

## Impacts of Gas Drilling on Forested Land

Timber Loss, Erosion, Advancement of Invasive Species Among Concerns

by Sue Smith-Heavenrich

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Since August, gas companies have applied for only 20 permits in Chemung and Tioga counties. But with an estimated 363 trillion cubic feet of recoverable natural gas trapped in the Marcellus shale, it is unlikely the gas companies will stay away for long.

“Pennsylvania has seen about 2500 wells a year go in,” said Brett Chedzoy, a regional extension forester with Cornell Cooperative Extension of Schuylers County. Chedzoy is concerned that a sudden increase in drilling could have unexpected – and unintended – impacts on the region’s forests. He shared his concerns in a telephone interview.

Without proper lease protections, forest owners face potential losses in terms of timber, wildlife habitat and other property uses. Chedzoy believes that local consulting foresters need to step up and play more of a role in helping forest owners protect the value of their land.

“As with any landowner, forest owners need to begin with a sound lease,” Chedzoy explained. “Protecting your interests will be much easier if the lease terms are crafted to avoid potential negative impacts.” He suggests that forest owners include terms specific to forest land in a lease addendum. (See sidebar)

### **Timber Reimbursement**

Gas companies who wish to use the land for a drilling pad or as a right-of-way for a pipeline ought to pay fair value for all timber removed from the land. Even young successional forests have value, Chedzoy pointed out. An 8-inch tree may have current value only as firewood, but in 50 years it would have significant value as a saw log.

“The landowner should have timber appraised by a consulting forester,” Chedzoy said, clarifying that the forester should be hired by the landowner. The cost of the appraisal should be borne by the drilling company.

“Make sure you specify that the trees be cut by a logging crew and piled in an accessible location,” Chedzoy said. It doesn’t matter whether it is saw timber or firewood, landowners need to make sure that the logs remain free of stones and debris that would make them unacceptable to a mill – or to someone using a chainsaw.

“I don’t know any forest owner who has successfully sold cleared trees who did not use a forester to negotiate with the company,” Chedzoy said. Just as important as insuring the quality of the saw timber is specifying where the logs are stored. Too often Chedzoy has seen piles of timber left in places that are inaccessible to the landowner.

## **Remediation**

As with agricultural land, forest land requires remediation once drill pad and pipeline work is finished. If the area will be brush-hogged, then you need to make sure that the rocks and stones are picked out. As with farmland, the forest owner needs to consider topsoil conservation, the restoration of surface and sub-surface drainages, and erosion control structures.

Usually the companies re-seed the area with a conservation mix, Chedzoy explained. But a forest owner may not want the standard conservation mix.

## **Environmental Impacts**

Chedzoy is convinced that an increase in the number of wells, and the correlating increase in pipelines, will have a significant impact on the environment and the landscape. Right-of-ways are the number-one entry point for invasive species, he pointed out. Once you take out the trees, you create an “edge” – an opening preferred by such invasive species as European buckthorn, multiflora rose, privet, several Asian species of honeysuckle, burning bush, Japanese barberry, autumn olive, swallowwort, Oriental bittersweet, and garlic mustard.

These are aggressive plants that one could expect to find in close proximity to un-mowed portions of right-of-ways, Chedzoy explained. “All are quite shade-tolerant and capable of proliferating under forest canopies with minimal side-lighting, such as sunlight entering from a break in the canopy.”

The problem with invasive species is that they interfere with native plants and degrade the wildlife habitat. Invasive species displace native trees, shrubs and herbaceous plants that provide significantly higher browse, forage, mast and nesting value for birds and animals.

“A common example is buckthorn,” Chedzoy said. “It displaces other berry-producing shrubs such as Viburnums, Amelanchier (service berry), raspberries and blackberries. Unfortunately, buckthorn fruit has a cathartic effect on wildlife that causes them to vomit the fruit without deriving much nutritional value.” While this helps the buckthorn disperse its seed, it offers little benefit for the wildlife.

Invasive plants also affect the quality of the forest. “By displacing the more desirable plants, they may create a barrier in the understory that hampers normal understory development,” Chedzoy said. Invasive plants may out-compete seedlings and saplings, changing the character of the woods. Or, like garlic mustard, they may produce chemicals that inhibit seed germination.

Another issue is forest fragmentation. Right-of-ways – even the narrower ones for gathering pipelines – divide the forest into smaller pieces, discriminating against core forest species like the scarlet tanagers. While some species, notably deer and turkey, benefit from the edges core forest species are exposed to more predation from foxes and

coyotes. They are also faced with competition from new species moving into the “edge” habitat, species such as blue jays.

### **(PHOTO)**

#### **Nuisance issues**

A pipeline right-of-way may create a variety of other problems for forest owners as well. Landowners needing access to their forests for timber harvest will want to make sure there are permanent crossings for skidders and other heavy equipment. Otherwise forest owners wanting to sell a few trees may find themselves required to provide a “timber bridge”.

Trespass liability has become an issue as well. “Many forest owners complain that the right-of-ways become conduits for ATV and snowmobile traffic,” Chedzoy noted.

*Brett Chedzoy will speak about the forest impacts of gas drilling on Monday, January 12 at Tioga Central High School. The program, hosted by Tioga County Landowners Group begins at 6:30pm.*

#### **SIDEBAR**

##### **Leasing Pointers for Forest Owners:**

- The loss of current and future timber should be appraised exclusively by your Forester.
- Cleared timber should be harvested by conventional logging methods and left neatly piled in designated areas if to be later sold or utilized. Otherwise, the timber should be chipped or removed from the site.
- If you are currently enrolled in the NYS 480-A Forest Tax Law, conversion penalties should be paid by lease holder. If you are contemplating enrollment in 480-A, will you still qualify if additional forest land is cleared?
- Outline penalties and provisions for non-compliance, such as failure to re-vegetate temporary worksites, damage to unmarked trees, delays in completion, erosion damage, and spills.
- Require a performance bond with your Forester as the final authority on compliance.
- Require the lease holder to construct at least one permanent crossing in a designated location if you expect to someday cross the pipeline with heavy equipment.
- Consider what can be done to minimize the impact on wildlife habitat.
- List measures to reduce the establishment of invasive plant species near disturbed areas, such as planting screens along cleared edges.

Source: Brett Chedzoy, CCE Schuyler County