

Watershed Wednesdays Week 5 – Fracking, Climate Change and the Impacts on Water

- In a press event at COP23, Robert Howarth, the David R. Atkinson Professor of Ecology at Cornell University said, “Methane is an important greenhouse gas and is currently responsible for an amount of global warming equal to approximately 60% of that caused by carbon dioxide. Methane reductions offer one of the few available approaches to immediately slow the rate of global warming, since the climate responds more quickly to decreases in methane compared to carbon dioxide.” A ban on fracking in the Delaware River Basin is an important step in limiting methane emissions, but allowing water withdrawals and the processing of fracking waste in the Basin will only enable more fracking and, therefore, more methane leaks outside of the basin.
- A 2017 study by researchers at the Northeast Climate Science Center and Climate System Research Center at U. Mass Amherst found that the Northeastern U.S. is the fastest-warming region in the lower 48 states, heating at a rate 50 percent faster than the global average. According to the Union of Concerned Scientists, “Records from the mid-twentieth century through 2000 show that the number of snow-covered days across the Northeast has decreased significantly.” The shrinking snowpack and increased runoff will worsen as temperatures continue to rise. Further reducing our water supply by moving water out of the basin and exposing our remaining water to fracking waste contamination should not be permitted, especially when those practices support the fossil fuel production that is exacerbating warming in the first place.
- In fact, at the very same time that warming is posing risks to our water supply, the amount of water required for fracking is increasing. “Oil and natural gas fracking, on average, uses more than 28 times the water it did 15 years ago, gulping up to 9.6 million gallons of water per well.” More clean water contaminated means more waste. Fracking was never a good idea, but, as the problems it helped create intensify, it has become such a bad idea that it must be stopped. The Delaware River Basin Commission must provide the protections the Basin deserves and vote in favor of a full ban on fracking, water extraction, and fracking waste processing.

Sample Letter

To the Delaware River Basin Commissioners -

Days before the deadly and destructive bomb cyclone that hit the Northeast on March 2nd, Penn State atmospheric scientist and author Michael Mann said in an interview on **Public Radio International's** *Living on Earth*, “We are seeing a taste of what's in store and there's no question in my mind that, in the unprecedented extreme weather that we've seen over the past year, we can see the fingerprint of human influence on our climate.”^[i]

NOAA's National Centers for Environmental Information lists extreme weather events on *U.S. Billion-Dollar Extreme Weather & Climate Disasters 1980 – 2017*. The list is searchable by state and by year. Since 2000, 46 events have occurred in one or more of the Delaware River Basin's 4 watershed states. The damage caused by those events in all areas of the country they impacted totals \$292.8 billion and the total number of lives lost is 1,318.[ii]

Mann said that it would be a mistake to see these extreme weather events as the 'new normal'. What we are dealing with is an "ever-shifting baseline...." So, there isn't a new normal," he explains. "Things get continually worse if we go down this highway. What we need to do is to take the earliest exit ramp that we can in the form of decreasing our emissions and transitioning from fossil fuels to renewable energy." [iii]

Natural gas is a particularly impactful fossil fuel. In his piece "*Methane Leaks Erase Climate Benefit of Fracked Gas, Countless Studies Find*", Joe Romm lists some of the studies that point to the substantial leaks that occur at every step of shale gas production.[iv] Those leaks are especially damaging because methane is at least 86 times more efficient than carbon dioxide is at trapping heat.

At a press event at COP23, Robert Howarth, the David R. Atkinson Professor of Ecology at Cornell University said, "Methane is an important greenhouse gas and is currently responsible for an amount of global warming equal to approximately 60% of that caused by carbon dioxide. Methane reductions offer one of the few available approaches to immediately slow the rate of global warming, since the climate responds more quickly to decreases in methane compared to carbon dioxide." [v] A ban on fracking in the Delaware River Basin is an important step in limiting methane emissions, but allowing water withdrawals and the processing of fracking waste in the Basin will only enable more fracking and, therefore, more methane leaks outside of the basin.

We would face profound basin-wide impacts, as well. A 2017 study by researchers at the Northeast Climate Science Center and Climate System Research Center at U.Mass Amherst found that the Northeastern U.S. is the fastest-warming region in the lower 48 states, heating at a rate 50 percent faster than the global average.[vi] [vii] According to the Union of Concerned Scientists, "Records from the mid-twentieth century through 2000 show that the number of snow-covered days across the Northeast has decreased significantly." [viii] The shrinking snowpack and increased runoff will worsen as temperatures continue to rise. Further reducing our water supply by moving water out of the basin and exposing our remaining water to fracking waste contamination should not be permitted, especially when those practices support the fossil fuel production that is exacerbating warming in the first place.

