

Appendix I: Events That Shaped the Development of Environmental Education in Pennsylvania

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all people, including generations yet to come. As trustee of these resources, the commonwealth shall conserve and maintain them for the benefits of all people.

– Pennsylvania Constitution, Article 1, Section 27, adopted in 1971

1600s–1800

- 1681:** William Penn (1644-1718) was granted land by the King of England for the site that became known as the City of Philadelphia. The Delaware Indians and Swedish settlers preceded Penn's presence. The European population was 680, while a dozen Native American tribes were active in "Penn's Woods."
- 1690:** North America's first paper mill was built near Germantown. This event marked the first wave of industrial development using water power.
- 1698:** The first public school in the colonies was established in Philadelphia.
- 1699:** Birth of John Bartram (d. 1777). Bartram became known as the "Father of American Botany."
- 1706:** Birth of Benjamin Franklin (d. 1790). Well known for his diplomatic, political, publishing and scientific enterprises, Franklin played an important role in developing Pennsylvania's environmental conscience.
- 1731:** The Philadelphia Library became the first public institution of its kind to promote education by making books available to the public.
- 1739:** Birth of William Bartram (son of John) (d. 1823) who became known as the "Father of Pennsylvania Ornithology."
Benjamin Franklin and his neighbors petitioned the Pennsylvania Assembly to ban tanneries from Philadelphia's commercial district due to disease, odor, and declining property values.
- 1750:** Coal was discovered by Europeans in Nazareth.
- 1752:** Benjamin Franklin's kite experiment demonstrated that lightening was, in fact, electricity.
- 1766:** Birth of Alexander Wilson (d. 1813), who later became known as the "Father of American Ornithology."
- 1786:** The first steam-powered boat was built by John Fitch (1744-1798) and it sailed on the Delaware River.
- 1787:** Pennsylvania became the second state admitted into the Union.
- 1790:** The population of the U.S. was approximately four million (4.5 people per square mile) and the country was comprised of 867,980 miles.
- 1792:** The first coal company was formed in the commonwealth.
- 1794:** The Pennsylvania Assembly passed a law to protect the commonwealth's forests by assessing a \$25 to \$50 fine for intentionally setting a fire.
- 1797:** Ben Franklin's will stipulated the construction of a fresh water pipeline for Philadelphia. His vision was timely and the Philadelphia Water Commission was established.
- 1797-1804:** "Johnny Appleseed" born John Chapman (1774-1845), settled along French Creek in Warren County.

1801–1900

- 1803-1806:** John James Audubon (1785-1851) moved into his father estate at Mill Grove. Audubon conducted the first bird banding experiments every spring on his estate.
- 1807:** Pittsburgh was referred to as the “Smokey City” from wide use of bituminous coal.
- 1812:** The Academy of Natural Sciences was established in Philadelphia to undertake research, public education, and stewardship of the environment.
- 1817 -1835:** The “Golden Age Of Canal” construction positioned Pennsylvania to power the industrial revolution.
- 1823:** Birth of Spencer Fullerton Baird (d. 1887), the first U.S. Commissioner of Fisheries. Two of his works remain classics: *The Birds of North America and Mammals of North America*.
- 1824:** The Franklin Institute and Science Museum was established.
- 1827:** The Pennsylvania Horticulture Society was founded.
- 1836:** The establishment of the Pennsylvania Geological survey helped to record Pennsylvania’s geology and hastened the utilization of natural resources.
- 1839:** Birth of Joseph Tribble Rothrock (d. 1922) in McVeytown, Mifflin County. Rothrock, a physician who became known as the “Father of Pennsylvania Forestry.”
- Mid-1800s:** Pittsburgh became the hub of steel and modern manufacturing in the U.S..
- 1859:** The first oil derrick was drilled in Titusville. Pioneered by Edwin Drake (1819-1880), the commercial use of oil ushered in the modern industrial economy.
The Zoological Society of Philadelphia was founded and it opened the first public zoo the in the U.S..
- 1865:** The first oil pipeline was constructed in Pennsylvania.
Birth of Gifford Pinchot (d. 1946). Pinchot was Governor of Pennsylvania and Chief of Forestry in the Department of Agriculture. Governor Pinchot was America’s first professionally trained forester and is known as the “Father of the Modern Conservation Movement.”
- 1869:** The gypsy moth was introduced in the U.S., with influences felt in Pennsylvania by 1932.
- 1870:** After a coal fire killed 179 miners; Pennsylvania’s first Mine Safety Law was passed.
- 1877:** The first bird sanctuary in the U.S. for birds of prey was established on Hawk Mountain.
- 1881:** For the first time, the night skies of Philadelphia were illuminated by electric lights.
- 1885:** Arbor Day was established by law in Pennsylvania to promote the importance of planting and maintaining trees.
- 1886:** Pennsylvania Federation of Sportsmen’s Clubs was founded by Ross Lillie Leffler (1886-1964).
- 1889:** The Johnstown flood, caused by poor dam construction and over development, killed 2,209 people.
- 1890:** The population of the U.S. was approximately 63 million people (over 21 people per square mile) and the country was comprised of 2,973,965 miles.
Chemicals were first introduced to combat insect pests in Pennsylvania’s orchards.
- 1893:** Pennsylvania’s first state park was created at Valley Forge. Today, the commonwealth has 116 parks covering 283,000 acres.
- 1895:** The Pennsylvania Game Commission was established.
- 1896:** Pennsylvania’s first National Audubon Chapter was organized in Philadelphia.

