RESPONSE

Measuring Enforcement's Value: One Step at a Time

by Eric V. Schaeffer

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How well are environmental laws in the United States being enforced, and what difference does that make to the quality of our air and water? Professors Flatt and Collins work hard to find the answers in *Environmental Enforcement in Dire Straits: There is No Protection for Nothing and No Data for Free*, but run into some familiar roadblocks.

The obstacles that make it so hard to link government actions to environmental results are well outlined in the article. The relevant data is too often inconsistent, unreliable, or unavailable, and fractured by a federal system that splits enforcement responsibility between the U.S. Environmental Protection Agency (EPA) and state or local agencies. The number of both independent and dependent variables is overwhelming, as there are so many ways to measure enforcement activity, compliance behavior, and environmental outcomes. Those variables are constantly shifting or being redefined, making it hard to determine whether there is some kind of logical relationship between any of them.

The authors courageously try to pick their way through these minefields. I suffered with them as Flatt and Collins struggle to locate and decode the data they need, and get all the moving parts they examine to sit still long enough to be analyzed. But in the end, I do not think their principal conclusions can be supported based on the data and methodology presented in the article. Also, as the initial hypotheses shifted to compensate for data limitations, I lost track of what the authors were trying to prove.

At the outset, the objective seemed to be to assess how well enforcement achieves broad environmental or public health goals, secures compliance with the law, and punishes violators, compared to more cooperative approaches that rely on voluntary efforts or technical assistance. The authors conclude with a more limited analysis that evaluates the impact of state environmental budgets and "elite" political ideologies on the frequency and duration of Clean Air Act and Clean Water Act violations, and the dollar value of penalties collected.[1]

Because key concepts are not clearly defined, it is hard to accept the "cause and effect" logic the article suggests. For example, the authors sometimes treat "enforcement" as a stand-in for all environmental programs; while at other times, it seems to mean the narrower range of activities that include finding and prosecuting violations. If the authors mean to evaluate the latter, total state environmental spending as a measure of enforcement effort is not a convincing surrogate, as agency budgets must cover a host of unrelated activities, such as sewage treatment grants, permit writing, poster contests, and voluntary programs.

While it is seems reasonable to count the number of violations, a good enforcement program will sometimes multiply those, at least in the short run, because it is more effective at uncovering noncompliance. Also, it is not clear that the authors distinguished between federal and state penalties in their assessment. EPA retains jurisdiction to enforce the Clean Air and Water Acts in all states, its penalties can be quite large, and the federal agency is more likely to act when its state counterparts have not, which may explain why the author found larger penalties in states with more "conservative" ideologies.

While far from perfect, the measures that EPA has developed might have served as a useful starting point for analysis. EPA generally defines enforcement to include the "timely" and "appropriate" prosecution of violations that agencies have identified. Timeliness means moving cases swiftly, with the goal of eliminating noncompliance as quickly as possible. Appropriate actions usually penalize the most serious offenders with fines, and even jail time for criminal defendants, to take away any benefits earned from wrongdoing, and to warn others to avoid making the same mistakes.

These relatively simple concepts mask some internal tensions, though EPA policies try hard to resolve these. For example, enforcement actions tough enough to punish serious violators will take longer—sometimes much longer—than cut-rate settlements designed to get companies back into compliance quickly. On the other hand, cheap settlements reduce both the moral and financial cost of noncompliance, making it easier (and sometimes cost-effective) to pay the fine next time. Speedy resolution and just punishment may not always work in tandem, especially in the U.S.

1. At the beginning, the authors discuss evaluating the relative effectiveness of enforcement and softer approaches that rely on voluntary efforts or technical assistance, but seem to abandon that attempt in the face of data limitations.

judicial system, and the government's agents are forced to choose between these worthwhile objectives every day.

Flatt and Collins frequently acknowledge that government works with limited resources, which suggests that agencies ought to target cases with the greatest impact on environment or the public's health. For more than a decade, the federal agency has consciously focused on violators with the biggest environmental footprints, such as coal-fired power plants, sewage treatment facilities, or big confined livestock operations. The pollution reductions achieved through EPA enforcement actions are tallied up in settlement announcements and annual settlement reports. As with any measure, there are tradeoffs: emphasizing cleanup values can short-change enforcement meant to prevent serious accidents, such as the spectacular blowout of BP's well in the Gulf of Mexico in April 2008.

