



INDEX OF LEADING ENVIRONMENTAL INDICATORS 2008

By **Steven F. Hayward**



To borrow the blunt language of Generation X and the “Millennials,” *Does the United States suck on the environment?* This 13th edition of the *Index of Leading Environmental Indicators* aims to address this question in a new and broader context. Contrary to the perception expressed above, the answer turns out to be a resounding *no*; the United States remains the world’s environmental leader, and is likely to continue as such. This edition of the *Index* explains and quantifies this heterodox conclusion.

As this *Index of Leading Environmental Indicators* and others like it have explored for more than a decade, environmental improvement in the United States has been substantial and dramatic, almost across the board. The chief drivers of this improvement are economic growth, constantly increasing resource efficiency, technological innovation in pollution control, and the deepening of environmental values among the American public. Government regulation has played a central role, to be sure, but in the grand scheme of things it is a lagging indicator of change, and often achieves results at needlessly high cost. Were it not for rising affluence and technological innovation, regulation would have much the same effect as King Canute commanding the tides.



But in a variation of the old complaint “What have you done for me lately?” there is a widespread perception that the United States lags behind Europe and other leading nations on environmental performance.

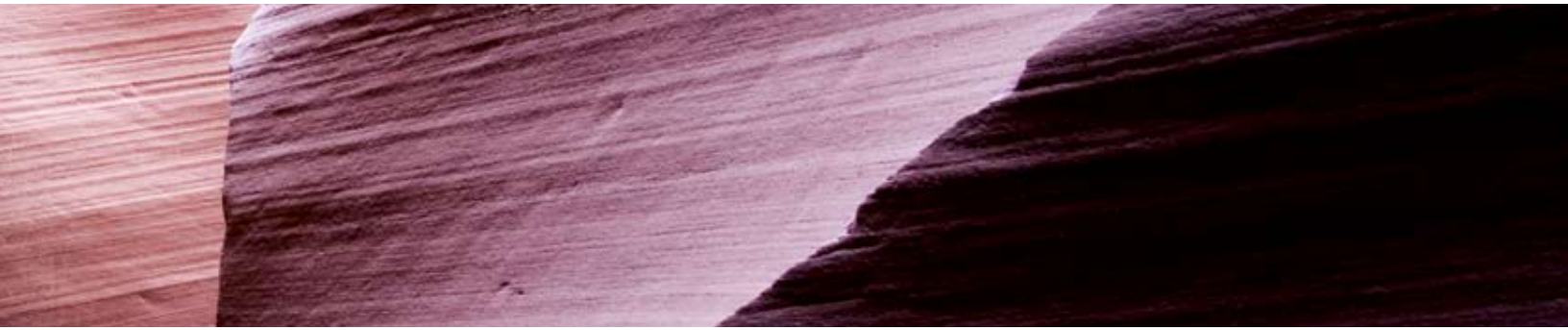
Despite the typical pessimism, signs of substantial environmental progress were reported in 2007 on both the national and global scale. Even the United Nations noted grounds for environmental optimism in two recent reports.

- The UN’s *State of the Future* report notes that “People around the world are becoming healthier, wealthier, better educated, more peaceful, and increasingly connected and they are living longer,” and the UN expects this positive trend to continue.
- The UN’s Food and Agricultural Organization issued its latest *State of the World’s Forests* report, offering a positive outlook even in regions such as Africa that are still experiencing forest loss. Net forest loss continues to decline globally and has been reversed in Asia. The UN notes, “even in regions that are losing forest area, there are a number of positive trends on which to build.”

AIR QUALITY

In the United States several areas show continued incremental progress. In the eastern United States, recent EPA data show a 60-percent reduction in sulfur-dioxide levels since the year 2000, and a decline in emissions of nitrogen oxides (an ozone precursor) of more than 50 percent.

- In Los Angeles, air-quality regulators reported a significant decline in health risk from air pollution.
- There are positive trends overseas. India’s data are choppy, but they suggest that air pollution may have peaked and even reached the cusp of declining, following the encouraging example of Mexico explored in last year’s edition of the *Index*.



WATER QUALITY

The U.S. Fish and Wildlife Service released a new report on the *Status and Trends of Wetlands in the United States* (the first since the year 2000), and confirmed what this *Index* has been predicting: the United States is now *gaining* wetlands.

- Russia reported significant progress in remediating the Aral Sea, site of one of the world's greatest ecological disasters. Russia is slowly restoring the lake's natural water level, and reintroducing native fish and wildlife species.
- Hypoxia in the Gulf of Mexico—the “dead zone”—reached the third-highest level ever recorded in the summer of 2007, a problem that threatens to get worse with the expansion of corn-based ethanol production.

CLIMATE CHANGE

Climate change continues to be the leading environmental issue, with new confounding findings and contradictory data appearing on an almost daily basis. While this controversy rages on, the *Index* tracks a number of policy-relevant aspects of the issue.

- U.S. greenhouse gas emissions *fell* by 1.5 percent in 2006, the first time U.S. GHG emissions have fallen in a non-recessionary year. *It is likely that the United States is the only industrialized nation where GHG emissions fell in 2006.* (Emissions data for other nations for 2006 are not yet available.)
- The reasons for the higher U.S. per-capita GHG emissions are explored in this edition. These differences include the longer transportation distances and costs in the United States and larger homes in America (roughly twice the size of the average European dwelling). When these differences are normalized, American GHG emissions are in line with most European nations.

The most important new analysis in this year's *Index* is a breakdown in practical terms of the most frequently mentioned emissions-reduction target—80 percent by the year 2050.

- The United States last emitted CO₂ at that level in the year 1910, when the population was only 92 million. By 2050, the United States will have 420 million people, requiring a per-capita emissions rate not seen in the nation since 1875.
- To achieve the 80-percent reduction target in 2050, U.S. per-capita emissions will have to be less than 2.5 tons (down from approximately 20 tons today). The only nations today that have GHG emissions that low are desperately poor nations, such as Haiti and Somalia.¹ Even France and Switzerland, the two industrialized nations with the lowest use of fossil-fuel energy sources, emit about 6.5 tons of CO₂ per capita.
- Automobile fuel consumption will have to fall by more than 80 percent.
- Unless there is a genuine breakthrough in carbon-free electricity, households will not be able to use enough electricity to run a hot-water heater without exceeding the 2.5 tons per-capita emissions ceiling.
- The 80 percent reduction target is unrealistic at any price, akin to King Canute commanding the tides, or the equivalent of John F. Kennedy pledging the nation in 1961 to land a man on Mars by the year 1970.

Notes:

¹ See http://sciencepolicy.colorado.edu/prometheus/archives/climate_change/001345carbon_emissions_suc.html.

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