long-held beliefs that Nature's bounty was inexhaustible.

Passenger pigeons once may have been the most numerous birds on Earth. Some population estimates put the number of passenger pigeons in North America at 5 billion in the 19th Century. They may have accounted for 30% of all the birds in North America. Passenger pigeons looked like mourning doves, but were bigger and flew fast – at an amazing 60-70 miles per hour. "When an individual is seen gliding through the woods and close to the observer, it passes like a thought," wrote John James Audubon, the great bird expert. "And on trying to see it again, the eye searches in vain. The bird is gone."



The birds were spectacular, with a slate blue head and rump, slate gray back, dark red breast, a white and gray tail, and red eyes. Males were more brightly colored than females. They lived in hundreds of millions of acres of primary forest that once covered North America east of the Rocky Mountains. Passenger pigeons flew in great flocks that sometimes were more than one mile wide, almost 300 miles long and so dense that a flock might darken the sky for hours or days on end.

They nested and roosted in immense colonies that were easy for people to exploit, and gave the impression that passenger pigeons were inexhaustible. A single tree might have 100 nests, where both parents took turns brooding a single egg. A single nesting colony could cover up to 850 square miles of forest. Hunters could kill hundreds in a few minutes, or trap tens of thousands in a day's work. Modern communications technology – the invention of the telegraph -- contributed to the passenger pigeon's extinction. When people spotted a flock of passenger pigeons, they alerted hunters in other towns who swooped down on the flock. Loss of habitat was another factor in the extinction. When settlers cleared land for farming, they unknowingly destroyed the passenger pigeon's home.

With the rapid development of agriculture, the loss of forest habitat effectively reduced the number of passenger pigeons. Over-hunting, however, was also a big factor. Some hunters shot the birds for meat, which they ate. Some of the birds were shipped to city markets in the East, where people regarded pigeon meat as a delicacy. Other hunters, however, did it for sport. In this era before states limited the number of animals that an individual hunter could take, and when hunters were not conservation minded, sport often became excess. There were even organized contests with prizes for the person who killed the most birds. In one, a hunter had to kill at least 30,000 birds to qualify for a prize. Some used an early version of the machine gun, and others set off dynamite to blast birds out of trees.

The last known wild passenger pigeon was shot in 1900, and a few others lived on in captivity. By 1910, Martha was the only survivor, named after the wife of George Washington. The Cincinnati Zoo donated her body to the Smithsonian Institution in Washington, DC.