Title
Effectiveness of forest road best management practices to enhance and protect water quality in the Southern Appalachians

Permalink
https://escholarship.org/uc/item/6r4441wc

Authors
Riedel, Mark S.
Clinton, Barton D.
Vose, James M.

Publication Date
2003-08-24
EFFECTIVENESS OF FOREST ROAD BEST MANAGEMENT PRACTICES TO ENHANCE AND PROTECT WATER QUALITY IN THE SOUTHERN APPALACHIANS

Mark S. Riedel (Phone: 828-524-2128 x113, Email: mriedel@fs.fed.us), Research Hydrologist, Coweeta Hydrologic Laboratory, USDA Forest Service Southern Research Station, 3160 Coweeta Lab Road, Otto, NC 28734, Fax: 828-369-6768

Barton D. Clinton (Phone: 828.524.2128 x124, Email: bclinton@fs.fed.us), Ecologist, Coweeta Hydrologic Laboratory, USDA Forest Service Southern Research Station, 3160 Coweeta Lab Road, Otto, NC 28734, Fax: 828-369-6768

James M. Vose (Phone: 828-524-2128 x114, Email: jvose@fs.fed.us), Project Leader, Coweeta Hydrologic Laboratory, USDA Forest Service Southern Research Station, 3160 Coweeta Lab Road, Otto, NC 28734, Fax: 828-369-6768

Abstract
Sediment from gravel roads has degraded stream health in the southern Appalachians. National Forests initiated road reconstruction projects to reduce stream sedimentation. We monitored runoff water quality, before and after road reconstruction, from a wide variety of roads. Treatments included ditch obliteration, out-sloping, culvert removal, broad-based dips, and hay bales. Pre-treatment sediment yield generally increased with usage levels. Sediment yields following reconstruction were approximately one half of pretreatment levels. We monitored total suspended solids (TSS) and total petroleum hydrocarbons (TPH) from gravel and paved roads to quantify the effects of paving on water quality. While [TSS] tended to be lower on the paved road, they were not significantly lower than those of the maintained gravel roads. [TPH] from the two-year-old surface were just above detection limits (well below standards) at the road edge and not found downstream. TPH from the newly paved road adsorbed to sediments and did not move to the stream.

USDA Forest Service Large Scale Watershed Restoration Projects: http://www.fs.fed.us/largewatershedprojects/

Chattooga River Watershed Organization: http://www.chattoogariver.com/

Conasauga River Watershed Organization: http://www.conasaugariver.net/