



# Earth Day 1970 Revisited

Earth Day 2012 Recommended



*By Bruce Yandle*

*Edited by Shawn Regan*

As we approach Earth Day 2012, I offer a sobering proposition: The blueprints of our major air and water pollution control statutes were flawed at birth. Designed for a smokestack economy that no longer exists, the statutes focus on inputs, not outcomes. They are based on technology standards that limit flexibility, discourage innovation, and are costly to adapt. While significant environmental improvements have been made, the United States is now losing ground.

Earth Day 2012 should mark a new beginning for results-based environmental protection. To do so, Congress must correct a legislative error that occurred during the formative days of our nation's major environmental laws—a time that corresponds to the first Earth Day in 1970.

This *PERC Case Study* spotlights the legislative flaw that entered our organic air and water statutes and now limits progress toward environmental protection. It explains how the statutes became flawed,

demonstrates how the nation is losing ground on environmental quality, and describes how the EPA has worked to cut some of the command-and-control barbed wire that limits lower-cost protection.

This message may seem bleak, but it is not new. The same thing was said in 1997 by Clarence Davies and Jan Mazurek of Resources for the Future following their three-year review of EPA regulation, in which they concluded that “the pollution control regulatory system is deeply and fundamen-

tally flawed” (1997, 2). The two scholars went on to explain:

The current system is focused on how to control pollution rather than on whether pollution should be controlled....The system of the future needs constantly to ask whether human health and the natural environment are being adequately protected. Regulators need to set the standards, ensure that adequate data are available to know that they are being met, and take compliance measures if they are not being met. The means used to achieve the goals are secondary and should be left in the hands of the regulated parties. (Davies and Mazurek 1997, 49)

## PERFORMANCE STANDARDS

The EPA should be directed to simply set performance standards that protect the environment and be held accountable for doing so. Let those responsible for achieving the standards worry about fuels,



The pollution control regulatory system is deeply and fundamentally flawed.

pipes, filters, pumps, scrubbers, and other pieces of machinery for getting the job done. Technology changes but environmental protection must endure.

Students of regulation know there are three types of regulatory instruments that may be used when governments choose to regulate: performance standards that set limits or goals without mandating how the outcomes must be achieved, technology standards that specify how the goal will be achieved, and incentives such as fees, prices, and taxes that put a price on the activity to be limited (Morriss, Dorchak, and Yandle 2005). Any one of

the three can generate a desired outcome, but it is generally agreed that technology standards—the approach mandated by our basic environmental statutes—are the most costly and therefore least effective regulatory choice.

Moreover, there is a persistent knowledge problem that plagues regulators that specify technology standards. No matter how hard they may try, regulators can never know the most effective and efficient technology for addressing a particular pollution problem across countless pollution locations. Market competition, however, spurred by performance standards, unleashes the powers of human creativity to

## PERFORMANCE STANDARDS

**The EPA should be directed to simply set performance standards that protect the environment and be held accountable for doing so.**

Let those responsible for achieving the standards worry about fuels, pipes, filters, pumps, scrubbers, and other pieces of machinery for getting the job done. Technology changes but environmental protection must endure.

solve pollution problems on their own. Regulators can know what goals they want to achieve, and assess progress toward meeting the goals, but they do not know how to best achieve them.

It is possible for environment-conserving market mechanisms to emerge within any of the three regulatory instruments. But it is difficult for markets to emerge in a regulatory system based on technology standards (Showalter and Spigener 2007).

So why did Congress, when drafting the regulations that would later become the Clean Air Act, go with high-cost technology standards that ignored the knowledge problem and precluded the use of property rights and trading for cleaning the nation's air? The answer lies on April 22, 1970, the date of the first Earth Day.

### ENTER EARTH DAY 1970

The first Earth Day was organized by students of the Univer-

sity of Pennsylvania and held at Philadelphia's Fairmont Park. None could have predicted the massive response seen that day. Some 20,000 people stood shoulder to shoulder to celebrate the earth and protest against the perceived absence of efforts to protect it. And if none could predict Philadelphia's event, less than none would have forecast that more than 20 million people nationwide would join the celebration during the next week.

