PA Environment Digest

An Update On Environmental Issues In PA

Edited By: David E. Hess, Crisci Associates

Winner 2009 PAEE Business Partner Of The Year Award

Harrisburg, Pa **April 30, 2012**

Click On The Link Below To Print Entire Digest

http://goo.gl/VlrzG

Penn State Study Suggests Shale Gas Development Causing Rapid Landscape Change

As the Marcellus natural-gas play unfolds in Pennsylvania, several trends are becoming increasingly clear, according to researchers at Penn State.

First, most of the development is occurring on private land, and the greatest amount of development falls within the Susquehanna River basin. Second, a regional approach to siting drilling infrastructure is needed to help minimize development in core forest and productive agricultural lands and to decrease the potential risk to waterways.

Patrick Drohan, assistant professor of pedology in the College of Agricultural Sciences, was lead investigator on a study that examined the early effects of Marcellus gas development on landcover change and forest fragmentation in the Keystone State.

Drohan estimates that slightly more than half of the well pads in Pennsylvania occur on agricultural land; most of the rest are on forestland, but many of those are on core forest that is privately owned.

The loss of agricultural land to shale-gas development presents some concern because, in some areas, drilling is now competing with food production for space on the landscape, the study states.

"Our results suggest," said Drohan, "that shale-gas development could substantially alter Pennsylvania's landscape. The development of new roads to support drilling could affect forest ecosystem integrity via increased fragmentation."

The fragmentation of forestland, especially northern core forest, places headwater streams and larger downstream waterways at risk of pollution, the study suggests. Based on the intensity of development in the Susquehanna River basin, future expansion of shale-gas production in this basin could become a significant land- and water-management challenge for Chesapeake Bay water quality and ecosystem services.

The concentration of existing core forest in the northern part of the state -- and the focus of drilling in this area, largely on private land -- led the researchers to conclude that remaining areas of public land are key refuges for the protection of wildlife, ecosystems and associated ecosystem services.

"These areas should receive further protection," Drohan said. "An organized effort across government and private entities may be a way to manage development."

Coauthors of the study, which was published in the March 25 issue of the journal Environmental Management, were Margaret Brittingham, professor of wildlife resources; Joseph Bishop, research associate in geography; and Kevin Yoder, former field assistant in the School of Forest Resources.

The research was sponsored by the Heinz Endowments, Marcellus Center for Outreach and Research and the USDA-NRCS Soil Survey program.

A copy of the study is available online. Professor Drohan can be contacted by sending email to: pjd7@psu.edu.