Bloomberg BNA

Mountaintop Mine Reclamation Not Adequately Restoring Affected Streams, Study Finds

September 22, 2014

By Rachel Leven

Reclamation projects by mountaintop removal coal mining operations in southern Appalachia aren't fully restoring local waters, according to a new study by a university-based analysis group.

The Clean Water Act requires that permit holders replace "any lost or degraded natural resources or functions"; however, the act doesn't explain how to assess if those resources or functions have been adequately replaced.

Under current regulations and enforcement, affected waters may be restored physically, but are not being restored chemically or biologically, said the study, "Restoration as Mitigation: Analysis of Stream Mitigation for Coal Mining Impacts in Southern Appalachia," published in Environmental Science & Technology. Many of the waterways remain out of compliance with state or federal water quality requirements, the study, announced Sept. 18, said.

When streams aren't chemically or physically restored, it can mean a variety of consequences for aquatic life, such as reproductive failures in fish due to excessive levels of selenium.

The study highlights a significant discrepancy between federal reclamation regulations and the scientific standards for what needs to occur to restore streams, the study's authors, Margaret Palmer and Kelly Hondula of the National Socio-Environmental Synthesis Center, said. It also puts enforcement of the mitigation projects in the spotlight, since many waters didn't get restored to water quality requirements, the authors said.

"There is no evidence that mitigation is meeting the objectives of the [Clean Water Act] and looking forward there is no reason to believe this will change unless new mitigation requirements and scientifically rigorous assessments are put into place," the study said.

Mitigation Requirements

The study examined 434 stream mitigation projects linked to 117 permitted surface coal mining projects in Kentucky, Tennessee, Virginia and West Virginia. The authors examined publicly available monitoring reports, the study said.

Most projects—more than two-thirds—didn't include requirements to collect biological or chemical data at all, the study found. Even when data was collected, only eight projects, or less than 2 percent of all mitigation projects examined, were required to improve their biological data over time or to meet "unimpaired" state biological requirements, meaning identifying poor conditions wouldn't necessarily lead to improved approaches.

Only 100 of these projects were at least three years into their monitoring, "which allowed for evaluation of project outcomes." Most streams that had biotic or chemical data reported "were scored as biologically impaired according to state standards and reported levels of water quality parameters exceeding state and federal criteria," the study said.

"Overall the reports provide no evidence that stream mitigations being implemented for coal mining the Southern Appalachian states of Kentucky, Tennessee, Virginia and West Virginia are meeting the objectives of the [Clean Water Act] to replace lost or degraded natural resources and functions," the study found.

Latest Reclamation Requirements

Most of the mitigation projects evaluated were not subject to the requirements of the latest 2008 reclamation rule, the Compensatory Mitigation Rule for Clean Water Act dredge-and-fill projects, the study said. However, evaluating a sample of West Virginia mitigation projects that were subject to the 2008 rule indicates that restoration methods have not improved, the authors said.

Restoration methods proposed in these plans are the same as in those projects subject to pre-2008 rule requirements, meaning the outcomes are unlikely to change, the authors said in a Sept. 18 news release. The West Virginia sample of projects did include requirements for "unimpaired" West Virginia Stream Condition Index scores and state water quality standards compliance, the study said.

Thom Kay, Appalachian Voices' legislative associate in Washington, D.C., told Bloomberg BNA the study proves that regulation is failing "to truly mitigate" mountaintop mining's impacts on Appalachian stream health. Kay indicated frustration with the Obama administration's lack of progress in protecting the environment from mountaintop removal coal mining, despite promises to do so in 2009 (177 DEN A-9, 9/12/14).

"We will get this report under the noses of regulators failing to prevent widespread pollution," Kay told Bloomberg BNA in an emailed statement.

The U.S. Army Corps of Engineers told Bloomberg BNA it is reviewing the study and that the corps "welcomes constructive analysis and recommendations that may lead to improved mitigation efforts in Appalachia and elsewhere." The National Mining Association and the Environmental Protection Agency didn't respond to Bloomberg BNA's messages requesting comment.

The center is funded through a National Science Foundation grant to the University of Maryland, according to the news release.