



## Marcellus Shale

### Shale Gas Development and Protection of Forest and Water Resources

**T**he Pinchot Institute's work on Marcellus gas development illustrates the ways in which the Institute contributes to better informed policymaking and civil dialogue on some of today's most important issues in conservation and environmental sustainability.

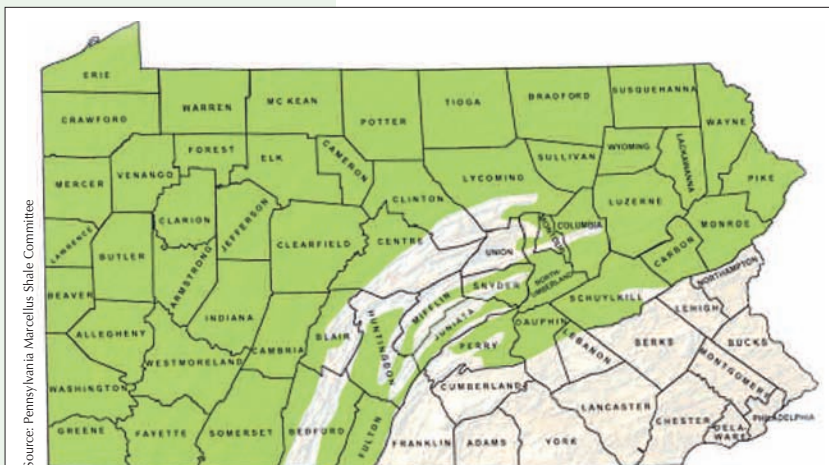
The development of shale gas resources in the US, in particular the Marcellus Shale Formation that underlies major areas of Pennsylvania and the central Appalachians, poses a significant dilemma for conservation. The use of natural gas, which produces roughly

half the carbon dioxide emissions as coal, is regarded as an important means for reducing greenhouse gases that contribute to climate change. It is a valuable "transition fuel" as we improve technologies for renewable energy such as wind and solar. It is also a strategically important domestic energy source, and one that can generate significant new employment in persistently depressed local economies in this region. On the other hand, the hydraulic fracturing (or "fracking") methods used to extract shale gas continue to raise serious concerns about impacts on the environment, especially water supplies.

Nowhere is the public policy debate over shale gas development more critical than in the Delaware River watershed, which supplies drinking water to nearly 17 million

people each day. In 2008, the Pinchot Institute led an effort to develop a higher standard of "best management practices" to be used by the gas industry should any shale gas wells be drilled in the headwaters region of the Delaware River. These standards call for measures to minimize the risk of accidents that could negatively impact surface water resources, and intensive real-time monitoring to ensure rapid, effective containment of any spills of chemicals, fuels, or fracking fluids that might occur. These standards, published in *The Marcellus Shale: Resources for Stakeholders in the Upper Delaware Watershed Region* (December 2010),

are widely utilized by citizens and organizations involved in the public review of regulations under development by several state governments and by the Delaware River Basin Commission.



The Marcellus shale formation (in light green) underlies roughly 60% of the state, and ranges in depth from 250 feet to 9,000 feet.

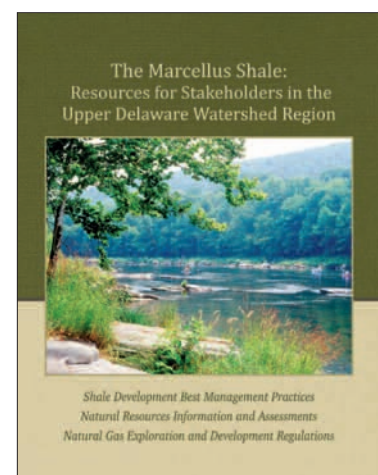
[pinchot.org/marcellus\\_shale](http://pinchot.org/marcellus_shale)



