Data Submitted (UTC 11): 9/3/2018 4:00:00 AM First name: Heather Last name: Cantino Organization: Title: Comments: Packet #35: Hays and Shonkoff, 2016. Please acknowledge receipt.

Once again I am forwarding this extremely important research review, which you have clearly not taken seriously in your repeated decisions to give consent to BLM to conduct frack lease sales of federal minerals. Your new Plan will clearly have to evaluate all significant impacts of fracking on public health, water and air quality (which Marietta College will clearly not provide unbiased information on!!!) in an EIS based on comprehensive and up-to-date science, not limited to whatever studies are cherry-picked by representatives of the oil and gas industry such as Robert Chase and Tina Thomas. This must include the cumulative impacts of fracking Wayne minerals and all concomitant minerals that are fracked due to the larger swaths of minerals made accessible and attractive to the industry by Wayne leasing.

Toward an Understanding of the Environmental and Public Health Impacts of Unconventional Natural Gas Development: A Categorical Assessment of the Peer-Reviewed Scientific Literature, 2009-2015

- \* Jake Hays,
- \* Seth B. C. Shonkoff
- \* Published: April 20, 2016
- \* http://dx.doi.org/10.1371/journal.pone.0154164
- \* http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0154164

## Abstract

The body of science evaluating the potential impacts of unconventional natural gas development (UNGD) has grown significantly in recent years, although many data gaps remain. Still, a broad empirical understanding of the impacts is beginning to emerge amidst a swell of research. The present categorical assessment provides an overview of the peer-reviewed scientific literature from 2009-2015 as it relates to the potential impacts of UNGD on public health, water quality, and air quality. We have categorized all available original research during this time period in an attempt to understand the weight and direction of the scientific literature. Our results indicate that at least 685 papers have been published in peer-reviewed scientific journals that are relevant to assessing the impacts of UNGD. 84% of public health studies contain findings that indicate public health hazards, elevated risks, or adverse health outcomes; 69% of water quality studies contain findings that indicate potential, positive association, or actual incidence of water contamination; and 87% of air quality studies contain findings that indicate elevated air pollutant emissions and/or atmospheric concentrations. This paper demonstrates that the weight of the findings in the scientific literature indicates hazards and elevated risks to human health as well as possible adverse health outcomes associated with UNGD. There are limitations to this type of assessment and it is only intended to provide a snapshot of the scientific knowledge based on the available literature. However, this work can be used to identify themes that lie in or across studies, to prioritize future research, and to provide an empirical foundation for policy decisions.

Sincerely,

Heather Cantino, Steering Committee Chair,

Athens County Fracking Action Network, acfanohio@gmail.com

on behalf of Athens County Fracking Action Network,

acfan.org, acfanohio@gmail.com

Buckeye Environmental Network (formerly Buckeye Forest Council), Roxanne Groff, board chair

Jean Andrews, Documentary Video Producer,"A Forest Returns: The Success Story of Ohio's Only National Forest as Told by Ora Anderson"

Concerned Citizens of New Concord Muskingum County, OH 43762

Meghan Wynne, Organizer

----- Forwarded message ------

From: Heather Cantino

Date: Wed, Dec 7, 2016 at 4:59 PM

Subject: New information. Please acknowledge receipt.

To: Kathleen Atkinson

Please consider this new information before making the irrevocable commitment of resources that leasing is and that USFS can prevent by withdrawal of consent and of the parcels in the Wayne slated for Dec. 13 lease sale.

The following was obviously not considered in the most recent USFS NEPA-based forest-wide report, the 2006 Wayne Forest Plan. It is therefore new information that is obviously relevant to your decision on opening the Wayne to fracking, which has never been evaluated for the Wayne using up-to-date science as required by NEPA.

Please acknowledge receipt.

----- Forwarded message ------

From: Heather Cantino

Date: Tue, May 31, 2016 at 2:26 PM

Subject: re DOI-BLM-Eastern States-0030-2016-0002-EA H Cantino comments addendum

To: blm\_es\_comments@blm.gov, "Wadzinski, Kurt", "Scardina, Anthony -FS"

Please add the following reference to my comments regarding DOI-BLM-Eastern States-0030-2016-0002-EA. This peer-reviewed research analysis must clearly be assessed by both the BLM and the U.S. Forest Service under a NEPA-based process before the FS considers further giving consent to the BLM for fracking leases, since the 2006 Wayne Forest Plan did not and could not consider this information in its discussion of oil and gas leasing impacts, which did not consider any potential impacts of fracking of the forest, and since no NEPA-based

environmental analysis has subsequently been done that does consider this new information.

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Please acknowledge receipt.

Heather Cantino