

Comments for the Delaware Basin Watershed Commission
Re Potential Effects of Hydraulic Fracturing on the Watershed
Date: February 21, 2011

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Thank you for including the public in these deliberations.

My name is Ann Guenther and I have been employed as a naturalist for 20 years and involved in the study of New York ecosystems, including watersheds. I am also a member of Mohonk Consultations Board of Managers, bringing together people of diverse perspectives to solve important problems, basing our decisions on the interrelationships of all life on earth. Currently I chair the New Paltz Climate Action Coalition, that is a member of New Paltz Climate Smart Community Task Force.

My concerns today have to do with the technology of slick-water, high volume hydraulic fracturing as an overlay on a New York watershed, with the added overlay of climate change.

Hydraulic-fracturing endangers a watershed in two ways:

1. **Withdrawing large volumes of water from the watershed creates the potential for limiting available fresh water** for both natural systems, including the flora and fauna of a region, and for human use, particularly for farming and for drinking water.

We must now add an overlay of climate change events which scientists have predicted for our Northeast Region, and which, in fact, seem to be happening more rapidly than previously thought. One is **periods of extreme drought**, already experienced in the past few years.

Withdrawal of huge quantities of water for hydraulic-fracturing could **potentially deprive farmers of critical irrigation supplies, and lead to massive crop failures**. New York farmers supply food not only locally, but also for export. This could have a devastating effect on one of New York's most important industries, further impair our economic stability, and lead to food shortages and a rise in food prices.

Withdrawal of huge quantities of water for fracking could also **deprive local ecosystems of crucial water supplies, especially at critical times**, such as breeding periods and during droughts. Woodland pools, for example, must maintain specific levels of water for the development of amphibian eggs. Already, we have documented cases of thousands of these eggs in a single pool, dessicated and rendered non-viable, due to drought conditions.

Available drinking water for the entire range of plants and animals is critical to ensure their survival, and the continuity of the food chain. Wetlands are especially important and are susceptible to drought conditions. Larger fauna such as Black Bears depend on wetland areas especially in the warmer seasons (that will, in the future, become even warmer), as places of refuge not only for cooling, but for ridding themselves of parasites.

2. **Use of toxic substances in the process of hydraulic-fracturing has the potential for contaminating fresh water supplies** for both humans and inhabitants of our natural ecosystems. As the contaminated hydraulic fracturing fluids are stored either underground, in collecting pools or storage units, they become susceptible to the effects of severe weather events, especially torrential rains and flooding.

Climate scientists have predicted a rising number and increasing severity of precipitation events each year, which we have already witnessed. During such events, contaminated waters can easily be mixed into flood waters, spreading contaminants over farm fields, thereby rendering them toxic and useless. Such toxic waters could also enter aquifers that supply drinking water for people in the area.

These contaminated flood waters could also easily invade streams in the watershed area, thereby affecting millions of people in the river basin area. To date, there is no viable way to separate out the toxins, nor would there be adequate time to do so in the event of a flood.

In the natural ecosystem, contaminated waters could invade wetlands, ponds, streams and rivers, with devastating effects on both the flora and fauna of a region. With our ecosystem already in jeopardy from climate changes, we could envision further loss of species and a massive degradation of the ecosystem with unpredictable consequences.

It is therefore my opinion, especially given the extreme consequences of climate change, that unless and until the technology of hydraulic-fracturing is modified to eliminate massive withdrawals of water, along with the elimination of toxic substances, it should not be a permitted use in the Delaware River Watershed Basin.

Thank you for your consideration of these ideas.