RUSLE2 USE IN CONSERVATION AND NUTRIENT MANAGEMENT PLANNING

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What is RUSLE2?

RUSLE2 is the Revised Universal Soil Loss Equation Model that is used to predict Rill and Inter-rill erosion, sometimes called Sheet and Rill erosion. This model is being used by the Natural Resources Conservation Service for all conservation planning including, Conservation Compliance Planning.

RUSLE2 was developed by the Agricultural Research Service, with NRCS assisting in much of the database work.

To predict erosion, the RUSLE2 model needs the following inputs:

- Location
- Soil type
- Length and percent of slope
- Management
- Conservation practices

In order for any nutrient management model to communicate with RUSLE2, these are the important parameters that must be exchanged between models.

There are two ways of doing this data exchange with RUSLE2

(1) The first way to make these linkages is to incorporate other models within the RUSLE2 interface. This is done with the P index calculations as done by Kentucky, Tennessee and Pennsylvania. The advantage of this is that the interface is already known by anyone using RUSLE. It makes use of the complete RUSLE2 database. To run the PI you only need to enter what isn=t already there.

(2) The second way to make the linkages is to make RUSLE easy to call from other programs. The best example of this is SNAP. In this case the inputs are done in the SNAP model, it tells RUSLE2 that it needs an erosion calculation and sends the inputs that RUSLE needs like they would have been entered in RUSLE2. RUSLE2 calculates the answer and sends it back. This makes use of all the efforts that have gone into development of the RUSLE2 database. The advantage of this is that the user doesn=t have to know anything about using RUSLE2 in order to add at least some erosion prediction capability into the nutrient management model.

We expect at this time that SNAP will only use a portion of the RUSLE2 dataset. So, in essence it will be a more coarse erosion prediction tool than the RUSLE2 model itself. But it can be a good first step to see if soil loss on a field is close to where it needs to be.

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