When crowds gather, canny politicians cannot be far behind, especially those who aspire to become president. Such was the case in April 1970. Senator Edmund Muskie, who ran for the White House in 1972, was a keynote speaker that day, and for good reason. Known as "Mr. Clean" because of his environmental dedication, Muskie was chairman of the Air and Water Pollution Subcommittee. His subcommittee was then completing a draft of what would become the first Clean Air Act. The draft called

for setting national air quality standards that would be met by all major stationary pollution sources by way of performance standards. The subcommittee had considered and rejected the use of command-and-control technology standards.

There was yet another aspiring political figure on the stage that day in Philadelphia. A young, energetic Ralph Nader stoked the passions of the crowd when he spoke about evil polluters who were defiling the earth and irresponsible politicians who, locked in captured embrace with their special interest supporters, refused to protect our precious environmental heritage.

In Washington, President Richard Nixon and his political advisors would soon sense Earth Day's significance and become advocates for stricter controls as well. Mr. Nixon wanted to keep his job and was therefore increasingly becoming America's environmental president. Nader, Nixon, and Muskie would soon become engaged in a political

contest that resulted in a flawed statute (Whitaker 1976, 96).

With passions running high, Nader figuratively nailed his thesis on Senator Muskie's office door. As Cass Sunstein (2002, 15) tells the story, Nader charged Muskie with being "soft on industry" and supporting "a 'business as usual' license to pollute for countless companies across the country." Sunstein further indicates that "[e]vidently stung by Nader's criticism, Muskie's subcommittee came to support a dramatically revised bill going well beyond Muskie's original proposal." Performance standards were thrown out and replaced by command-and-control technology standards.

The dramatic change was preceded by an exchange between Muskie's staff in reply to Nader's task force report, which was recorded in the *Congressional Record*. Nader's report challenged that "[l]egislation must be founded on the principle of reducing atmospheric contamination

to the greatest extent technologically possible" (Muskie Archives 1970). Muskie's staff responded:

Senator Muskie believes that public health, not what is technologically feasible, should determine what people must breathe. Even if a maximum application of technology is achieved, not all sources will be controlled to a point where the public health and welfare is adequately protected. The [proposed Clean Air Act] is based on the conviction that the important goals are the preservation and enhancement of the quality of the air and a guarantee that the ambient air quality will protect the public. (Muskie Archives 1970)

Senator Muskie saw a special role for the emerging EPA. The agency was to protect the environment and public health, not become engaged in the design of technology controls.

Even so, as Sunstein points out, presidential politics prevailed.

Muskie made an about face. On the other end of Pennsylvania Avenue, Nixon, having caught Earth Day fever, upped the ante and pushed for even more costly regulations while Nader hectored both ends of the street (Whitaker 1976, 96). Higher cost command-and-control won the day while brighter possibilities for market solutions were pushed to the rear of the policy process.

## RECORD FOR WATER & AIR

What does the record say has happened after 40-plus years of high-cost, technology-based regulation? Does Earth Day 2012 face a new challenge? Is the nation losing ground in the pursuit of higher environmental quality?

Consider the most current EPA data. The 2007 data assessing the nation's lakes rated 56% as healthy (U.S. EPA 2012b). Some 49% have unsafe levels of mercury. The agency's assessment of coastal waters gives about the same picture: 56% good, 35% fair, 6%



Two major sources of water pollution are municipal waste treatment and runoff from agriculture.

poor. Some 14% are impaired (U.S. EPA 2012a). For the nation's rivers and streams, the 2010 data indicate 55% are fishable, down from 87% in 1998, and 55% are swimmable, down from 69% in 1998 (U.S. EPA 2000; 2012b; 2012c). The numbers cited in all cases are based on state reports for all bodies of water surveyed, which never form a complete sample. Still, these are the best indicators available.

