

## Examples and Principles of State-Level Rural Environmental Initiatives

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Many of the biggest environmental policies are federal: the Clean Air Act, the Clean Water Act, and so forth. Yet those federal laws leave important niches to be filled by state authorities; there are areas of environmental policy in which state governments can and should take the lead. Some state policy initiatives are of particular relevance to rural areas. However, two questions must be answered before attempts are made to formulate any such state policy: which environmental problems are “rural?” and “what role should state government play?”

I provide recommendations for state policy related to water pollution and species conservation which employ pollution standards, economic incentives, liability policy enforcement, and measures to improve the technical capacity of state environmental agencies. These problems are likely to be important in many states, and thinking through them provides an opportunity to showcase some general principles of state environmental policy formation.

### **Which environmental problems are rural?**

Many environmental policies have effects on both urban and rural areas. However, we can think of environmental problems as “rural” when the benefits and/or costs of dealing with those problems are borne disproportionately by residents of non-urban areas. Each state is likely to face an idiosyncratic set of challenges to its rural environment, depending on its geographical, ecological, and economic characteristics; one state might have a serious problem with air pollution from large livestock confinement facilities, a second might struggle with the threat posed to its fisheries by pollution of coastal waters, and a third could be fighting to maintain the aesthetic integrity of

its rural landscape. Amid this diversity, water pollution and species conservation are common and important components of the sets of rural environmental challenges faced by states across the country. If legislators understand why these two problems are important to rural areas, they may also be able to identify other problems that might be especially important in their own state.

The damages associated with water pollution, and thus the benefits of cleaning it up, accrue most importantly to rural communities. Some of that damage is in the form of lost recreational benefits. Polluted rivers and lakes have diminished value for swimming, boating, and fishing; that loss may be felt deeply in rural areas that have a natural comparative advantage in outdoor recreation. More serious damage, however, comes in the form of drinking-water contamination. Public water systems in rural areas, when they exist, tend to be very small, and many rural areas rely heavily on wells for drinking water. In both cases, the cost of eliminating contaminants from drinking-water sources is very high compared to the costs faced by those (largely urban) water systems that are large enough to exploit economies of scale in water purification. Thus, groundwater and surface-water pollution in rural areas often presents residents with a painful choice between consuming water with unacceptably high levels of contaminants and paying very high bills to clean it up. While the sources of water pollution may or may not be rural, some of the most harmful effects are.

Conversely, the source of species and habitat endangerment is usually human activities in rural areas or at the urban fringe, while the harm caused by such destruction accrues much more broadly. While

rural areas do gain some benefits from ecosystem services and interaction with wildlife, we have federal law protecting endangered species because people across the country value the existence of diverse plants and animals, even if they will never interact with those plants and animals directly. Conservation is a rural environmental problem largely because effective conservation policy must entail changes in human behavior toward rural lands and wildlife.

Most urban areas have already developed much of their natural lands and driven out most of the species that can not live in harmony with densely settled humans; there are few opportunities for conservation there. At the other end of the spectrum, there is no threat from humanity to ecosystems and species in unsettled areas that are devoid of economic activity. The greatest danger, and thus the greatest conservation potential, is found in lands that are on the margin. Activities such as development, logging, grazing, mining, and farming all pose threats to natural lands and their non-human inhabitants, either by stressing the ecosystems or by converting lands from natural status altogether. Thus the costs of conservation are often the opportunity costs associated with limiting or restructuring those human behaviors in rural or ex-urban areas.

### **When should the state get involved?**

When we identify environmental problems that call for government intervention, it can be difficult to decide which level of government (federal, state, or local) is best suited for the job. “Environmental federalism” has been the subject of extensive study by environmental economists. Several principles emerge from that body of work (see Oates, 2001, for a review.) First, we want an environmental problem to be handled by a governmental body such that all (or at least most) of the costs and benefits of any policy will be borne within that government’s jurisdiction. If, for example, a town decides how much air pollution a local power plant should be allowed to emit, that city government may ignore the costs borne by downwind communities and allow more pollution than is best for society at large.

According to this principle, and given the limited transport of pollutants through groundwater, the state is probably the right level at which to form policy about pollution of many groundwater supplies (though there will clearly be complications when very large aquifers overlap state borders.) Many of the costs and benefits of surface-water pollution are likely to fall within state boundaries as well. It is true that some surface-water contamination has interstate effects, but

rarely are those effects national in scope. Hence, the appropriate governance of water quality is likely to lie in states, parts of states (like Southern California), and regional coalitions of states that can negotiate to ensure that policy in this area does not neglect cross-boundary effects (e.g., the Chesapeake Bay Program and the Great Lakes Regional Collaboration).

