

ENVIRONMENT

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Overview Not surprisingly, environmental history has become an increasingly important part of world history, with significant new findings resulted. Attention focuses particularly on recent periods – with new understanding, as a result, of the multifaceted environmental impacts of European industrialization. But human capacity to alter the environment developed earlier, creating new facets for world history in dealing with agriculture and the increasingly intense commercialization of the early modern period.

Agriculture Most hunting and gathering peoples, lightly populated, had minor environmental impact, though there were cases of overhunting for no clear reason. Even today, hunting peoples like the San, in the Kalihari desert, are careful to kill only what they need to eat, and to make sure animal and plant populations can recover. Agriculture, obviously, was a different matter. Domestication of animals, such as sheep, that graze close to the ground, could alter environments at many points. The same held for clearing land for farming, and the potential for reducing soil fertility by undue intensity, or creating new possibilities for soil erosion by removing trees. Sheer population growth, with agriculture, also affected environmental conditions. Some classic extreme cases resulted: Polynesian peoples in Easter Island ultimately cut down so many trees, for boat-making, that supplies virtually disappeared, forcing populations down dramatically.

Classical and Postclassical Periods By 1700 CE, as the result of the spread of agriculture, about 25% of the world's forests had been chopped down. Asian impacts were considerable, but Europe was affected as well. Greeks often lamented deforestation, as trees were cut down not only for agriculture, but to fuel cities and supply wood for shipping and housing. Some animal and plant species were lost as a result as well. Deforestation and expansion of irrigation systems increased the salt content of some regions, damaging soils; this was noted even in early Mesopotamia, and also in the Indus river valley where the results may have contributed to the collapse of this early civilization. Erosion also, later, affected Mayan society in central America. Early cities had considerable impact, partly through open sewage but above all through the use of wood and charcoal. Romans piled garbage wherever they could, and human waste ran directly into local rivers. Household wood fires created smoke pollution in most cities – London was even referred to as the “Smoke” well before modern times.

Cultural Variables Historians have discussed some regional variation. One argument holds that the Judeo-Christian tradition, putting humans above other animals, was particularly suitable for ravaging the environment for economic profit. Other cultures by contrast more clearly stressed the unity of humankind with nature. But it is not clear how much environmental protection this provided: population growth and city size may have been more important. But protective measures did develop in some cases during the Agricultural Age. Several societies – southeast Asia, Andes – introduced elaborate terraced fields, that could limit erosion. Kings and princes often reserved some forests for their own hunting, though environmental awareness was implicit at best. Mughal rulers in India claimed control over special woods like ebony, which reduced overharvesting. More widely, Europeans long practiced two- or three-field agriculture, in which a portion of the land was left fallow each year to restore fertility.

The Early Modern Period Environmental change accelerated massively with new opportunities for commercial sale and export, along with population growth. The spread of farming in the Americas, and the introduction of domesticated grazing animals, led to deforestation and in some cases soil exhaustion. A building boom in 16th century Japan, including new temple construction, increased deforestation. One scholar noted, a century later: “eight out of ten mountains of the realm have been denuded.” Commercial hunting and fishing had marked impact, particularly in North America, Russia and the North Atlantic. In North America between 1700 and 1763 over 400,000 animals were killed for fur, reducing populations of wolf, beaver and bison; and cod stocks in the Atlantic began to decline substantially, sought as food for colonists and slaves.

Responses Little reaction developed in the early modern centuries, though various writers lamented deforestation. France and Germany both introduced more formal forest management programs and regulations by the 17th century, even providing formal training in forestry. Outside of Europe, the spread of colonialism led to new pressures to expand commercial agriculture and resource extraction, including wood production, with no attention to environmental results.

The Industrial Revolution 19th-century industrialization, along with continued population growth and urbanization, created yet another period of environmental change. Two kinds of impact were particularly important. Factory centers and expanding cities polluted local air and water. Many factories dumped chemical waste into rivers; a German firm, for example, regularly pour a magnesium-chlorine mixture into the Rhine, until the practice was stopped in the 1960s. Human but also animal waste went directly into rivers, even where cities began to create covered sewage system. The expanded use of horses, until after 1900, extended the urban waste problem. Use of coal in factories and homes generated massive concentrations of smoke. And there was little initial response, with attention focused on investing in production growth. To be sure, in the West suburbs began to locate to the west of city centers, so that smoke would blow away rather than toward; and some new interest in nature and in bucolic vacations or bicycling reflected an interest in escape urban impacts – again, however, mainly for the middle and upper classes.

