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Drilling of the Marcellus Shale has already begun in nearby Dimock Township, Pennsylvania, and so have the first reports of dangerous spills. In September 2009, three spills of hydraulic fracturing fluid totaling more than 8,000 gallons polluted local wetlands and a creek, causing a fish kill.

Protecting New Yorkers' Health and the Environment by Regulating Drilling in the Marcellus Shale

For more information,
please contact
Kate Sinding
(212) 727-2700



www.nrdc.org/policy

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With rising energy costs and fears of more volatility in the future, the natural gas industry is now searching for additional fuel sources. One such source is the natural gas-rich Marcellus Shale, an ancient rock formation that spans 600 miles and four states, including New York. Innovations in drilling technology have made it more attractive to tap the approximately 50 trillion cubic feet of natural gas stored in the Marcellus Shale. While there may be benefits to drilling this large natural gas reserve, doing so without the proper monitoring and regulation by state and local officials will present a number of serious threats to human health and the environment in New York State. NRDC is therefore working with leaders across the state to ensure that if drilling in the Marcellus Shale occurs in New York, it will be done responsibly and only in appropriate areas.

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Learning Hard Lessons from the American West About Drilling

For an in-depth discussion of the loopholes that allow oil and gas companies to continue polluting despite the risks, visit www.nrdc.org/policy to read the NRDC report *Drilling Down*. The report also profiles people living in the West who have been affected by oil and gas drilling and offers solutions for reducing the risks.



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Rising Demand for Natural Gas in the Marcellus Shale

Named after a distinctive rock outcropping located near Marcellus, New York, the Marcellus Shale (also referred to simply as the Marcellus) is a rock formation that spans approximately 600 miles, covering roughly 54,000 square miles in Western New York, Pennsylvania, West Virginia, and Ohio. The Marcellus originated as an ancient inland seabed between 350 and 412 million years ago. Recent technological innovations coupled with high energy prices and the proximity of the Marcellus to many natural gas consumers have all made drilling in the Marcellus extremely desirable to natural gas companies. In Marcellus states, such as Pennsylvania and Ohio, drilling is already underway. The state of New York has put an effective moratorium on drilling in the Marcellus as the State Department of Environmental Conservation (DEC) works to complete its ongoing environmental review process, currently scheduled to be finished by the end of 2009.

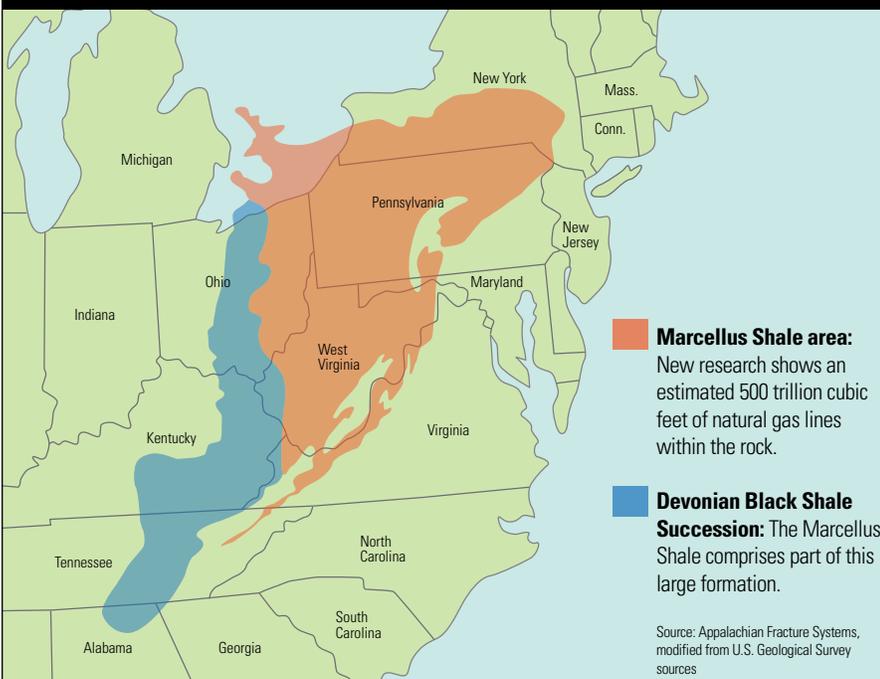
Technological Advances Increase Access to Natural Gas

Drilling technologies, including horizontal drilling and hydraulic fracturing, have made it easier to recover natural gas from “tight” shale formations. Horizontal drilling involves drilling a well at an angle that allows access to natural gas stored in vertical fissures in the shale. Hydraulic fracturing (also referred to as hydro-fracking) involves injecting large quantities of water combined with sand and chemicals (commonly referred to as fracking fluid) at high pressure into the ground to expand pores and fissures thus allowing greater quantities of natural gas to flow. Although these techniques can yield increased quantities of natural gas from a drilling site, they also carry a variety of risks, including depleting water supplies, contaminating drinking water with dangerous chemicals, and causing air pollution. These potential risks to human health and the environment demand strict oversight and strong regulatory framework.

