



**Position Paper on the Impacts of Hydraulic Fracturing to Birds and Bird Habitat**  
**(Adopted by the Board of Directors March 1, 2014)**

Hydraulic fracturing is a process in which oil and natural gas are extracted from shale and other bedrock layers deep underground using explosives, large amounts of water, chemicals, and sand. Well boreholes are drilled vertically as deep as 12,000 feet. The hole is then drilled horizontally for up to a mile or more into a geologic formation that contains natural gas or oil. The well bore is sealed with cement casing and perforated using explosives. Additional explosives are then used to fracture the bedrock formation. Following this procedure, up to 6 million gallons of fluid comprised of water, surfactants, acids, and a variety of other chemicals are pumped into the bore. Along with this fluid, large amounts of sand or other solid particles, called propping agents, are injected into the well bore to extend the cracks and prop them open, thereby releasing large amounts of recoverable methane or oil. Extreme pressures during injection force the oil or gas up through the well bore, where it is captured and transported.

The process is highly controversial, with many potential environmental impacts that have not been fully assessed. Concerns over fracking procedures leading to the contamination of groundwater aquifers and drinking water supplies stem from several cases of alleged contamination with methane, metals such as barium and arsenic, and some chemicals used in fracking fluids (e.g. hydrocarbons) in Pennsylvania, Wyoming, Colorado, and other states. In addition, there are concerns about localized air pollution such as ground level ozone and other noxious gases, with numerous reports of health effects.

Less attention has been given to ecological impacts to birds, wildlife, or their habitats. Massive oil and gas infrastructure must be developed in order to accommodate intensive hydraulic fracturing activity. Individual well pads, which can number in the hundreds or thousands, are often located in fields, forests, or in or adjacent to wetlands. Wastewater containing many different chemicals, which results when the fracking fluid is ejected from the well under pressure, is often stored in holding ponds, where birds often congregate. Bird mortality at these sites has been documented (Ramirez 2010). New roads must be constructed to access the pads, which are most often located in remote rural areas. In addition, pipelines and other energy infrastructure must be built to transport the new fuel resources, necessitating the clearing of expansive rights-of-way. The footprint of these industrial features on the landscape is cumulative. Although each feature may disturb only a few acres individually, thousands of such wells and storage ponds are scattered across the landscape of the oil- and gas-fields.

**Potential Impacts to Birds and Bird Habitat:**

- The most obvious and well-documented effect is direct mortality of birds from exposure to contaminated water at wastewater storage facilities (Ramirez 2009, Trail 2006).
- Oil and gas wells are often illuminated at night, attracting insects and birds, increasing the risks of bird collisions with drilling infrastructure.

- The construction of roads, drill pads, pipelines, and wastewater ponds has a direct impact on the land surface, altering bird and wildlife habitat and changing the rural character of the landscape (Drohan et al 2012).
- The clearing of thousands of acres of forest for drilling infrastructure is leading to reduced and fragmented habitats and other potentially life-threatening impacts for birds and other wildlife (Drohan et al 2012).
- Increased fragmentation and vehicular traffic can increase the spread of invasive species, further degrading surrounding habitat.

### **Potential Mitigation Policies**

- The Federal Fracturing Responsibility and Awareness of Chemicals Act (H.R. 1084, S 587, 112<sup>th</sup>) would eliminate the so-called “Halliburton Loophole” and put regulation of hydraulic fracturing under the protections of the Safe Drinking Water and Clean Water Acts and would require companies to disclose chemicals used in hydraulic fracturing.
- The state wildlife agencies and/or the U.S. Fish and Wildlife Service could undertake a comprehensive assessment to address the impacts to birds, wildlife and habitat.
- The state of Maryland has issued an executive order barring the Maryland Dept. of Environment (MDE) from approving drilling permits pending the completion of a scientific study on the safety of hydraulic fracturing.

### **MOS’s Position**

The development of new technologies with high profit margins coupled with the increased costs of power generation from other fossil fuels like coal due to changes in air emission regulations has led to a frenzy of activity in natural gas and unconventional oil drilling in many parts of the country, including the central Appalachians. As a result, assessing the potential environmental risks has not been a priority for the industry. The MOS recommends precaution in pursuing hydraulic fracturing activities until the risks to birds, wildlife, and their habitat are much better understood. These impacts must be analyzed both individually and cumulatively on the landscape. Maryland is in an excellent position to analyze these impacts before any hydraulic fracturing is permitted.

### **MOS’s Recommendations:**

- The Federal Fracturing Responsibility and Awareness of Chemicals Act (H.R. 1084, S 587, 112<sup>th</sup>), or equivalent, should be passed.
- Maryland state government should assume a greater role in evaluating the potential risks to human health and the environment from specific fracking actions and proposals.
- Each proposal should be evaluated for environmental impacts and include habitat alterations in areas where valued species exist.
- Expand the scope of Maryland fracking study to include impacts to wildlife and wildlife habitat as well as air quality impacts.
- Keep the Maryland fracking permit moratorium in place until impacts on natural resources to include groundwater, wildlife and environment are assessed; MOS supports state legislation to extend the moratorium until such studies are completed.

### **References**

Drohan, P. J., M. Brittingham, J. Bishop, and K. Yoder. 2012. Early Trends in Landcover Change and Forest Fragmentation Due to Shale-Gas Development in Pennsylvania: a

Potential Outcome for the Northcentral Appalachians. *Environmental Management* 49:1061-1075.

Ramirez, Pedro Jr. 2010. Bird Mortality in Oil Field Wastewater Disposal Facilities. *Environmental Management* 46:820-826 DOI 10.1007/s00267-010-9557-4

Trail, P. 2006. Avian Mortality at Oil Pits in the United States: a Review of the Problem and Efforts for its Solution. *Environmental Management* 38:352-544.