

11/06/92

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947

Project Number: 5342-12610-002-00D Mode Code: 5342-45-00 Strategic Plan Codes: 1.2.1.2 6.1.1.1 Creation Date: 11/04/92
Team Leader: David A. Farrell
Person Submitting Request: SIMANTON J R Telephone: 602-670-6381 Abstract Only: YES

Scientist to Contact: SIMANTON J R Telephone Numbers FTS:
SOUTHWEST WATERSHED RESER Commercial: 602-670-6381
USDA-ARS, 2000 E. ALLEN R FAX Number: 602-670-5550
TUCSON First Formal Report other
AZ 85719 than Abstract: NO

Manuscript has been: Peer Reviewed: (Attach All ARS-533s)
Cleared by Cooperative Agencys/Institute:

Title of Manuscript:
TEMPORAL VARIABILITY IN RANGELAND SOIL ERODIBILITY

Principal Users of Information:
Scientist: X Extension Service: X Producer or Producer Group:

Other (Specify): USDA Action Agency:
X SCS

Other Gov't Agency - Federal, State: Industry (name or description):
UNIVERSITIES

Authors: Authorship: Employer:
SIMANTON J R 1 5342-45-00
STONE J J 2 UNIV. OF ARIZ.

Signatures

<u>Title</u>	<u>Approving Official</u>	<u>Date</u>	<u>Sensitive</u>	<u>App/Disap</u>
Research Leader:	WELTZ MARK A	11/ 6/92	N	APPROVED
CD/LD/DAD Dir. :	<i>James M. Tolson</i>	<i>11/13/92</i>	<i>no</i>	<i>APP</i>
Area Director :				
NPS NPL:				
NPS ADA:				
OCI Director :				

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Journal or Equivalent: MEMORIAL SYM ON EXPERIMENTAL GEOMORPHOLOGY & LANDSCAPE ECOSYSTEM CHANGE
Prev Submitted: NO

Publication Type: A ABSTRACT ONLY

Patent Information:

Due to patent potential, is retention of intellectual property rights desired? No

Interpretive Summary:

Technical Abstract:

Temporal variability in soil erodibility is found in both crop and rangeland environments. Rangeland soil variabilities are less subtle than cropland variabilities and result from changes in the natural components of the rangeland site. The Revised Universal Soil Loss Equation (RUSLE) uses an algorithm to vary the soil erodibility factor "K" throughout the year. The algorithm, based on cropland field studies, is also used for rangeland soils.

A soil erosion study was conducted using a rainfall simulator on large plots in southeastern Arizona to determine the temporal cycle of rangeland soil erodibility. Erosion rate per unit of runoff varied by a factor of three through the year with the highest rates in the fall and lowest rates in the summer. The April and November erosion rates compared favorably with rates reported ten years earlier for the same soil. The rangeland soil erodibility cycle did not follow the RUSLE cycle which predicted the highest soil erodibility in the spring and the lowest in the fall.