Putting at Risk Critical Water Supplies

Hydraulic fracturing requires vast quantities of water—on the order of millions of gallons per well. The DEC's lack of authority over groundwater and surface water withdrawals has created a situation in which gas drilling companies would be allowed to withdraw large quantities of water without the State's permission. Since 1 million acres of the Marcellus Shale are in the New York City watershed, drilling in this area poses a significant threat to the approximately 9 million New Yorkers who depend on the watershed for clean, unfiltered water. Additionally, gas drilling affects the Delaware River Basin, which provides water to upstate New York, Trenton, Philadelphia, and other areas. In total, the Delaware and New York City watersheds serve more than 15 million people, with thousands more depending on these water sources for their private wells. Reports of drinking water contamination associated with natural gas production have come from a number of other states in which hydrofracking occurs, including Colorado, Texas, Ohio, and Pennsylvania.

The Marcellus Shale Formation



Understanding the Threat of Chemical Contamination

Hydraulic fracturing involves the use of multiple chemicals, including friction reducers, biocides, surfactants, and scale inhibitors. The introduction of these harmful chemicals into the soil as part of normal drilling practices, or as a result of leaks, spills, or other releases, can contaminate surface and underground water supplies. Although these fluids may contain toxic substances that can cause a variety of adverse health effects, including contributing to cancer, the industry to date has not been required to publicly disclose the chemicals used during hydro-fracking and drilling. Most recently, the DEC has required companies to disclose chemical ingredients to the agency, but has withheld that information from the public on the basis that it is a protected trade secret. This makes it difficult or impossible for the residents of New York to monitor their own water supplies for contamination, in addition to severely hampering medical treatment in the event of exposure.

Fortunately, legislation known as the Fracturing Responsibility and Awareness of Chemicals (FRAC) Act has been introduced in both houses of Congress that would require this information to be made public.

Dealing with Dangerous Drilling Byproducts

Gas drilling results in the generation of a byproduct referred to as “produced water.” Removed from the ground in order to allow gas to flow, produced water may be contaminated through contact with the natural gas itself, fracking fluids, or even naturally occurring radioactive materials. Produced water and recovered “fracking” fluids, along with other drilling byproducts, must be treated either on- or off-site prior to disposal. The lack of adequate treatment facilities in New York State poses a serious problem. Moreover, storing contaminated liquids in holding ponds or other vessels prior to treatment is dangerous given the risk of seepage or overflow.



Natural gas well pad with open waste pond.

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Marcellus Shale Extent 2007 Production – Recent Wells