Outside the West The second impact of industrialization affected environments in many parts of Africa, Latin America and Asia: the pressure to produce more raw materials for export. This increasingly involved planting crops no native to the region, like rubber trees in Brazil, that led to soil erosion because the root systems did not retain water. Railroad development, deforestation both to expand agriculture and to provide fuel for sugar refining, affected tens of thousands of square miles in countries like Brazil. In Africa, both local and foreign merchants promoted increased production of cotton, cocoa and palm oil, not native to the regions in many cases and generating the familiar results of deforestation, soil exhaustion and erosion. Traditional agriculture, more protective of local conditions, was increasingly marginalized. Industrialization also created new opportunities for environmental disasters, like railway crashes or factory explosions, that could have at least passing environmental impact.

The Contemporary Period During the 20th century, with the population boom, expanding industrialization, and growing use of automobiles, environmental change, and efforts to react, became a significant facet of globalization. In the Soviet Union and eastern Europe, rapid industrialization produced massive environmental damage, both in factory centers and in raw-materials producing areas like central Asia. It was estimated that 20% of the Soviet population lived in ecological disaster areas by 1990. Japanese industrialization created massive smoke pollution, and the same applied to China by the late 20th century. But it was the transregional impact that was particularly novel. High smokestacks in Germany or the American Midwest, designed to reduce local air pollution, created acid rain that damaged forests in places like Scandinavia or Canada. Factory and automobile air pollution began to affect the global atmosphere, while the rapid reduction of rain forests in places like Brazil, to meet development demands, reduced capacity to process carbon in the atmosphere. Several results became increasingly obvious: reduction of the ozone layer; global warming thanks to more hydrocarbons in the atmosphere; reduction of Arctic and Antarctic ice masses and resultant rise in ocean levels. Environmental globalization became an increasingly important factor in human life in virtually every region.

Responses Many individual countries began to take action in this situation. More affluent industrial societies devoted more resources, and more regulation, to pollution control. Many rivers were cleaned up, many cities escaped from regular smoke pollution. Cases of industrial poisoning in Japan led to more vigorous government action, reducing the need to wear special masks in city centers. Fish returned to the Thames River in Britain. In many countries a “green” movement aimed at wider improvements in sustainability, winning particular attention in places like Germany and the Netherlands. On a global level, international conferences began to address environmental issues from the 1990s onward. Here too the green movement, including INGOs like Greenpeace, promoted wider awareness, surrounding many global meetings with environmental protesters. A major gathering in Kyoto, in 1997, produced a protocol in which many industrial countries pledged to reduce hydrocarbon levels, particularly from automobile exhaust. International agreement directly led to regulation of refrigeration chemicals, actually reversing the prior damage to ozone layers. Many international conferences and negotiations continued into the 21st century, becoming a routine agenda item at many global gatherings as well as generating specific international discussions.

Constraints Global reaction was checkered, however. In some countries like the United States, interests in economic development, from both business and labor, generated massive policy disputes, including arguments about whether global warming was even occurring. Major agreements, like the Kyoto accords, simply were not ratified in the United States. Many developing nations argued that the problem should not impede their own growth, that the industrial countries should do the heavy lifting; yet if manufacturing rivals like China would not act, business

competitors in the West or Japan might also hold back. The situation was not unchanging. Massive air pollution problems in China generated more government interest in response, including joining international accords. At the same time, attention increasingly shifted to issues of adaptive response, and not just pollution control. The Dutch, especially vulnerable to higher sea levels, enacted a new tax to invest in protective measures, and individual regions (like Miami in the United States), did the same. Problems continued to mount, and responses continued to divide both in old and new ways.

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Suggested Reading:

Something New Under the Sun: An Environmental History of the Twentieth-Century World. By J. R. McNeill (W.W. Norton & Company 2001).

Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860. By Richard H. Grove (Cambridge University Press, 1996).

An Environmental History of the World: Humankind's Changing Role in the Community of Life. By J. Donald Hughes (Routledge, 2009).

The Environment in World History. By Stephen Mosley (Routledge, 2010).

Discussion

1. How did deforestation impact the ancient Mediterranean? How prevalent was it?
2. What roles did the state play in environmental issues, before modern times? How did forest policies reflect political debates?
3. How does environmental history incorporate social history?
4. Why and how did environmental change accelerate in the early modern centuries?
5. What role did colonization play in environmental policies and degradation?
6. Discuss the impact of the industrial revolution on global environmental history.
7. How does an emphasis on the environment provide counternarratives in history? Is it possible to venture an objective environmental history?
8. What environmental changes intensified during the past century? What have been the main reactions to change, and the main regional and social divisions in these reactions?