

'Public ecology' could help resolve mountaintop mining issues

December 10 2012

Mountaintop mining is the practice of using huge machines to remove layers of soil and rock to reach thin seams of coal.

It is an efficient way to reach the high-thermal value, low-impurity coal in the central Appalachian range, which accounts for one-fifth of the nation's coal, and it is a resource for American [energy independence](#).

But it has disadvantages—mountaintops are deposited into valleys, trees and habitats are destroyed, chemical drainage may pollute streams, and many find it ugly.

Taking conflicts into account—such as the benefits of steady jobs and tax revenue versus declining environments and resources—are essential to a deliberative discussion about [mountaintop mining](#), according to John Craynon, project director of the Appalachian Research Initiative for Environmental Science with the Virginia Center for Coal and Energy Research at Virginia Tech.

"Take advantage of the duality of stakeholders, such as a member of a mining-impacted community who is an employee of a mining operation," Craynon said. "The perspective gained via one role might inform decisions made in another."

Virginia Tech researchers writing for an upcoming issue of *Resources Policy* say federal and state government and mining industry efforts to increase the community's voice in decision-making have not succeeded

in incorporating stakeholders' values and concerns.

A public ecology approach can give the stakeholders—including members of the coal mining industry, federal and state agencies and courts, labor unions, environmental and community [advocacy groups](#), land holding companies, private citizens, and researchers—a new focus, according to co-authors Craynon; Emily Sarver, an assistant professor in the College of Engineering's Department of Mining and Minerals Engineering; and David P. Robertson, associate director of the College of Natural Resources and Environment's Center for Leadership in Global Sustainability in Virginia Tech's National Capital Region.

"To put such new ideas into practice, there is need for more than just research. We have to teach the next generation of engineers, scientists, and policy makers, and reach out to the stakeholders in this debate," Sarver said.

Public ecology is the nexus of science, engineering, public policy and interest, citizen views and values, market forces, and environmental protection statutes and regulations. Through open discussion, it ensures ecological systems continue to function while commerce continues.

The researchers say issues of environment and economy are valued differently based on proximity. Problems arise because environmental and social impacts of mining are largely local, but decision-making tends to be driven by state, federal, or even global energy goals and regulations.

Defining the public is important, the researchers say.

"The public includes the CEO and the machine operator, both of whom grew up locally and fished the streams and now support their families by working for the mining company," Craynon said. "People with complex

motivations have the best chance of succeeding in understanding and accommodating stakeholders' significant differences in values and interests."

The researchers' recommendations for action depend upon broad participation and transparency. But they are optimistic that attempts by some groups—including the U.S. coal industry—to increase public participation may signify a turn for the better.

"The recent decision by Patriot Coal to stop mountaintop mining may exemplify a shift in industry response," Robertson said.

But questions remain, the largest being whether interested stakeholders are willing to participate in deliberative processes, many of which require compromise in order to find a common and higher ground.

The U.S. may also need to fundamentally restructure regulatory programs in order to bring all the interested parties to the table with a meaningful role. Craynon, Sarver, and Robertson point to the Chesapeake Bay clean up as a model program where public ecology and broad participation has overcome significant controversy and overlapping regulatory programs.

"The resolution of complex issues such as mountaintop mining may require radical boldness to break through years of distrust and allow for the adoption of a more public ecology," the article concludes. "Through the cooperation of all parties, mountaintop coal mining may be modified so that better social, environmental and economic goals can be achieved and the interests of all affected parties can be adequately considered."

Provided by Virginia Tech

Citation: 'Public ecology' could help resolve mountaintop mining issues (2012, December 10)
retrieved 12 May 2024 from <https://phys.org/news/2012-12-ecology-mountaintop-issues.html>

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