

**Tioga County Partnership for Community Health: Building a Better
Community Survey
Qualitative Report for “Environment” Responses**

Completed by Nicolle Mayo, Ph.D.

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This report is best understood in conjunction with the original Building a Better Community Survey and quantitative analysis prepared by Eric Larson, All Luloff, and Seth Tanner of AEL Associates, the other qualitative reports prepared by Dr. Nicolle Mayo, as well as the final “Environment” report prepared by Dr. Karri Verno.

Tioga County Partnership for Community Health: Building a Better Community Survey

Qualitative Responses Regarding “Environment”

In conjunction with the *Building a Better Community* survey quantitative results, over 180 open-ended participant responses pertaining to environmental, water and waste concerns were analyzed and coded according to qualitative inquiry. Qualitative analysis is a method used to describe, test relationships, or examine cause and effect relationships found in collected data. In this case, qualitative methods were used to identify major patterns and themes that emerged from these participant’s open-ended responses. Respondents identified a variety of environmental gaps of great concern. Based on the comments, categories emerged related to participant’s community resource needs. These specific categories were separated into general gas impact concerns, pollution and its related effects, wildlife concerns, environmental regulations, ethics, and education, forest fragmentation and view sheds, and miscellaneous environmental concerns, which did not fall into any specific category of significant concern by the majority of those who responded to environmental issues. From the emerging categories, most of the concerns about the environment were directly related to the fracking industry. As such, each category differentiates specific viewpoints and suggestions addressing the particular environmental issue affected by the gas industry. The following sections outline the resulting data analysis from the emerging categories. The corresponding section percentages reported refer to the percent of those who made comments in that particular category. The lowercase “n” represents that actual raw number of people who responded.

Gas Impacts

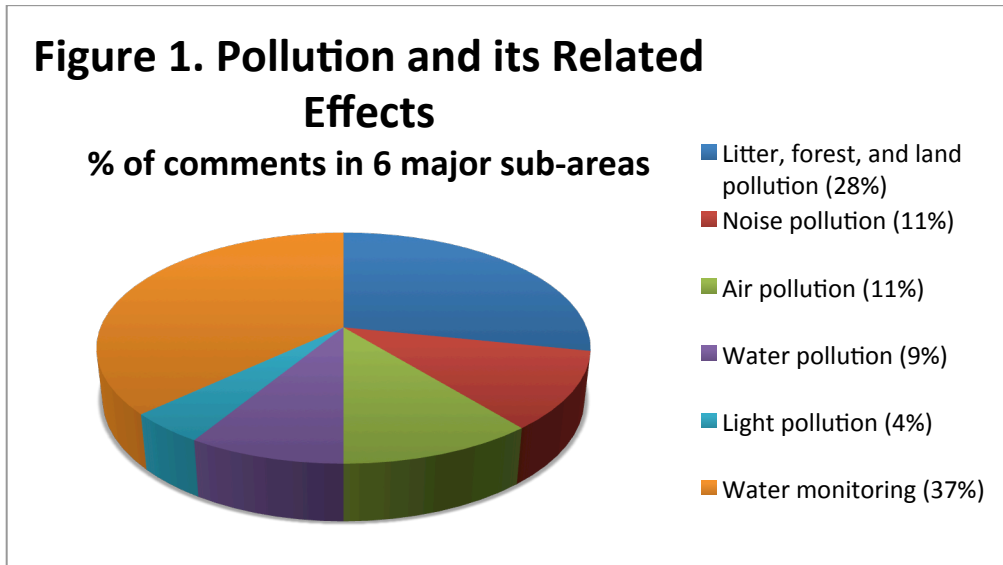
Nearly 41% (n=77) of respondents were concerned about the gas impacts on the general environment based on the hydraulic fracking and gas industry truck traffic. Respondents expressed significant concerns regarding environmental contamination of fracking operations, wildlife, and its proximity to family housing. Some participants reported a lack of knowledge around the "long-term ramifications of fracking" on the community. Other repercussions of gas drilling were cited, including "long-term health effects", "pipeline safety", "seismicity", and "lack of accountability and transparency" from the fracking companies. No graph is presented due to the variety of generalized comments made about gas impacts.

Pollution and its Related Effects

Up to 24% (n=46) of environmental concerns centered on pollution (See Figure 1). Specific attention was directed to litter, forest and land pollution, noise pollution, air pollution, water pollution, and light pollution. Over 52% (n=13) of these comments addressed problems of litter, forest, and land pollution. Respondents cited examples of "fertilizer misuse", "the widespread use of pesticides/herbicides/fungicides by local farmers", "Round Up", "open frack-water storage ponds", "trash causes harm to wildlife", and "discarding of cigarette buds from smokers". Almost 20% (n=5) of respondents in this category identified noise pollution as a problem related to the noise from gas trucks, fracking, and "route 15". Another 20% (n=5) directed complaints toward air pollution based on gas drilling, "atmospheric temperature changes due to the addition of "warmed air" from fracking sites and facilities", "air pollution from electrical generation and fossil fuels", "air pollution from transfer stations", and smokers. 9% (n=4) of comments