The costs of conservation are likely to lie largely within a given state, but the benefits surely spill over to the rest of the country. Any state-level conservation initiatives might, on their own, tend to under-invest in conservation activities. This concern is mitigated, however, by the fact that any state-level policy must conform to the federal Endangered Species Act (ESA). The ESA may help to prevent extreme levels of under-conservation on the part of the states (though the ESA is too blunt a law to ensure anything like “optimal” conservation).

A second principle of environmental federalism predicts when it is actually better, and not just acceptable, to have state-level policy instead of federal (or local rather than state). This principle points out that it is best to push policy making into more local hands when idiosyncratic local information and preferences are important for designing and implementing good policy.

States have long argued that this is true of conservation policy, and they may well be correct. State officials may be in a better position to understand how local economic agents will respond to the restrictions or incentives that may make up such a policy. They may also have better information about the ecosystems and species in the state, and exactly what sorts of changes are necessary to protect them. This idiosyncratic knowledge may enable state initiatives to reduce the cost to the state’s rural communities of providing conservation.

A similar argument probably holds for water pollution. At a time when most water pollution comes from nonpoint sources (farms and suburban lawns rather than factory pipes), states may have better access to detailed information about pollution sources. State officials may better understand what policies are likely to lower pollution levels and yet be enforceable. They may also have a better sense of what the true benefits of pollution reduction in the state really are. State-level initiatives may yield more appropriate levels of cleanup for their rural residents than uniform federal mandates, and may accomplish that cleanup at lower total cost.

A third principle is sometimes invoked in arguments that prefer regulation to be housed at large jurisdictions rather than small: concern that localities might “race to the bottom.” Advocates of this

viewpoint worry that cities, counties, and even states might reduce levels of environmental quality to sub-optimal levels because they cannot resist the impulse to compete with one another for economic activity like housing and commercial development, mining, and industry that might be repelled by environmental regulation. However, empirical studies have not found strong evidence to support this concern, though some (e.g. Millimet, 2003) find evidence that states have engaged in a “race to the top.”

### Policy directions for state legislatures

State legislatures can launch policy initiatives by passing new legislation. In many areas, however, the legislature needs mainly to target increased funding to the relevant state agencies (often the state environmental protection agencies or departments of natural resources) to make sure that adequate resources are available to carry out environmental-policy mandates.

To mitigate the damage done to rural communities by water pollution, state legislatures can certainly support policies that reduce water pollution levels themselves. The federal EPA is supporting a long-stagnant mandate set forth in the Clean Water Act for states to set and enforce total maximum daily loads (TMDL) of pollutants into surface waters within their boundaries. State agencies have a great opportunity to choose pollution-reduction goals and the policies they will use to achieve them, but it is a task of staggering scale and complexity; state legislatures should provide the relevant agencies with adequate funding to do this right. State governments can also protect the water supplies that are crucial to rural areas by making sure that at least one state agency takes seriously its role as state trustee. Under CERCLA and the Oil Pollution Act, trustee agencies are supposed to hold responsible parties liable for natural resource damages associated with spills of oil and hazardous chemicals. By enforcing those liability laws, state trustees can provide economic agents with appropriate incentives to avoid accidental releases that contaminate groundwater supplies (Ando and Polasub, 2006).

Other state initiatives can reduce the harm done to rural residents by water pollution by taking steps to lower the costs of abating drinking water contaminants. At a simple level, legislatures can create programs that provide technical support for small water systems and well owners. More sophisticated policies might aim to encourage restructuring of settlement patterns and, consequently, drinking-water supply infrastructure. Incentives could be provided to

developers and municipalities to ensure that fewer residents depend on wells, and that new drinking water capacity is provided by enlarging existing systems rather than spawning new systems that are too small to be efficient.

In the conservation arena, states can reduce the cost to their rural communities of providing necessary conservation benefits by developing proactive conservation programs. It is likely to be cheaper to avoid crises with endangered species through planned growth and conservation reserve initiatives than to have to impose emergency restrictions on economic activity after a species or ecosystem has been seriously imperiled (Shogren et al., 1999). Agricultural states can refocus state Conservation Reserve Enhancement Programs (CREP) to enhance wildlife prosperity in farming areas. Legislatures can also provide funds to improve the analytical capabilities of state conservation agencies, enabling conservation reserves to be planned and managed with state-of-the-art expertise.

### References

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