

## The Top Ten

“If you could list the top ten events in 20th century American environmental history, what would they be?” On January 28, 2002, Professor Virginia Joy Scharff, Director of the Center for the Southwest at the University of New Mexico, posed this question to members of the H-West email list. It was later posted on the H-Environment list, and perhaps others. I found 25 replies to her question that listed “events” as candidates for the top ten, providing a total of 109 such “events.” I do not claim to have found all the replies, but even so these numbers indicate an unusually high degree of interest for a question on these lists. I was tempted to reply to the question myself, but like several of those who did, I found that the parameters of the question gave me pause.

Why only American “events?” Did Scharff mean just those that happened in the United States? Several Canadian respondents took her to task on that, and listed Canadian happenings such as the James Bay Project. I decided to give her the benefit of the doubt, and assumed that she meant North America north of the Rio Grande. However, of the 109 “events” listed, 18 were either clearly not North American, such as the discovery of DNA by two Britons (suggested by Richard Haimann), or were worldwide, for example, global warming (listed by Rachel Shaw and others). My own conclusion was that Scharff had unduly limited her question, and that my list of “events” should be worldwide.

Next, why just 20th-century “events?” A couple of the respondents refused to stay inside that box. Elliott West, whose choices emphasized disasters, suggested the dinosaur-slaying impact of a comet in Yucatan 180 million years ago, and Steve Holmes went back even further to the origin of photosynthesis. My own preferences as a classicist might have led me to stretch the chronological limit of the question, but I recognize that Scharff’s intent was to assess the environmental changes of the last century, now that we have entered a new one. She could just

as well have chosen the millennium, but that would get us back only to the Middle Ages. I'll stick with the hundred years beginning with 1901.

Then, what is an "event?" Several respondents raised that question. I think the word implies something that can be dated, not necessarily to a single day, which would be nitpicking, but at least to a year or two. Some of the suggestions, such as climatic change, suburban growth, and the market economy, are long-term trends that filled the century and transcended it. An event is something more specific. One might choose a date to epitomize such a trend: not the market economy per se, for example, but the Bretton Woods Conference of 1944 that originated some of its most defining institutions. That one sounds important to me; I'll put it on my list.

Finally, can a natural disaster or other occurrence that has no demonstrable human cause be considered an "event" in environmental history? Respondents suggested a number of these, including earthquakes, volcanic eruptions, and hurricanes. But environmental historians understand their subject as the study of interrelationships between humans and the environment through time, not the history of the environment per se. I think this is implicit in Scharff's question. Bob White suggested the 1906 San Francisco earthquake as one of the top ten. It is not the quake itself that should qualify, but perhaps the attempts of people to deal with its aftermath, and their plans to mitigate damage from future quakes through, say, a zoning ordinance, might make it. My list will include only anthropogenic events.

When I tabulated the items in the responses, certain features leaped out. I have to be cautious here, though. The *Denver Post* prints a daily question to which readers can respond "yes" or "no" by telephone. The newspaper always provides a disclaimer to accompany the results the next day: "This is not a scientifically designed poll, and therefore no claims are made as to the validity of its results." Well, this one is even less scientific than the *Post*'s, but here are my observations.

Two events, suggested by seven respondents each, stood out above the others (no other was mentioned by more than three respondents). These are the 1962 publication of Rachel Carson's book, *Silent Spring*, and the Dust Bowl of the 1930s. Carson's book is widely recognized as the harbinger of the Age of the Environment, sort of an environmental *Uncle Tom's Cabin*, so I think it belongs on the list. The Dust Bowl is problematic, however. Humans used the plow that broke the plains, one of its causes. But the phenomenon lasted for several years, and it is difficult to choose one event that epitomizes it, although the publication of John Steinbeck's *Grapes of Wrath* might almost do it.

The 109 suggested events fell into recognizable categories. Among those prominent was what I will call technological inventions, and by far the most often suggested (ten times) was the splitting and fusing of the atomic nucleus and its results. The nuclear bomb, nuclear power, various tests, protests, and accidents, were listed. The steam engine and internal combustion engine came too early, but the mass production of the automobile seems worthy of inclusion. Other machines mentioned were the bulldozer, chainsaw, agricultural combine, outboard motor, tank, refrigerator, air conditioner, and catalytic converter. Household conveniences with widespread effects include window screens, wood stoves, and the flush toilet apocryphally credited to Sir Thomas Crapper.

Better living through chemistry was represented by a number of products that produce pollution as a result of their manufacture or use, including DDT, leaded gasoline, leaded paint, the aluminum can, nylon and other synthetics, 2,4-D, and Agent Orange. Pollution disasters such as Bhopal, Love Canal, the Exxon Valdez, and the Santa Barbara oil spill, received mention, along with the Superfund attempted clean-up.

Water projects came in for major attention, dams, canals, and channelization among them. Hetch Hetchy, Hoover Dam, Glen Canyon, the Echo Park and Grand Canyon controversies, and the US Reclamation Act of 1902 joined the California water project, James Bay, the Chicago River, the St. Lawrence Seaway, the loss of Louisiana lowlands, and the channelization of the Danube in the listing. Water quality concerns were reflected in the Clean Water Act, the International Joint Commission, and the improvement in the Great Lakes.

Many thought that governmental legislation and programs to improve the environment should receive recognition, and suggested the National Environmental Protection Act and the Environmental Protection Agency that it established, and also the Clean Air Act. Internationally, the improvement of London's air and the Kyoto Protocol were mentioned.