1901–1970

- 1901:** The Department of Forestry, the forerunner of the Department of Environmental Resources, was created in Pennsylvania.
- 1907:** Birth of Rachel Carson (d. 1964). Carson was an ecologist and author of “The Silent Spring” in 1962, which warned of the impact of DDT and other pesticides on the environment (see 1962).
- 1913:** Pennsylvania Act 275, a law that prohibited the discharge of anthracite coal and byproducts into streams, was passed.
- 1921:** The Appalachian Trail and National Trail System were established.
- 1923:** The State Department of Forests and Waters was established.
The modern Pennsylvania Fish Commission was established.
- 1932:** The Western Pennsylvania Conservancy was founded.
- 1933-1941:** The Civilian Conservation Corps (CCC), a “New Deal” work-project, helped to restore Pennsylvania’s forests, recreation areas, roads and streams.
- 1934:** The Model Game Law creates a framework to manage and harvest Pennsylvania game.
- 1939:** Conservation Education (Bulletin 214), the first environmental education publication written for the state, was published by the Pennsylvania Department of Education.
- 1940:** The Conservation Education Committee was created to develop guides and teach about natural resources in the commonwealth.
- 1945:** The State Conservation Commission was created to help establish county conservation districts to provide educational services to farm communities.
- 1948:** Twenty-one people perished in Donora due to air pollution trapped by a thermal inversion.
- Late-1950s:** Acid rain began to affect fisheries. Pennsylvania consistently received more acid rain than any other state and suffered the most biological, economic, and human damage.
- 1957:** First commercial nuclear power plant, operated by the Navy, went into operation in Shippingport.
- 1961:** Peregrine Falcons are no longer found in Pennsylvania.
- 1962:** Rachel Carson published “Silent Spring”. The book helped to propel the modern environmental movement and ban the use of pesticide DDT.
An underground mine fire was accidentally started in Centralia, Columbia County.
- 1967:** The federal government and the commonwealth began a half-billion dollar investment to combat and reclaim areas devastated by anthracite and bituminous mining.
- 1970s:** A cleanup effort, totaling \$8 billion, was spent to clean up Lake Erie and construct new sewage treatment plants. These efforts helped to restore the fishing and recreational industries on the lake and cut phosphate flow by over 50%.
- 1970:** The federal Environmental Protection Agency was established.
The Pennsylvania Environmental Council was established to educate the public about environmental issues and promote partnerships among state entities.
The Department of Environmental Resources was created by combining the Departments of Forests & Waters and Mines & Minerals.
The first Earth Day is celebrated in Pennsylvania and across the nation.

