

ESTIMATING SOIL EROSION FROM WIND USING THE WIND EROSION PREDICTION SYSTEM (WEPS)

The Wind Erosion Prediction System (WEPS) is a process-based, daily time-step computer model that predicts soil erosion by simulation of the fundamental processes controlling wind erosion. WEPS is designed for conservation planning and application providing the user with many elements of wind erosion including soil movement, estimated plant damage, and PM-10 emissions.

WEPS replaces the predominately empirical Wind Erosion Equation (WEQ) as the wind erosion prediction tool for NRCS. WEQ technology will be maintained in the Field Office Technical Guide (FOTG) for determining highly erodible lands (HEL) converted from permanent vegetative cover to annual cropping.

The official web site for WEPS information is:

<http://www.weru.ksu.edu/nrcs/wepsnrcs.html>

WEPS represents new technology in wind erosion and is not merely an improvement in Wind Erosion Equation. For example, WEQ predicts average erosion along line-transects across the field where as WEPS treats the field as two-dimensional. The WEPS erosion submodel simulates soil loss and deposition at grid points over the entire simulation region. WEPS calculates soil loss on a daily basis and allows users to analyze the output data to determine the times of the year when conservation treatments may be needed.

NOTE: Soil erosion rates estimated with WEPS will not be added to rates estimated with the Wind Erosion Equation (WEQ), USLE, RUSLE, OR RUSLE2 for conservation planning purposes unless the unsheltered distance (L) of the WEPS calculation and the length (L) of the WEQ, USLE, RUSLE, or RUSLE2 calculation are from identical locations with identical L-values within the field. This condition would seldom, if ever occur. WEPS factors will not be used in other wind erosion models such as the Wind Erosion Equation (WEQ)..