Even the EPA data tell us we are losing ground. Indeed, some would look at the losses and call it government failure. But no matter what we call the result, the data give us the source of the problems. The EPA reports that the number one water

pollution contaminants are pathogens, likely the result of raw sewage discharge. The number two contaminant is nutrients—more specifically, phosphorous and nitrogen—often from nonpoint sources. The two major sources of the problem are municipal waste treatment and runoff from agricultural operations and other nonpoint sources.

The data on air quality are better than the water data for many regions. For example, as of 2011, there are 242 nonattainment counties in the United States for ozone and 121 for PM 2.5, particulate matter less than 2.5 micrometers in diameter (U.S. EPA 2011). Interestingly, just nine nonattainment coun-

ties exist for sulfur dioxide, which is the only criteria pollutant managed by markets. Indeed, since 1990, sulfur dioxide emissions have been reduced by 65% and at one-fourth the EPA-estimated cost.

## OTHER LESSONS

As efforts to reduce pollution using technology standards for every major pollution source became unbearably costly, EPA managers pushed to reinterpret the statutes. In 1976, the agency introduced the offset policy, which established highly-restricted markets for emission reductions in the most severely constrained regions of the country (Yandle 1978). In 1981,

EPA announced its bubble policy, which allowed operators of facilities with multiple sources of the same air emission in the same plant to minimize cost across all sources while achieving the same outcome (Maloney and Yandle 1980). Trade was allowed inside industrial plants, but not across plants.

In 1991, the EPA pressed to develop watershed-based nutrient trading communities where publicly owned treatment works and other dischargers are allowed to exchange discharge offsets. In some cases, farmers and land developers who can reduce nutrient runoff at lower cost are included in larger trading communities (Yandle 2008). Here is how the agency describes the new approach, which breaks with the old point-source control model:

Water quality trading is an innovative approach to achieve water quality goals more efficiently. Trading is based on the fact that sources in a watershed can face

very different costs to control the same pollutant. Trading programs allow facilities facing higher pollution control costs to meet their regulatory obligations by purchasing environmentally equivalent (or superior) pollution reductions from another source at lower cost, thus achieving the same water quality improvement at lower overall cost. (U.S. EPA 2012d)

In 1997, some 25 years after the passage of the Federal Water Pollution Act of 1972, the EPA's Water Office announced a major break with the old input approach for managing environmental quality. EPA Assistant Administrator Robert Perciasepe (1997) described the change as one "from a clean water program based primarily on technology-based controls to water quality-based controls implemented on a watershed basis."

Perciasepe announced a policy based on Total Maximum Daily Loads (TMDL) of specified pollu-

tion. The day had arrived when the EPA could issue one permit for a watershed that allowed flexibility and trade for achieving a TMDL goal instead of requiring individual permits for each major discharger based on technology standards. A market emerged through the cracks and crevices of the statute. Trades have now occurred in watershed trading communities in 17 states, but the level of activity is low.

Senator Muskie's original support for outcome-based regulation rose from the ashes. TMDL, a performance standard, became the foundation for nutrient trading. But the remains of command-and-control based on technology standards still echo through the system (Showalter and Spigener 2007).

## FINAL THOUGHTS

Pollution control markets offer promise in other settings. The EPA is currently drafting regulations for controlling CO<sub>2</sub> emissions. Studies of control costs reported recently

by Raymond Kopp (2012, 37) of Resources for the Future show that if firms seeking to offset their CO<sub>2</sub> emission can do so by shopping for the lowest cost source of emission reductions—using international markets—then the cost can be reduced to \$10 per ton in 2020 from \$52 if the firms must shop only in the United States. One low-cost option, if enabled, is associated with paying rainforest owners not to harvest trees. Allowing this would conserve rainforests and reduce CO<sub>2</sub> emissions. Indeed, the scope of the market is global.