In fact, at the very same time that warming is posing risks to our water supply, the amount of water required for fracking is increasing. "Oil and natural gas fracking, on average, uses more than 28 times the water it did 15 years ago, gulping up to 9.6 million gallons of water per well." [ix] [x] More clean water contaminated means more

waste. Fracking was never a good idea, but, as the problems it helped create intensify, it has become such a bad idea that it must be stopped. The Delaware River Basin Commission must provide the protections the Basin deserves and vote in favor of a full ban on fracking, water extraction, and fracking waste processing.

Endnotes and Additional Resources

[i] [Climate change will accelerate extreme weather events in the coming years](https://www.pri.org/stories/2018-02-18/climate-change-will-accelerate-extreme-weather-events-coming-years)

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[ii] Billion-Dollar Weather and Climate Disasters: Table of Events (view full national list here) <https://www.ncdc.noaa.gov/billions/events/DE/1980-2017>

[iii] <https://www.pri.org/stories/2018-02-18/climate-change-will-accelerate-extreme-weather-events-coming-years>

[iv] [Methane Leaks Erase Climate Benefit Of Fracked Gas, Countless Studies Find](#)

Studies listed within:

- IEA's (2011) "Golden Age of Gas Scenario" Leads to More Than 6°F Warming and Out-of-Control Climate Change
- Study (2011): Switching From Coal to Gas Increases Warming for Decades, Has Minimal Benefit Even in 2100
- Study (2012): High Methane Emissions Measured Over Gas Field "May Offset Climate Benefits of Natural Gas"
- Study (2012): You Can't Slow Projected Warming With Gas, You Need 'Rapid and Massive Deployment' of Zero-Carbon Power
- Study (2012): Natural Gas Is A Bridge To Nowhere Absent A Carbon Price AND Strong Standards To Reduce Methane Leakage
- NOAA study (2013) Confirms High Methane Leakage Rate Up To 9% From Gas Fields, Gutting Climate Benefit
- Study (2013) Projects No Long-Term Climate Benefit From Shale Gas Revolution (based on work of 14 different modeling teams)
- Study (2013) Finds Methane Leakage From Gas Fields High Enough To Gut Climate Benefit
- Study (2013) Finds Methane Emissions From Natural Gas Production Far Higher Than EPA Estimates

- “A review [2014] of more than 200 earlier studies confirms that U.S. emissions of methane are considerably higher than official estimates. Leaks from the nation’s natural gas system are an important part of the problem.”
- Study (2014): Up To 1,000 Times More Methane Released At Gas Wells Than EPA Estimates
- Study (2014): Expanded Natural Gas Use Worsens Climate Change
- NASA (2014): “U.S. Methane ‘Hot Spot’ (over 3 times) Bigger than Expected”
- Satellite Observations (2014) Confirm Methane Leaks Wipe Out Any Climate Benefit Of Fracking
- 10 Studies (2015) find methane leakage from major fracking region much higher than EPA estimates

<https://thinkprogress.org/methane-leaks-erase-climate-benefit-of-fracked-gas-countless-studies-find-8b060b2b395d/>

[v] [COP23 Press Event: Tuesday, 14 Nov, 2017, 16:00. Theatre of BULA Zone 3, Bonn, Germany "Is the global spike in methane emissions caused by the natural gas industry or animal agriculture? Reconciling the conflicting views."](http://www.eeb.cornell.edu/howarth/publications/COP23_Methane_Discussion_Document.pdf)
[http://www.eeb.cornell.edu/howarth/publications/COP23 Methane Discussion Document.pdf](http://www.eeb.cornell.edu/howarth/publications/COP23_Methane_Discussion_Document.pdf)

[vi] The Northeast Is the Fastest-Warming Region in the Lower 48
<https://www.nrdc.org/stories/northeast-fastest-warming-region-lower-48>

[vii] Consequences of Global Warming of 1.5 °C and 2 °C for Regional Temperature and Precipitation Changes in the Contiguous United States
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0168697>

[viii] The Changing Northeast Climate: Our Choices, Our Legacy
https://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/The-Changing-Northeast-Climate.pdf

[ix] [Study: Water Use Skyrockets as Fracking Expands](http://www.climatecentral.org/news/fracking-water-use-skyrockets-19177)
<http://www.climatecentral.org/news/fracking-water-use-skyrockets-19177>

[x] [Hydraulic fracturing water use variability in the United States and potential environmental implications](http://onlinelibrary.wiley.com/doi/10.1002/2015WR017278/full)
<http://onlinelibrary.wiley.com/doi/10.1002/2015WR017278/full>