

## Health Risks from Chemicals in Fish

Many spills that occur around drilling sites involve quantities of fluid so large that creeks and streams are contaminated. In New York, about half the spills related to gas drilling are due to leaky pipelines carrying flowback from the fracking process.

Freshwater fish are likely to be contaminated because of their proximity to human activities and contamination sources, such as drilling sites. When favorite fishing waters contain high levels of contaminants, the fish and the people who eat the fish will also.

These chemicals build up in our bodies over time. Problems that may result from these chemicals range from small-to-sub-clinical changes in health, to birth defects and cancer. Women who eat contaminated fish while pregnant run an increased risk of having children who are slower to develop and learn. These chemicals usually have a greater effect on developing organs in young children or in the unborn child. Many chemicals may be passed on in mother's milk.

The NYS Department of Health has issued advice about consuming wild caught fish, game and waterfowl, which may contain harmful levels of chemicals.

*NYS Regulation pertaining to wellbore (not well pad) setbacks:*

### **§553.2 Surface restrictions**

*"No well shall be located ... nearer than 50 feet from any public stream, river or other body of water."*

<http://www.dec.ny.gov/regs/4464.html>

## Don't Let It Happen Here...

Short-term, high volume water withdrawals needed for the hydraulic fracturing process can acutely affect blue-ribbon trout fisheries. Small, headwater streams that boast trout populations and their spawning habitat are unfortunately often the closest and most convenient source of water for drilling wells.

Agencies overseeing the drilling process do not have sufficient funding and staffing to inspect and monitor gas wells on a regular basis. Drilling rules and existing regulations are neither adequate nor effectively enforced.

Neither Pennsylvania nor New York have comprehensive regulations and monitoring programs to determine how much water can be or is being taken from streams, rivers, lakes and the ground for hydraulic fracturing; therefore, regulatory agencies cannot sufficiently determine the cumulative impacts on water resources, aquatic life and habitat from gas drilling and hydraulic fracturing.

There are no wastewater treatment facilities that can adequately treat large volumes of gas production wastewater before it is released into rivers. .

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Links to hunting, fishing and outdoor-interest publications can be found at:

[www.un-naturalgas.org/hunting.htm](http://www.un-naturalgas.org/hunting.htm)

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**You can help. Get involved.**

**To find a group near you visit:**

**[www.DamascusCitizens.org](http://www.DamascusCitizens.org)**

## ***What happened to the fish? What happened to the stream?***



Drill Site next to Beaver Run Water Reservoir, PA  
Photo: Marcellus-Shale.us

***Gas drilling threatens aquatic life, pristine fishing streams, and valuable water resources.***

## ***Aquatic Life at Risk***

The Eastern Brook Trout Joint Venture, a multi-agency partnership, found in its comprehensive review that habitat fragmentation and sedimentation are two of the major impacts limiting the health of brook trout populations.

The Monongahela River, source of drinking water for 350,000 people and habitat for endangered mussels and a rich diversity of warmwater fish including bass, sauger and walleye, was so polluted with used track fluid in 2008 that its water wasn't even fit for industrial use.

The 2009 fish kill of Dunkard Creek PA was caused by golden algae bloom. The bloom was caused by high chloride levels, an indication of track water, not mine pollution (which would be high in sulfates).

Inspectors found evidence that Marcellus Shale waste fluids had impacted Alex Branch [PA], a wild trout stream and high-quality fishery. Tests of drinking water at a nearby hunting camp revealed barium four times above the state and federal drinking water limits.

In the last two years fish, including wild brook trout, have been left rotting in the sun when gas companies pumped dry Pennsylvania streams, including Cross Creek and Sugarcamp Run in Washington County. Amphibians such as hellbenders are especially vulnerable in low water levels.



Trout fishing in America?  
Photo: Robert Burns

## ***Pristine Fishing Streams at Risk***

Over 5 million gallons of potable water are needed for the hydraulic fracturing of each horizontal shale well. Trout magazine reported that four gas companies have paid a total of \$1.7 million to settle charges of illegal water withdrawals (nearing 6 million gallons) from Pennsylvania trout streams including Larry's, Big Sandy Run, Meshoppen, Pine and Sugar Creeks.

Stormwater runoff and sedimentation increases total dissolved solids (TDS) and total suspended solids (TSS) in creeks and tributaries. When TDS or TSS increases, the amount of light available to oxygen producing plants decreases. When aquatic plants die, the bacteria that consume them use even more oxygen. As oxygen levels are depleted, aquatic life follows a downward spiral.

***"Even if everything is done right," says Steve Kepler, fisheries biologist with the Pennsylvania Fish and Boat Commission, "if all the water withdrawals comply with regulations and all other protections are in place, the impact is still going to be huge. These places just aren't going to be the same anymore." (March 2007 Field and Stream Magazine)***

Public lands that may have been available to sportsmen in the past may now be posted by a gas company limiting access. Approximately 30% (2.1 million acres) of Pennsylvania's state forests and 12% of New York's state lands have been leased for drilling. Where private land has been leased for gas drilling similar restrictions apply.

Conservationists and labor leaders have testified that energy development on public land is failing wildlife and squeezing out hunters and anglers.

## ***Water Resources at Risk***

Surface and ground water contamination from chemical spills, leaks, faulty containment systems and illegal discharges does serious environmental damage. On-site storage of fracking chemicals and wastewater has been shown to pose a serious threat to streams and aquatic life.

Natural gas wastewater often contains heavy metals such as barium and strontium and radioactive elements such as radium and uranium, in addition to the chemicals added during the drilling process. It is so toxic that most states require deep well injection disposal. The geology of NYS geology cannot accommodate this disposal method.

Drilling wastewater contains such a high level of mineral solids that it can be five times as salty as sea water. Thus, it can kill aquatic life and ruin industrial machinery.

Of the roughly 6 million barrels of drilling waste water produced in 2010 in PA, roughly 3.6 million barrels were sent to PA treatment plants and ultimately ended up in rivers, many of which provide drinking water to local residents. Even industrial water-users have had to close their water-intake ports downstream from treatment plants.



Photo: Marcellus-Shale.US

*Pollution floats atop a Pennsylvania creek. Notice the rainbow oil-like slick, the suspended mud and golden color.*

***Report water with any of these characteristics to:***

***EPA hotline 877-919-4372;***

***NY DEC 800-457-7362;***

***PA DEP 484-250-5900;***

***PA EMC 1-800-424-7362.***