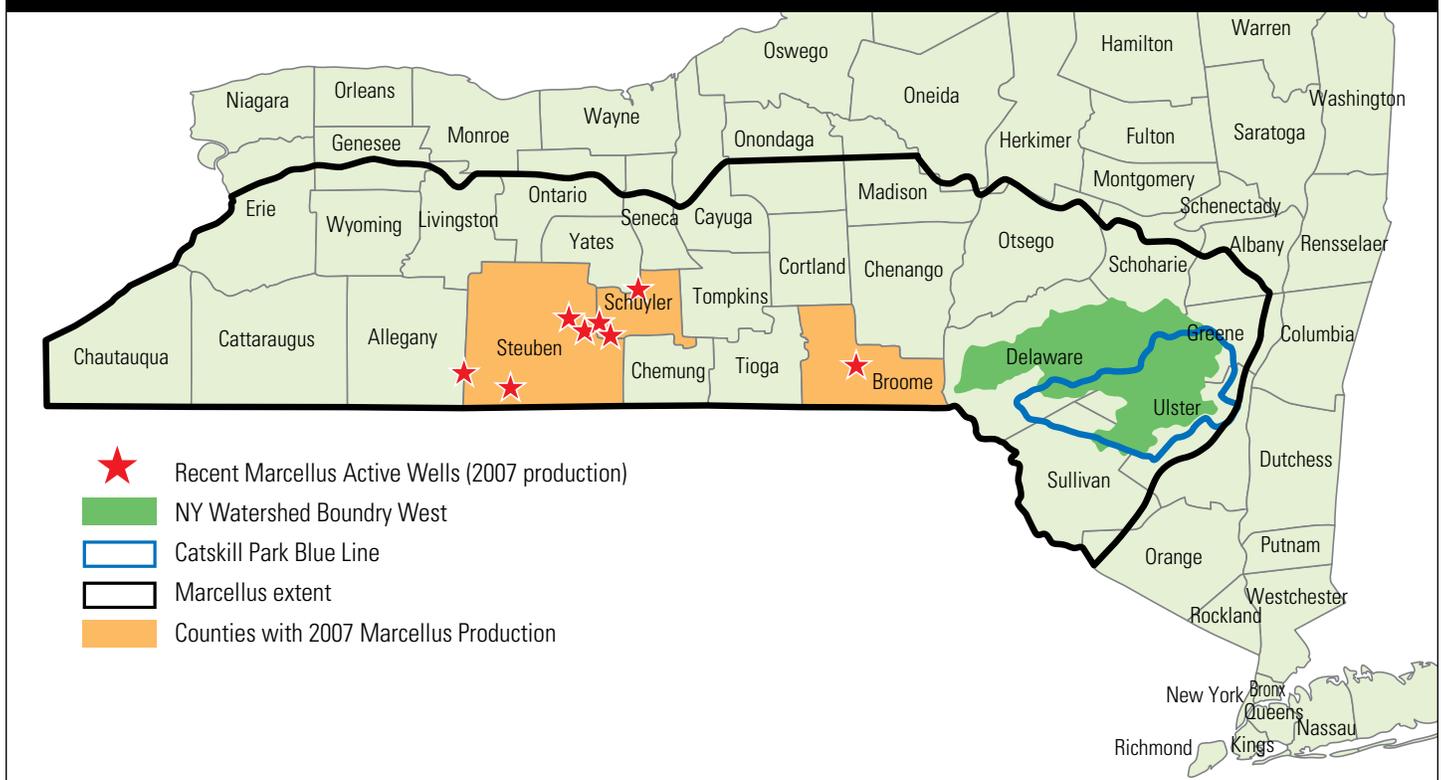


Image adapted from map produced by the New York State Department of Environmental Conservation.

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Accounting for Air Quality, Land Use, and Other Impacts

Natural gas drilling can also lead to reduced air quality, increased noise, destructive land clearing, and lasting negative changes to the visual landscape. Truck traffic and diesel equipment used in the drilling operations emit particulate matter and other dangerous air pollutants. Hazardous air pollutants are also discharged during drilling operations. Pristine and valuable land and animal habitat often must be cleared for the well drilling pads, access roads, and accessory pipelines, which may lead to increased storm water runoff and habitat fragmentation. Additionally, the drilling of tens of thousands of wells statewide can lead to negative changes in the character of landscapes and communities that is disruptive to long-time residents and presents a threat to tourism income.

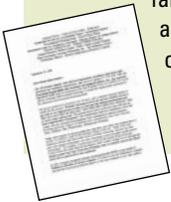


A well pad and neighboring church in Pennsylvania. To avoid this future in New York, proper regulations must be established to protect the health of residents and the environment, while also preserving the natural beauty of the region.

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A National Call to Protect Our Health and the Environment

Visit <http://docs.nrdc.org/water> to read a coalition letter from more than 160 national, regional, state, and local conservation, faith, sportsmen, and community organizations in support of the FRAC Act.



Protecting People and Places Across New York State

NRDC is working to ensure that the proper regulatory structure is in place to safeguard the state's environment and the health and well-being of New York State residents before gas drilling occurs in New York. NRDC is currently:

- identifying areas that should be placed permanently off-limits to drilling through adoption of a zero-risk policy applicable to the most environmentally valuable sites;
- identifying areas where policy changes are needed, including demanding full disclosure of chemicals used in drilling and fracking fluids and allowing the State of New York to regulate water withdrawals; and
- working through existing environmental review processes and implementing additional measures to require stringent regulations that protect the environment and human health where drilling is allowed to proceed.

What You Can Do

By taking the following three actions you can contribute right now to ensuring that gas drilling in the Marcellus Shale does not proceed in New York without full protections for New Yorkers' health and the environment.

- Participate in the ongoing environmental review process by letting the DEC know it must adopt a approach to regulating natural gas drilling in the Marcellus that is fully protective of our environment and health. Watch for alerts from NRDC when the draft environmental impact statement is issued for public review and comment and then respond.
- Ask your local and statewide elected officials to insist on a thorough review of the potential risks of drilling in the Marcellus and an implementation of the most stringent regulatory structure.
- Visit www.nrdcaction.org/passthefracact to urge your congressional representatives to become a co-sponsor of the FRAC Act (H.R. 2766/S. 1215). This proposed federal legislation would protect human health and the environment by requiring disclosure of the chemicals used in fracking fluids.