© G. Bailey/WIREO

1616 P Street NW, Suite 100  
Washington, DC 20036  
202.797.6580

A program of

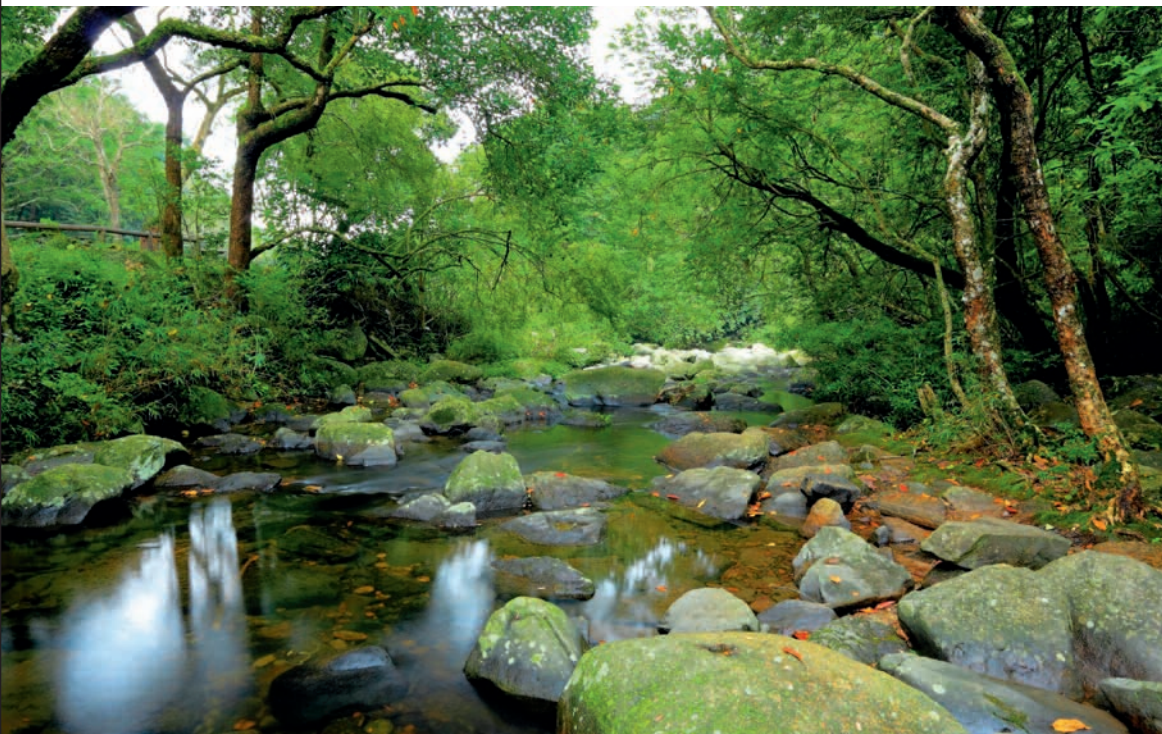


*The Pinchot Institute facilitates constructive civil dialogue to promote a more informed public debate on the pressing resource and conservation issues of the day.*

As the controversy over gas drilling escalated, it became clear that many organizations had only a fragmentary grasp of scientific findings important to an informed decision making process on this issue. In cooperation with the Academy of Natural Sciences in Philadelphia, the Pinchot Institute convened a public workshop that included a range of scientists from universities, government agencies, public interest organizations, and the natural gas industry itself to present the most current available scientific information on the environmental risks of shale gas development and how they can best be controlled. In spite of the backdrop of heated controversy, the workshop brought together a diversity of stakeholders and scientists in a constructive civil dialogue that produced new insights and knowledge, and contributed to a more informed public debate on a key conservation issue for which there are no easy answers. The report from the workshop, *Assessing the Environmental Effects of Marcellus Shale Gas Development: The State of Science* (April 2011), can be found at <http://www.pinchot.org/gp/EffectsofMarcellusShale>.



This project was made possible with major funding provided by the William Penn Foundation; The Heinz Endowments; Nestlé Waters of North America; and USDA Forest Service.



A well pad in Bradford County, PA