

## Effect of harvesting on forest soil and water in an organic soil watershed

*Grace, J.M., and Skaggs, R.W.*

*Corresponding Author: J. McFero Grace, USDA Forest Service, Southern Research Station, Forest Operations Research, Phone: (334) 82*

Timber harvest operations are necessary and common in forest management to provide profitability and satisfy demands for timber products. Harvesting operations, as with most forest operations, have received much attention in regards to soil and water issues. Harvesting operations have been reported to affect soil physical properties and hydrological characteristics from drained forest watersheds. Increases in bulk density, forest outflow, nutrient concentrations, and suspended sediments can result from harvesting operations, particularly those in drained forest watersheds. Thus, it is important to assess the impact of harvest operations on soil and water (quantity and quality) on drained forest watersheds. This proposed presentation reports the influence of harvesting operations on a 23-ha hardwood forest located in Washington County near Plymouth, North Carolina. The study utilizes a nested design to evaluate soil property effects and a paired watershed approach to evaluate hydrology and water quality effects of harvesting. Harvesting increased bulk density and decreased saturated hydraulic conductivity based on this investigation. As a result of soil property changes and timber removal, daily outflow, peak flow, and water table depth were also significantly impacted by the harvesting operations. Mean daily outflow and peak flow increased greater than 30

percent on the harvested watershed. Water table depths observed from the harvested watershed were also greater than 30 percent (70 cm to 104 cm) closer to the surface on the harvested watershed in comparison to the control watershed.

# Oral Presentations for 2006 SWCS Annual Conference

## Grazing interaction with Wildlife in CRP grassland management

Klein, J.C

Corresponding author: John C. Klein,  
USDA-NRCS, Phone: (641)-322-3116,  
Email: John.Klein@ia.usda.gov

Wildlife has become a major factor in the selection and management of all current Conservation Reserve Program (CRP) contracts. The taxpayer is demanding a larger return for their CRP funding. They seem willing to collect that return in wildlife habitat development on private lands. Most CRP contract landowners are very fond of the program, and many would reenroll given applicable financial incentives. However, many balk at having to do considerable extra habitat development work unless there is a significant economic return. That return could possibly come from alternative and additional uses of CRP acres.

The Southern Iowa Forage and Livestock Committee and Iowa State University are currently cooperating on a study that seeks common ground in balancing the needs of wildlife and the needs of forage livestock. 2006 will be the second year of a study that looks at methods of partnering these two interests. Results of the first year of study and tentative results of year two will be addressed. USDA seeks to reduce federal expenditures, without a huge reduction of environmental benefits. Allowing grazing after the nesting season on warm season grass CRP acres can provide forage for grazing production. Timing is critical. This presentation will outline several options available for government policy makers that would continue to produce wildlife while opening CRP acres to limited grazing. This could preclude increased costs of the CRP contract for a multi-year extension.

## Conservation intensification and the conservation security program in Alabama

Bergtold, J.S., J.J. Molnar, and M.L. Tallant

Corresponding author: Jason S Bergtold, USDA-ARS, Phone: (334) 844-0864, Email: jbergtold@ars.usda.gov

The Conservation Security Program (CSP), the latest US conservation program introduced in 2004, provides an innovative mechanism for rewarding farmers for conservation efforts and environmental stewardship on their lands. The primary vehicle for achieving this aim is financial incentives in the form of enhancement payments. These payments are provided to farmers for conservation efforts above and beyond levels needed to qualify for the program (e.g. a cover crop in a conservation tillage cropping system). The effectiveness of these incentives and the CSP on farming in Alabama has not yet been analyzed. The program was initiated in Alabama in the Wheeler Lake watershed in spring 2005. The purpose of this paper is to examine the impact of the CSP on the adoption and intensification of conservation practices in Alabama. The objectives were to examine the incentives necessary to motivate farmers to adopt and/or intensify management practices for different conservation practices identified in the CSP; to elicit perceptions of conservation efforts and programs; and to identify barriers to participation in the CSP. A survey was administered in three Alabama watersheds to elicit farmers' responses to questions concerning these objectives. Analysis of survey results shows that up to 15 percent of farmers in the three watersheds may qualify for the CSP. Incentive payments for enhancement activities such as intensive rotational grazing, use of a cover crop and annual soil testing should be 50 percent of practice costs to motivate farmers to intensify their conservation efforts.

## Environmental assessment of grazing land through modeling

Cook, D., and Sprinkle, J.

Corresponding Author: David Cook, DC Cattle Co. L.L.C., Phone: (928) 425-2524, Email: dccattleco@theriver.com

In 2002, during the worst drought on record (5.5 inches of rain) we reduced a herd from 143 to 103 head. The USFS informed us that a "full capacity inspection" had been completed and conditions called for complete de-stocking.

We developed a plan with the University of Arizona Extension and the USFS Globe District Ranger to collect range monitoring data to validate the perceived need for de-stocking.

Meanwhile, the USFS concluded an environmental assessment recommending stocking 33 head on the 24,000 acre grazing allotment.

We agreed to further reduce cattle numbers from 103 to 50 and collect monitoring data. Through the worst drought on record, we managed 50 head on approximately 1/3 of the allotment and never exceeded the allowable use levels. Increases to the stocking rate were granted by the USFS based on these data. Stocking was increased by approximately 25-50% over the next three years. Currently there are approximately 150 head on the grazing allotment with a proposed permit range from 50-150 with natural increase.

In closing, the range monitoring plan, on the ground inspections and partnerships are the key to managing public land grazing permits. We now have had the opportunity to apply USDA-NRCS programs to federal lands in a pilot venture. We must recognize that public land ranching is unique and work collaboratively with shared governance to establish affective coordinated resource management planning. This should be addressed in the 2007 farm bill.

## Agroforestry in the 2007 farm bill: realizing the potential to generate conservation and economic benefits for farmers, rural land managers, and communities

Current, D.A., Lherer, N., and Becker, D.  
Corresponding author: Dean A. Current, University of Minnesota, Phone: (612) 624-4299, Email: curre002@umn.edu

MAY/JUNE 2006

VOLUME 61 — NUMBER 3

# JOURNAL OF SOIL AND WATER CONSERVATION

IN THIS ISSUE

**SOIL  
BIOENGINEERING**

**URBAN SOIL COMPACTION  
ON INFILTRATION RATE**

**SWCS CONFERENCE  
PRESENTATIONS**

\*\*\*\*\*AUTO\*\*5-DIGIT 36830

\*\*\*\*PERIODICALS\*\*\*\*

\$15 P80

JOHNNY M. GRACE III

1414 KATIE LANE

AUBURN AL 36830-6336

