

# EROSION PREDICTION

## FOREWORD

This subsection provides the guidance for erosion prediction and measurement for Wyoming. Contents of this subsection include:

### **PART I - WATER**

The REVISED UNIVERSAL SOIL LOSS EQUATION (RUSLE) shall be used to make the soil loss predictions from sheet and rill erosion. The UNIVERSAL SOIL LOSS EQUATION (USLE) will be utilized **only** for highly erodible land (HEL) determinations.

Section A This section contains information needed for performing HEL determinations using the Universal Soil Loss Equation (USLE). Pages A-1 to A-3.

Section B This section contains information needed for calculating sheet and rill erosion using the Revised Universal Soil Loss Equation (RUSLE). Pages B-1 to B-47.

Section C This section contains information for defining rills, ephemeral gullies, and gullies. It also contains the procedures for calculating gully erosion, as well as for using the Alutín Method for calculating rill erosion outside of RUSLE. Pages C-1 to C-3.

Section D This section is an appendix and contains "C" factor and "P" factor lookup tables and figures used in the RUSLE. Pages D-1 to D-157.

### **PART II - WIND**

The WIND EROSION EQUATION shall be used to make the soil loss predictions from wind erosion.

Section A This section contains the archive information needed for calculating wind erosion using the critical period method. Pages A-1 to A-7.

Section B This section contains the information needed for calculating wind erosion using the management period method, which is the only method currently approved for use in Wyoming. Pages B-1 to B-26.

Section C This section contains information needed for calculating wind erosion using both the critical period method and the management period method. Pages C-1 to C-20.

Section D This section is an appendix and contains information needed for calculating wind erosion. Pages D-1 to D-40.

In situations where treatment for both water and wind erosion is needed, soil loss estimates using the RUSLE and WEQ are **not** to be added together to compare to T (Refer to National Agronomy Manual Part 501, Subpart A - Water Erosion, section 501.02, and Part 502, Subpart E - Principles of Wind Erosion Control, section 502.42).

# PART I

## *PREDICTING WATER EROSION LOSSES*

## PREDICTING WATER EROSION LOSSES

The following sections explain the primary factors that influence erosion by water and provides guidance on the use of the Revised Universal Soil Loss Equation (RUSLE). The Revised Universal Soil Loss Equation is an erosion prediction model designed to predict long-term average annual soil losses from a described area.

There are currently two methods for estimating water erosion; (1) the Universal Soil Loss Equation (USLE), and (2) the Revised Universal Soil Loss Equation (RUSLE).

**Universal Soil Loss Equation** which is **only** approved for use on highly erodible land (HEL) determinations.

**Revised Universal Loss Equation** which is the only accepted method for calculating soil loss predictions from sheet and rill erosion.

The Field Office Technical Guide (FOTG) addresses both models. Information to use the USLE is contained in Section A. Information to use the RUSLE is contained in Section B, and Section D.