However it is measured, enforcement response is only part of the story; at least as important is the quality of the effort used to determine whether a violation has even occurred. Historically, both EPA and state agencies have relied upon inspection frequency, but in my experience, the testing, monitoring and reporting conditions of permits have a greater impact, since inspectors can do little when emissions data is simply unavailable. For example, power plants are required to monitor and report hourly emissions of sulfur dioxide and nitrogen oxide, while large wastewater dischargers must sample their effluent periodically and report any results to states. Data from these large sources is online and comparatively easy to search.

In contrast, while power plants, cement kilns, incinerators, and other industries are required to meet hourly emission limits for particulate matter, testing is done so infrequently in many states that the requirements are almost meaningless. We found that some large coal-fired power plants in Texas had not tested particulate matter emissions in more than twenty years, while refineries report many releases based on methods that EPA has determined to be of very poor quality. The problem is widespread, even after a D.C. Circuit decision in December 2008 that upheld a 20-year-old provision of the Clean Air Act requiring that every operating permit for a major source require monitoring sufficient to determine compliance. In too many cases, we just do not know whether a facility is violating the law or not.

Regardless of how monitoring and enforcement response is measured, the end game is getting and keeping facilities in compliance and reducing their impact on the environment. Flatt and Collins wisely avoid chasing after a one size fits all "compliance rate" for industries, since it would be impossible to fit the myriad of requirements under multiple statutes on a single scoreboard. Instead, the authors select "significant violators" under the Clean Air and Clean Water Acts. That is a rational benchmark, but only where monitoring and reporting systems are effective enough to flag serious noncompliance.

The authors conclude early that we lack the means to measure improvements in environmental quality, but that is an overstatement. For example, federal law requires monitoring to determine whether air quality standards are being met, and changes in ambient levels of key pollutants like ozone or particulate matter are tracked over time. Although data quality is much more uneven, states track key indicators of water quality on a regular basis, and they identify rivers and streams that are "impaired" by specific pollutants. It would be challenging to isolate the impact of enforcement on these indicators, which can be influenced by so many other factors.

But although some data is available, I share the authors' concern that it is not enough. We lack reliable indicators of public exposure to many types of pollution, including some of the deadliest carcinogens. Reductions in ozone in a metropolitan area ought not to be used to rationalize the illegal release of toxic chemicals in another community. And even where the environment has improved, it is useful to try to understand what combination of actions brought that about.[2]

Flatt and Collins set out to compare the effectiveness of state programs, but were understandably confounded by so many differences in the type, quality and availability of data that agencies collect. Since the authors began their research, EPA has taken some steps to organize better and present what is available by, for example, posting agency evaluations of state performance programs online. While the federal agency can do more, doing so will be a tough sell given tight state budgets and the current "anti-Washington" political environment.

Meanwhile, we can better use the information we already have by starting small and working with a manageable set of data to try to tease out some modest conclusions. Here are a few ideas:

- We should know what the largest sources of pollution are releasing to the environment, and whether they are meeting emission standards. Research could help compare state monitoring and reporting standards for important provisions of the Clean Air Act or other statutes, and EPA could do more to raise the bar for authorized programs, since so much of this information is already required by law. States that report violations more frequently may actually be taking the time to find them in the first place, instead of making it a practice to "see no evil."
- A few programs, e.g., sewage treatment plants and large industrial sources, are already subject to more or less consistent monitoring and reporting requirements. Closer analysis of these sources could help identify significant differences in the rate, severity, or length of violations. The authors cite a study by University of Kansas researchers that follow this route to compare results from state versus federal enforcement actions for major Clean Water Act dis-

2. It is always challenging to isolate the impact of enforcement or any government program on environmental indicators, which can be influenced by so many different factors.

chargers. This approach would be even more valuable if it focused on similar sources, e.g., sewage treatment plants of approximately the same size and age, or large cement kilns. Analysts could then work backward isolate those factors that seemed to explain differences between one state and another. Perhaps state environmental spending is a key determinant, as Flatt and Collins suggest, but that is hard to know without a more methodical approach that considers other factors.

- Some distinctions ought to be made based on what violators are required to do once they are caught. Researchers could focus on how much and how quickly emissions were reduced, and how frequently the same violators fall back into noncompliance, looking at a subset of requirements for a related group of facilities. Even anecdotal evidence could help, so long as any conclusions are appropriately limited.

The more cautious approach that I suggest would require patience, but could build our knowledge over time, and eventually lead to broader conclusions about how to get the most out of environmental programs.

Meanwhile, we should always remember that environmental law enforcement is also supposed to deliver justice. In plain English, the public will always expect those polluters who can afford it to pay, and any program that fails to deliver that will eventually lose legitimacy. However government agencies choose to measure their own performance, they should never lose sight of that simple truth.