Land conservation was advocated by National Parks and the National Park Service, Forest Reserves, Wildlife Refuges, the Wilderness Act of 1964, and the Antiquities Act of 1906 and the National Monuments, proclaimed under its authority by Theodore Roosevelt and Bill Clinton.

Some of the biological events mentioned were negative: the decimation of bison, beaver, and cod, and the invasion of exotic species such as the zebra mussel. Other respondents liked positive events: the

passage of the Endangered Species Act, the reintroduction of the wolf, and the international whaling moratorium.

This list is not exhaustive; I was hoping not to lose my readers. If you have noticed some surprising omissions, though, they may really have been missed. Population landmarks were almost completely ignored, except for the birth control pill and Roe v Wade. I will now give my own list of the Top Ten World Environmental Events of the 20th Century, some of which may remedy the omissions. I have listed them in chronological order, not necessarily in order of importance. Each of the events I have picked is intended to symbolize one of the major trends in environmental history, and it is possible that another event would have served equally well in most cases.

### **The Top Ten**

1. Theodore Roosevelt's White House Conference, 1908. I begin with an American event, in which one of the world's great nations affirmed that conservation should be national policy. It was followed a year later by an international conference on conservation. The program of federal land management, with the Forest Service created in 1905, and the National Park Service in 1916, and other agencies, grew out of Teddy Roosevelt's conservation initiatives. Similar initiatives were adopted by other nations.

2. Death of the last passenger pigeon and last sighting of the Carolina parakeet, 1914. Probably the first extinctions that were widely noted were those of the dodo on Mauritius and the great auk on the North Atlantic islands in the 19th century. But the disappearance of the passenger pigeon, a bird whose numbers in the billions had darkened the skies of a continent, was an event of another magnitude. The memory of that event was certainly in the minds of those who enacted the first Endangered Species Act of 1973. It may symbolize the hundreds of extinctions occurring each year toward the century's end.

3. Invention of the gas-powered chainsaw by Andreas Stihl, 1929. Lightweight models gained widespread use after the Second World War. Before the chainsaw, loggers with a hand-drawn crosscut saw might have taken two hours to fell a tree that a chainsaw could take down in two minutes. It is one of the forces accelerating the deforestation of the Earth's landmasses. This invention may stand for all the technological developments of the century, many of which are mentioned above.

4. The Bretton Woods Conference of 1944, in which financial experts of the capitalist nations erected a structure to encourage free trade in the postwar period and open resources of the world, renewable and non-renewable, to exploitation. The bodies that emerged from the

conference and its aftermath to stimulate the world market economy include the International Monetary Fund (IMF), World Bank, and the General Agreement on Tariffs and Trade (GATT). GATT's supervising body, originally the International Trade Organization (ITO), now the more powerful World Trade Organization (WTO), with a membership of over 150 nations including all the largest ones, can make a claim to oversight of the world economy. WTO is committed to ceaseless growth. These agencies provide limited support to measures for environmental improvement, but many of the projects they fund are environmentally damaging.

5. London's killer smog, 1952. Atmospheric conditions concentrated smoke and sulfuric acid aerosols over the city, causing around 4,000 deaths. Episodes of severe air pollution that brought about illness and death had occurred before, in 1930 in the Meuse Valley in Belgium and in 1948 in Donora, Pennsylvania, but this incident awakened serious efforts to prevent further disasters. The British Clean Air Act was passed in 1956, and strengthened in 1960. Similar legislation followed in the US and elsewhere.

6. Discovery of the double helix structure of DNA in 1953 by James Watson and Francis Crick. This provided the basis for biotechnology in its many forms from designer genes to cloning. Understanding the book of instructions for life has enabled us to change them, with results we have only begun to see.

7. Publication of Rachel Carson's *Silent Spring*, 1962. Carson pointed out the abandon with which huge amounts of persistent biocides such as DDT were being broadcasted through the air and across the land and sea. Using ecological data, she showed the danger of toxic substances that, as they pass through the food chain, accumulate in the tissues of plants and then of animals, especially top predators such as raptorial birds — and humans. The book brought ecology into public consciousness.

8. The United Nations Conference on the Human Environment, Stockholm, 1972. The first great UN conference devoted to the subject, it established the UN Environment Programme and provided stimulus for projects around the world. UNEP was instrumental in the negotiations leading to the 1987 Montreal Protocol (another candidate for the Top Ten), an agreement effective in reducing the production of chlorofluorocarbons, which damage the ozone layer. With the Kyoto Protocol, the saga of international action on the atmosphere, or lack of it, continued.

9. Disaster at the Chernobyl Nuclear Power Station, 1986. An explosion caused by human error injected 50 tons of nuclear fuel into the atmosphere as dispersed particles, and hundreds more tons of radioactive material that settled nearer the site of the accident. Many square miles were rendered uninhabitable, and an unknown number of people died as a result of all related causes. Subsequently, many nations scaled down or eliminated their nuclear power programs. I chose this event to stand for the others, such as the invention and use of the atomic bomb in 1945, and to indicate that nuclear technology has not remained under control.

10. The Day of Six Billion, 1999. The United Nations and the US government differed in their estimates of the day on which it happened, but they agreed that in the latter part of the year, the Earth's human population passed the number of six billion. In 1901, it had been 1.6 billion. The expansion of population was the single most important engine of environmental destruction in the 20th century. True, the affluent consume more than their share of Earth's resources, but even the small amount needed for subsistence becomes humungous (and unsustainable) when multiplied by billions. Growth has slowed, but has not stopped.

I hope that in reading this you will be stimulated, perhaps even irritated, enough to come up with your own list. Or your own question. Perhaps the next one could be, "If you could list the ten most influential books published in environmental history in the 20th century, what would they be?"