Earth Day 2012 is approaching. After 42 years, let us celebrate a higher standard for protecting the earth and improving the environment. We should insist on outcome-based statutes and regulations. We should do our best to remove flawed statutes designed for a smokestack economy and replace them with statutes that embrace tradable rights and leave

room for environment-enhancing markets to emerge. If the task of removing and revising statutes is too great, then we should push for a system of waivers that allows regions, states, and communities to vacate the rigid requirements of the 1970s' statutes in exchange for other approaches—approaches that demonstrate the ability to recover lost ground and achieve new levels of environmental protection.

Let us celebrate Earth Day 2012 and do so in new and better way.

## REFERENCES

- Davies, Clarence J. and Jan Mazurek. 1997. *Regulating Pollution: Does the U.S. System Work?* Washington: Resources for the Future.
- Kopp, Raymond. 2012. If Walmart Were in Charge: Sourcing CO<sub>2</sub> Emissions Reductions at Least Cost. *Resources*. 179: 35–38.
- Maloney, M.T. and Bruce Yandle. 1980. Bubbles and Efficiency. *Regulation*. Washington D.C.: Cato Institute. May/June: 49–52.
- Morriss, Andrew P., Andrew Dorchak, and Bruce Yandle. 2005. Choosing How to Regulate. *The Harvard Environmental Law Review*. 1(2005): 179–250.
- Muskie Archives and Special Collections Library. 1970. Congressional Record. May 14: 15607. Available at: <http://abacus.bates.edu/Library/aboutladd/departments/special/ajcr/1970/Nader%20Task%20Force.shtml#15607-70-T>. Accessed February 29, 2012.
- Perciasepe, Robert. 1997. New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs). Memorandum, Water Office. U.S. EPA. August 8.
- Showalter, Stephanie and Sarah Spigener. 2007. *Pennsylvania's Nutrient Trading Program: Legal Issues and Challenges*. Oxford, MS: University of Mississippi, National Sea Grant Law Center.
- Sunstein, Cass R. 2002. *Risk and Reason: Safety, Law and the Environment*. Cambridge, UK: Cambridge University Press.
- U.S. EPA. 2000. Water Office. The Quality of Our Nation's Water. <http://www.epa.gov/owow/305b/98report/98brochure.pdf>. Accessed March 14, 2012.
- . 2011. The Green Book Nonattainment Areas. <http://www.epa.gov/oaqps001/greenbk/>. Accessed March 2, 2012.
- . 2012a. Water Office. National Coastal Condition Report, 2002. Available at: [http://water.epa.gov/type/oceb/assessmonitor/nccr3\\_fact-sheet.cfm](http://water.epa.gov/type/oceb/assessmonitor/nccr3_fact-sheet.cfm). Accessed March 2, 2012.
- . 2012b. Water Office. National Lakes Assessment 2012: A Fact Sheet for Communities. Available at: <http://water.epa.gov/type/lakes/assessmonitor/lakesurvey/upload/NLA-2012-Fact-Sheet-for-Communities.pdf>. Accessed March 2, 2012.
- . 2012c. Water Office. National Summary of State Information. Available at: [http://iaspub.epa.gov/waters10/attains\\_nation\\_cy.control#STREAM/CREEK/RIVER](http://iaspub.epa.gov/waters10/attains_nation_cy.control#STREAM/CREEK/RIVER). Accessed March 2, 2012.
- . 2012d. Water Office. Watershed Trading. Available at: <http://water.epa.gov/type/watersheds/trading.cfm>. Accessed March 2, 2012.
- Whitaker, John C. 1976. *Striking a Balance: Environment and Natural Resources Policy in the Nixon-Ford Years*. Washington, D.C.: American Enterprise Institute.
- Yandle, Bruce. 1978. The Emerging Market in Air Emissions. *Regulation*. Washington D.C.: Cato Institute. July/August: 21–29.
- . 2008. Markets for Water Quality. *PERC Reports*. Bozeman, MT: Property & Environment Research Center. 26(Fall): 14–17.

BRUCE YANDLE is a PERC Senior Fellow Emeritus. He may be reached at [yandle@bellsouth.net](mailto:yandle@bellsouth.net).

