



MARCELLUS SHALE GAS DRILLING IMPACTS ON HUNTING, FISHING AND TRAPPING

Gas drilling in the Marcellus Shale region is occurring or is being planned at a very fast pace. Over time, thousands of wells are expected to be drilled in New York, Pennsylvania, West Virginia, Maryland, Virginia and Ohio. Marcellus Shale gas deposits are accessed using a combination of horizontal drilling and hydraulic fracturing. Hydraulic fracturing (also known as hydrofracking) is a process used to create fractures that extend from the well bore into a tight rock formation, allowing gas to travel readily from the rock pores to the production well. A mixture of water, sand and chemicals is pumped in high volumes under high pressure into the shale to create the fractures.

In the heart of the Marcellus Shale region, sportsmen and women, and conservation groups are working together to identify and propose solutions to mitigate the impacts from gas drilling and hydraulic fracturing on hunting, fishing and trapping experiences. This fact sheet describes some of the impacts that are occurring or are anticipated from drilling in the Marcellus Shale.

RESOURCES AT RISK

WATER

Significant water withdrawals needed for the hydraulic fracturing process. Each well uses between three to nine million gallons of water for the hydraulic fracturing process. Water withdrawals from surface and ground water sources may decrease stream flows, threatening the survival of fish and other aquatic life.

Treatment and disposal of wastewater. Ten to forty percent of water, ranging from 300,000 to 3.6 million gallons, that is injected into each well returns to the surface as wastewater. This fluid contains chemicals, heavy metals, radioactive materials and salt water – all of which can negatively impact coldwater fisheries. Waste fluids from drilling are often taken to local wastewater treatment plants. However, most plants are designed to treat biological waste and are not equipped to treat drilling waste. As a result, local wastewater treatment does not effectively remove salts, metals and many other contaminants before this water is discharged back into our rivers. To date, facilities do not exist to adequately treat the large volumes of wastewater that will be produced through the hydraulic fracturing process. While the gas industry is pursuing technological advances to recycle and re-use drilling wastewater, progress has been slow. Nevertheless, state agencies continue to issue permits for drilling, thereby increasing the volume of wastewater that will need to be treated in the short and long-term.

Spills, leaks and illegal discharges. Spills and leaks of hydraulic fracturing waste fluids on drilling sites or during transportation are a concern, as well as illegal discharges into streams, ponds and surrounding woods.

Stormwater runoff and sedimentation. Construction of well pads and access roads and significant truck traffic, increases stormwater runoff from cleared areas. In addition, sedimentation caused by silt and sand runoff from poorly constructed roads can dramatically alter trout spawning success by burying eggs and smothering the aquatic insects on which the trout feed.



Photo courtesy of PA TU

Storage of wastewater. Hydraulic fracturing wastewater contains high salinity levels and other chemicals. It is often stored in open ponds before being transported for disposal or re-use on other well pads. Leaky containment pond liners can allow this wastewater to leach and migrate into ground and surface waters, contaminating nearby streams and drinking water wells.

AIR

Air quality. Truck traffic and diesel equipment used in the drilling operations emit particulate matter, volatile organic compounds and other dangerous air pollutants. This industrial activity, in areas that are primarily rural, forested and open space, is a new source of air pollution that can adversely affect local residents, hunters, anglers and trappers.

HOW CAN WE MANAGE THE UNKNOWN?

The Energy Policy Act of 2005 exempted the gas industry from complying with the **Safe Drinking Water Act**; as well as the sediment and erosion control provisions of the **Clean Water Act**. No federal laws currently require companies to disclose the chemicals used in the hydraulic fracturing process, making it difficult to know what toxins are being injected into the ground or released when spills do occur.

FORESTS & WILDLIFE IMPACTS

Fragmented forests. Fragmentation of forests and other remote wild areas can result from construction of access roads, drill pads, storage areas, feeder pipelines, compressor stations and other infrastructure necessary for the gas drilling process. Breaking up the landscape can affect wildlife migration routes and impact the health of various species, particularly those with large home ranges, that require large blocks of contiguous forest for survival. Cutting oak and beech trees for well pads, wastewater ponds and roads reduces critical food sources for game and creates openings for invasive plants to take over native habitat.

Soil compaction and truck traffic. New York agencies estimate that 1,340 truckloads of hydraulic fracturing wastewater will be removed from each well site, resulting in significant increases in heavy truck traffic. Many access roads and areas around well pads are overused and the soil is compacted, making it very difficult to successfully re-plant and re-forest. Smaller access roads and bridges that cross streams may not have the capacity to safely accommodate significant heavy truck traffic.



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Wildlife attracted to open soil and wastewater. Deer and other grazing animals may be attracted to the open soil at newly constructed sites, which can contain residual chemicals from the gas drilling process. If sites are not monitored 24 hours a day and/or lack sufficient fencing, deer and other wildlife may ingest soils that contain toxins from the drilling process. Additionally, deer and other wildlife that are not deterred from daytime industrial activity may be attracted to the saline waters in containment ponds. Little prevents these species from drinking this water or water from contaminated streams. As an example, in Tioga County, Pennsylvania, a liner on a drilling wastewater holding pond deteriorated, causing leakage and forcing the Pennsylvania State Agricultural Department to quarantine 28 cattle to prevent human consumption of the contaminated beef. It will be much more difficult for state wildlife managers, hunters and trappers to know if deer or other game have consumed contaminated wastewater at drilling sites.

SPORTSMEN INTERESTS AT RISK

EFFECT ON OUTDOOR EXPERIENCE

Excessive noise. Construction of well pads and access roads, using earth-moving equipment, along with seismic surveys, drilling operations and increased traffic can cause excessive noise in areas previously undisturbed. Excessive noise and activity drive away game and make it difficult for hunters to hear and track wildlife. Moreover, encountering heavy industrial development in the woods undermines the experience that so many hunters value.

ACCESS

Public lands. Lands that may have been available to sportsmen and women in the past may now be posted by a gas company, limiting access to areas where many have traditionally hunted and fished. Approximately one-third, or 700,000 acres of the 2.1 million acres, of Pennsylvania's state forests have been leased for drilling. In New York, about 12 percent of state forest acreage has been leased for oil and gas development. In August 2010, West Virginia's Division of Natural Resources announced that it is considering leasing part of its 42,577 acres of oil and gas deposits beneath eight of its state forests. Access will be restricted on public lands where there are active drilling operations. Hunters, anglers and trappers may find new or modified roads in many areas and may encounter large volumes of truck traffic in areas where active drilling is occurring. While Pennsylvania has vowed to limit heavy-truck traffic associated with Marcellus activities in many areas during short hunting, fishing or trapping seasons or on already crowded opening days, other states within the Marcellus Shale have not implemented such protection policies.

Private lands. Sportsmen may be impacted by similar limitations on access if gas drilling development or exploration is occurring during hunting or trapping seasons on private lands that have been leased. Members of hunting clubs, where land has been leased for gas drilling, could experience related access restrictions.

THIS FACT SHEET WAS COMPILED BY THE SPORTSMEN ALLIANCE FOR MARCELLUS CONSERVATION

A coalition of sportsmen and women conservation organizations representing more than 265,000 hunters, anglers, trappers and outdoorspersons from across the Marcellus Shale region.

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