

VIRGINIA NRCS RUSLE2 QUICK GUIDE

# Instructions for Virginia NRCS Basic RUSLE2 Certification Exercise

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## PART A. INTRODUCTION

### 1. Purpose: Demonstrate basic RUSLE2 proficiency

To be considered a Certified Conservation Planner by Virginia NRCS, you must complete a Basic RUSLE2 practical “take-home” exercise as described below.

### 2. Completing this exercise does NOT make you an expert!

Do not confuse completion of this exercise with proficiency in soil erosion prediction. Proficiency in soil erosion prediction requires a broad understanding of erosion science and how and when RUSLE2 applies (or does not apply) to real-world situations. It also requires experience collecting field information about slopes and other factors that will serve as inputs into RUSLE2. Furthermore, this exercise is not designed to test your ability to modify or build RUSLE2 Management files, which is the most important aspect of using the software correctly. Conclusion: Even after you successfully complete this exercise, please don't hesitate to ask for help or review guidance when you evaluate erosion and use RUSLE2!

### 3. Refer to other VA NRCS RUSLE2 guidance as needed

Before completing this exercise, you may need to install and properly set up or update RUSLE2 on your computer. For example, this exercise requires that you use a Virginia-specific printing template. Go to our [Erosion Resources Index](#) to link to guidance on setting up and updating RUSLE2 for Virginia users. Once RUSLE2 is properly installed and set up, refer to our document called [Getting Results with RUSLE2 Plans](#). This document contains step-by-step instructions on running and printing out a RUSLE2 Plan calculation, which is the key to completing this exercise.

### 4. Help is allowed

For additional help completing this exercise, do not hesitate to call on colleagues with RUSLE2 experience including Chris Lawrence. The goal is for you to learn how to use RUSLE2. Having someone coach you is acceptable as long as you are learning and you are the person “driving” (i.e., clicking the mouse).

### 5. Model real-life or imaginary scenarios

Select any scenario or comparison that allows you to complete this exercise and demonstrate your proficiency with RUSLE2. Modeling a real-life situation is more meaningful, but is not required.

### 6. Focus: Getting results, not building managements

The goal of this exercise is for you to demonstrate proficiency in obtaining and interpreting RUSLE2 results using a Plan calculation. The goal is not to demonstrate proficiency in modifying or building RUSLE2 management files. Pick any reasonable management files available in your moses database or build your own. Errors within management files alone will not cause you to fail this exercise. Naturally, errors within

management files are not acceptable when using RUSLE2 to model a “real-life” soil loss scenario for planning, programs, or compliance purposes!

## **PART B. INSTRUCTIONS FOR COMPLETING THE EXERCISE**

### **1. Create a RUSLE2 Plan from scratch**

Starting “from scratch” means using a blank “default” Plan as a starting point. You may also use or modify a saved Plan file that you personally created from scratch in the past. The key is that it be your work, past or present. Do not simply save a copy of a Plan that was created by a colleague and change the inputs.

### **2. Compare at least two management scenarios across three fields**

Try to get a wide range of soil loss, SCI, and STIR results so you can show that you know how to interpret those values. For example, same crops no-tilled vs. clean-tilled on A, B, and C slopes.

### **3. Save a Plan in Word format with details**

- a. Select the “VA Plan Printout w Details.2007” printing template. Save the resulting Word file to a place on your computer where you’ll be able to find it. Name the Word file as follows:  
YourLastName\_YourFirstName\_R2\_Basic\_Plan.doc (e.g., Patterson\_Bill\_R2\_Basic\_Plan.doc).
- b. Note for Word 2007 users: If some tables are jumbled due to compatibility problems between RUSLE2 and Word 2007, don’t seek to fix that glitch. Just follow all other instructions below as best you can.
- c. Note for Word 2010 users submit your document as-is!: If you can’t get the “VA Plan Printout w Details.2007” to work at all, then use another detailed printing template and follow all other instructions below as best you can.

### **4. Show that you know how to paste in crop management details**

Include in your Plan document crop management details (tillage operations, crops, yields, etc.) for the management alternatives modeled in the Plan. This information does **not** print out automatically in a Plan. However, instructions for obtaining and pasting this info do print out automatically in the Plan when you use the “VA Plan Printout w Details.2007” printing template. In the “Inputs” section of the Plan, see “4B. Crop Management (C Factor) Details – Selected Alternatives.” Follow those instructions carefully.

### **5. Add clear descriptions and interpretations**

- a. Read through your printout, including the definitions of key outputs found at the end of the document. Then add narrative (*i.e., your own words*) to the Plan document describing RUSLE2 inputs and interpreting RUSLE2 outputs in order to produce a “model” Plan printout – the kind of document you’d prepare for an important, knowledgeable client who specifically asks for a detailed RUSLE2 printout to take home and review.
- b. Key Virginia Conservation Practice Standards such as VA-328 (Conservation Crop Rotation) provide criteria for interpreting RUSLE2 results for soil quality purposes. Table 1 below is based on these criteria and may be used for interpreting RUSLE2 results in your Plan document.

**Table 1: VA NRCS Criteria for Evaluating Soil Organic Matter (SOM)  
Trend based on RUSLE2 Output**

Soil loss at or below T?		SCI Score	Interpretation
Yes	and	+0.75 or more	SOM Building – Optimum
Yes		+0.74 to +0.50	SOM Building – Intermediate
Yes		+0.49 to +0.25	SOM Building – Minimum
Yes		+0.24 to 0.00	SOM Maintenance
No	and/or	-0.01 to -0.25	SOM Depleting – Moderate
No	and	-0.26 to -0.50	SOM Depleting – Severe
No		-0.51 to -0.75	SOM Depleting – Very Severe
No		-0.76 or less	SOM Depleting – Extreme

- c. Use the following excerpt from the VA-328 Standard to help you interpret STIR values in your printout:

*Minimizing soil disturbance can enhance soil quality in ways that are not fully accounted for by SCI. Soil Tillage Intensity Rating (STIR) provides a useful measure of soil disturbance to complement SCI, with a STIR value of 10 or less representing an optimum to strive for. This applies to STIR values associated with each crop as well as to the average annual STIR value for the overall cropping system.*

#### 6. Review example submission if needed

Click [here](#) to view example of VA Basic RUSLE2 Certification submission that would pass with grade of “Excellent”. Less detailed submissions can still pass – grades of “Good” and “Adequate” are also available!

### PART C. INSTRUCTIONS FOR SUBMISSION

- Send your completed Plan document in Word format to Chris Lawrence as an e-mail attachment. Please carefully follow the procedures below. Each individual seeking certification must send in a separate e-mail and attachment from their own account.
- Send to: [chris.lawrence@va.usda.gov](mailto:chris.lawrence@va.usda.gov)
- Subject Line: Exactly same as name of your attached file (e.g., Patterson\_Bill\_R2\_Basic\_Plan)
- Don’t forget to attach the Word file for your Plan document.
- Include the following text in body of your e-mail:
- “I hereby certify that I created the attached RUSLE2 Plan and that it accurately represents my current level of proficiency with the software. Signed: (Your Name)”

### PART D. REVIEW PROCESS

Chris Lawrence will review your Plan document and send you an e-mail message within 15 business days letting you know if you passed or if you must try again. If you pass, save a copy of Chris’ e-mail in your files as proof that you have completed this basic RUSLE2 certification requirement.