1970–Present

- 1971:** Environmental Amendment to Pennsylvania’s Constitution. (See quote at top of Page 1).
- 1972:** The Agnes Flood devastated regions along the Susquehanna River.
- 1974:** Pennsylvania Act 24 (The Pesticide Control Act) was passed to manage pesticide use and disposals.
- 1977:** The Pennsylvania Association for Environmental Education (PAEE) was formed to promote environmental education throughout the commonwealth.
- 1979:** Partial core melt at Three Mile Island began on March 28, 1979. The accident was the worst in American commercial nuclear power history.
- Early 1980’s:** Cooperative programs between agencies began dealing with issues such as pest management, recycling, pollution, forestry, and wildlife. The Pennsylvania Department of Education began to direct activities of three major supplemental curricula: Food, Land and People; Project WET; and Project Learning Tree.
- Recovery efforts restored the Peregrine Falcon to the East.
- 1982:** The Wild Resource Conservation Act created the first state program to protect nongame endangered plants and animals. The Wild Resources Council Board is formed.
- 1983:** Pennsylvania joined the Chesapeake Bay Commission.
- 1984:** Radon gas emerged as statewide and national issue. The Pennsylvania Bureau of Radiation Protection responded with a radon monitoring, education, and remediation effort.
- The Pennsylvania Environmental Education Master Plan was created, forming an Environmental Education Advisory Council of 13 members from various state agencies.
- 1985:** Zebra Mussels, considered one of the all-time exotic pests to influence native communities and extirpate native species, reached Lake Erie.
- 1986:** Elk County recorded the most concentrated acid rain figures in the nation (Penn ARC).
- 1988:** The Municipal Waste Planning, Recycling and Waste Reduction Act (101) was passed.
- The Ashland Oil storage tank collapse spewed 500,000 gallons diesel fuel into the Monongahela River.
- 1990:** The population of the U.S. was approximately 230 million people, and the country was comprised of 2,974,726 miles.
- The Keystone State covered 45,333 miles and contained just under 12 million residents.
- 1991:** The Environmental Fund for Pennsylvania, a coalition of 19 different environmental groups, was established.
- 1992:** The Atlas of Bird Breeding of Pennsylvania was published. The Atlas was a milestone in recording bird populations and is widely used in national and international ecosystem management programs.
- 1993:** The Environmental Education Act (24) established the Pennsylvania Environmental Education Grants Program for teacher and school-based EE projects.
- The Great Lakes Protection Fund Act (34) was passed to finance research and other efforts to protect the Great Lakes.

1970–Present (cont.)

- 1995:** The Department of Environmental Resources was restructured and split into the Department of Conservation and Natural Resources (DCNR) and the Department of Environmental Protection (DEP). Pennsylvania Act 26 established an educational program to disseminate agricultural based education materials.
- 1996:** The Pennsylvania Center for Environmental Education (PCEE), a collaborative partnership formed to ensure continued access to quality environmental education for all commonwealth citizens, is created by executive order.
- 1997:** The 21st Century Environmental Commission is formed.
The Environmental Fund for Pennsylvania and the Department of Environmental Protection launch first TV program that showcases efforts to protect the environment, “GreenWorks for Pennsylvania.”
- 1998:** The Tipping (Recycling) Fees Act (101) provided funding for recycling leadership.
The Wild Resources Fund utilizes proceeds from license plates for environmental projects.
- 1999:** Growing Greener, a state program that provides grants to fund environmental projects, is signed into law.
- 2001:** Pennsylvania Department of Education Academic Standards for Environment and Ecology were adopted.
The Somerset and Mill Run Wind Farms began producing 24 megawatts of electricity
- 2002:** The Pesticide Notification Act is passed that requires integrated pest management (IPM) in Pennsylvania schools.

Assembled and prepared by:

The Sustainable Energy Fund of Eastern Central Pennsylvania and the Pennsylvania Center for Environmental Education

Sources:

Pennsylvania Alliance for Environmental Education; Pennsylvania Center for Environmental Education; Pennsylvania Department of Education; the Pennsylvania Department of Environmental Protection, the Pennsylvania Historic Museum Commission, and Pennsylvanians for Acid Rain Control (Penn ARC).