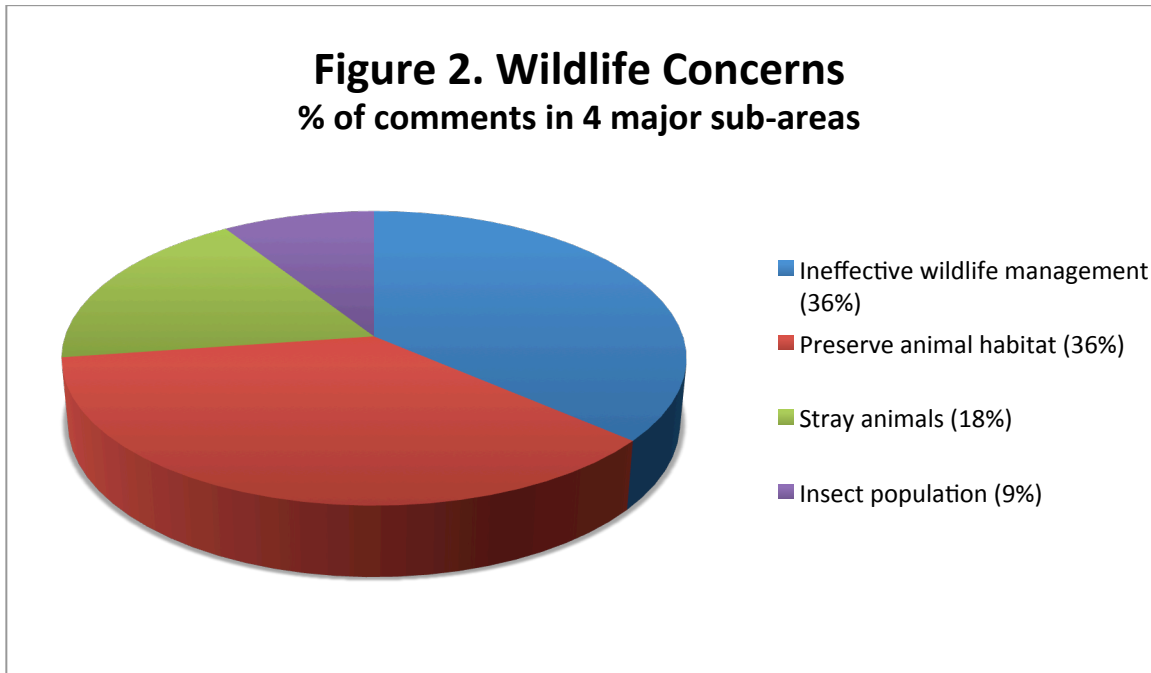
addressed water pollution in rivers, such as waste from landfills, "agricultural run-off", and fears "that more water table pollution will drive property values down". Only 4% (n=2) of comments reported light pollution, with "darker skies" as the only specified concern.

Water Quality, Flooding, and Misuse. For those concerned with pollution, another related detriment concerned water quality. Almost 8% (n=17) commented on the importance of monitoring water quality based on the negative impacts of pollution from the hydraulic fracking. Respondents expressed concern for safety and accessibility of clean water. Tioga River, specifically, was mentioned as a source that is frequently impacted by fracking and needing significant remediation, not only related to accessible clean water, but also in regards to water flow and the increased risk of flooding. Streams were also cited as sources of frequent flooding, but based on the lack of debris cleanup. For example, one participant responded, "Log jams and such should be removed so spring rains and winter melts don't turn into so many flooded areas". Another concern considered groundwater misuse, for industrial or fracking purposes, and the need for more appropriate regulation. A participant noted that, "both availability and development for economic development and exporting of large quantities of groundwater for industrial uses, such as fracking" does not seem to be a sufficient way of utilizing the natural resources available.



Wildlife

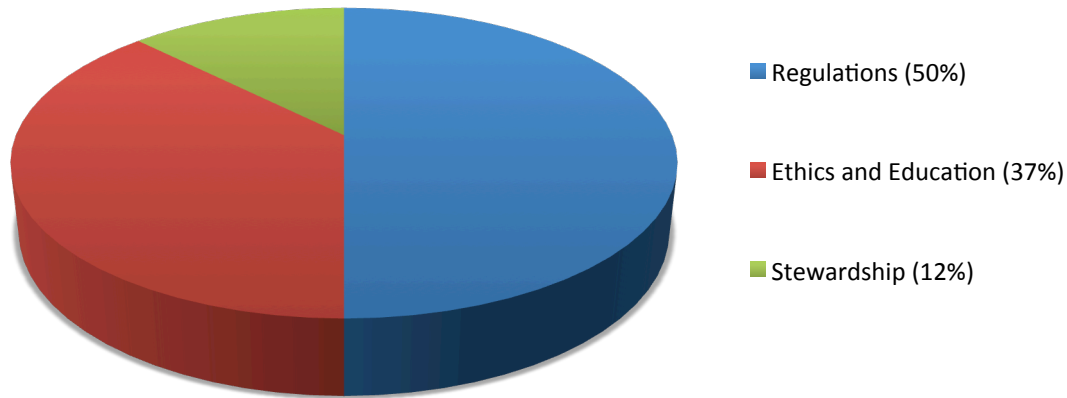
Over 5% (n=11) of participants expressed worry over the wildlife population (See Figure 2). Participants discussed concerns of ineffective "wildlife management", including the loss of animal and fish habitats (n=4). A couple of respondents focused on the need to preserve wildlife, especially game animals that are seemingly decreasing due to negative gas industry exploration (n=4). One comment, in particular, noted "bee and insect (tick) populations" without further specification as to whether this referred to colony collapse and/ or insects moving into new habitats. Lastly, a couple of comments highlighted the "lack of facilities available for taking neglected or unwanted pets" and how "too many pets were running loose and people not cleaning up after them" (n=2).



