

# USE OF RECENT AND HISTORICAL AERIAL PHOTOGRAPHY INTERPRETATION TECHNIQUES TO QUANTIFY POST-MINING REFORESTATION CHANGE AND ASSOCIATED CARBON SEQUESTRATION IN SOUTHWESTERN VIRGINIA<sup>1</sup>

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**Abstract:** The State of Virginia (VA), Division of Mined Land Reclamation (DMLR), and the Office of Surface Mining (OSM), used recent and historical aerial photography to classify reforestation change over time over a pilot study area in southwestern VA.

To quantify change in reforestation over time, recent aerial photography dated 2007, and aerial photography dated prior to passage of the Surface Mining Control and Reclamation Act (SMCRA) in 1977 were interpreted into forest type and percent cover categories. Geographic Information System (GIS) analysis was conducted to quantify change in post-mining forest type and percent cover.

The amount of carbon sequestered over this time period has been quantified along with predicted modeling of maximum loading on the site. Results of these efforts will be presented.

**Additional Key Words:** DMLR, OSM, QuickBird-2, classification, SMCRA, GIS

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