Environmental Regulations, Ethics, and Education

Over 4% (n=8) of respondents discussed regulatory issues, improving environmental ethics, and education (See Figure 3). With regard to regulations, reports centered on “too many environmental regulations” over-taking local resident’s ability to take care of their own property (n=4). Fewer regulations were requested. Others suggested emphasizing environmental ethics by “respecting the environment, incorporating more “awareness” and accessible “factual information” to the public sector (n=3). “Educating local residents about the values of Pennsylvania’s public and rural lands” also indicated a need to continue the legacy of local stewardship (n=1).

Figure 3. Environmental Regulations, Ethics, Education, and Stewardship
% of comments in 3 major sub-areas



Forest Fragmentation and View Sheds

Over 4% (n=8) of participants indicated concerns around deforestation and wildlife fragmentation based on forest clearings, or view sheds, due to gas industry construction. Another concern was related to "wildfires" in the area and its impact on the surrounding environmental stature. Again, due to few respondents commenting in this area, no graphic representation will be presented.

Miscellaneous Environmental Concerns

Participant concerns related to other environmental issues were raised, however, sparse in comparison to the earlier mentioned categories. Of which, climate change was a notable concern related to the "chemtrails in the sky". Residual waste and resource extraction, specifically the "Airport Extension Project" and "soil being dumped at Johnston Airport that contains harmful pollutants that will ruin the Pine Creek Valley" suggest that residents are aware of and worried about the surrounding environmental impact of

industrial waste. This was further supported by a comment regarding "the indiscriminate use of the natural environment for the aggrandizement of individual companies and/or individuals."

Acid Mining Pollution (AMD) was raised in relation to the problems associated with "mine drainage" influenced by "the gas well pads and additional pipelines, which also cut down a lot of trees affecting the run-off". Others speculated about the continued funding for AMD based on the "completion of acid mine pollution program for the Tioga River".

Very few respondents commented on current infrastructure modifications, not only highlighting "the expansion of infrastructure and its impact on the public areas. When you choose to live in or visit Tioga County you need accept that there are some things you will do without, this includes easy access to many areas", but also the need to "upgrade roadways" based on "poor maintenance" and "poor roadway drainage causing washouts/floods". This continues to cause concerns for erosion and sedimentation, or "mud on the highways". All in all, maintenance follow-through is deemed lacking and needing significant change in order to reduce overall costs and promote safety.

Lastly, others identified invasive species impacts, raising the issue with the "Emerald Ash Borer infestation", and disease vectors, citing concern for the lack of "rabies control" where animals are being dumped. Comments focus on the lack of regulations around insect and animal control, which adversely affect the surrounding natural resources (e.g. killing trees) and community safety.

Conclusion

Results from these qualitative responses should be considered along with the environmental quantitative survey data, which incorporates more of participant's

perspectives on the environment. Because fewer respondents provided feedback in this open-ended section, these results cannot be fully generalized to the survey participants, or to Tioga County residents. This data, however, does provide important implications for environmental agencies to consider. Because most of the respondents commented on concerns related to natural gas impacts, initial steps should be taken to understand how local residents interpret and understand these operations.

Gas impacts are a significant cause of concern for many Tioga County residents, who specifically report issue with pollution, wildlife, environmental regulations and ethics, and forest fragmentation. Many comments cited in this report specifically indicate how some residents perceive environmental dangers. These perceptions may be based on direct or indirect exposure to environmental concerns through initial contact with environmental issues (e.g. poor water quality), information presented by local or national media, or other local opinion. As such, further education surrounding these environmental issues should be presented to local residents regularly, to clarify any misconceptions, as well as provide a means with which residents can also take proactive measures to protect the environment and their own safety.

Additional steps could also be addressed with the gas industry, principally responsible for the aversive environmental changes as identified by local residents. Precautions should be taken, however, with discussing policies and procedures outside of local government domain and expertise related to gas industry organizational practices. Areas of discussion, though, could focus on the continued cognizance of the local residents on wildlife, and environmental safety and stewardship. Consistent collaboration between the county government and the gas industry is preferable, however, initiating an ongoing

partnership between local and county governments of Tioga County may be more feasible in terms of providing some resolution and further accountability on this issue.