

Virginia NRCS RUSLE2 Quick Guide

Building RUSLE2 Crop Management Files

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SECTION A. FIVE (5) STRATEGIES FOR GETTING CROP MANAGEMENT FILES

1. “STEAL” without modification

Pull existing management templates or files into your R2 calculation *without modification*. See Section D for tips.

2. “SWAP & DROP” with Rotation Builder

Save a new copy of a management that contains *active Rotation Builder links*. From Rotation Builder screen of the new file, modify the management by swapping out or deleting Rotation Builder components. See Section E for details.

3. “SPLICE” with Rotation Builder

Save a new copy of a management template or file – either a blank default or one containing active Rotation Builder links. From Rotation Builder screen of the new file, use Rotation Builder to add new management components. See Section F below for details.

4. “SPLIT” with line-by-line changes

Save a new copy of any existing management template or file – active Rotation Builder links not needed. Modify the new file by making line-by-line changes to elements such as dates, operations, vegetations, etc. See Section G for tips.

5. “SRATCH BUILD” with line-by-line changes

Save a new copy of a blank management template. Add in all elements (dates, operations, etc.) line by line. See Section G for tips.

SECTION B. KEY CONCEPTS

1. The best strategy to use depends on the situation

Don't rule out any of the above strategies. The best approach to use will vary from case to case; keep all options in your toolbox.

2. The best combination/sequence of strategies depends on the situation

The above strategies can and should be used in combination to build management files. There is not a set sequence or order for combining these strategies – the most efficient approach will again vary from case to case.

3. Always focus on the ROTATION DURATION box in the management screen

Regardless of the strategy you use for building managements, check the rotation duration (“Duration, yr”) box early and often. Never type into this box. R2 will calculate rotation duration based on sequence of dates you've provided in the management file.

4. **Rotation Builder takes some practice. And it isn't perfect.**

Rotation Builder takes a little time to master. And once you are experienced, a stray mouse click (or less) will still cause Rotation Builder to occasionally make fatal errors. TIP: If RB automatically adds years, you're ok. If it shifts months or days, hit "cancel"!

SECTION C. TO DO BEFORE YOU START R2

1. **Sketch out on paper the rotation(s) you'll build.**

Write down rotation duration in years, then the following for each crop: type, timing, tillage, and manure applications (if any).

2. **Use your CMZ content guide/calendar to understand choices available in "a" and "b" Folders.**

If you will be swapping or splicing with Rotation Builder, really focus in on picking components with dates that sequence properly.

3. **Think about how you will name/save the files you'll build.**

Option 1: Simply save new management(s) in CMZ "c" Folder with well-chosen names. Numbering helps!

Option 2: Create new subfolder in CMZ "c" Folder for this project. Go to **Database** menu, select **Rearrange**. In Change Database lefthand box, navigate to and right-click CMZ "c" folder and right-click on it. Select **New Folder** and give new subfolder a good name.

SECTION D. TIPS FOR "STEALING"

1. **The management you need already exists. Don't waste time saving a new copy.**

Exception: When comparing managements from multiple locations, it sometimes makes sense to save new copies to a single location (i.e., your "c" Folder) simply to better organize them. This can really speed up pulling them into your calculation.

2. **Open your calculation file and start pulling existing managements into the calculation.**

See "Getting Results w RUSLE2 Plans" Quick Guide for details!

SECTION E. "SWAPPING & DROPPING" STEP-BY-STEP

1. **Close any open R2 calculation files.**

Fewer open windows = less opportunity for confusion

2. **Open an existing management that contains ACTIVE ROTATION BUILDER LINKS.**

For example, "b" Folder multi-year templates.

3. **Hit "Save As" to make a copy, then name and save your new file. And save again frequently!**

Save As = 2nd icon in R2 header. If you created a custom subfolder, remember to save your new file there!

4. **Do NOT start modifying lines in your new management! Instead, OPEN ROTATION BUILDER.**

Click yellow folder icon near top of window ("View/edit rotation builder used to make this management").

5. **Delete ("DROP") unwanted rows/components... AND KEEP AN EYE ON DATES!**

Click on unwanted rows in Components List and hit "-" to delete them. Delete from bottom of the list if possible. Deleting a row will often cause RB to add years to rows below. TIP: If RB automatically adds years, you're ok. If it shifts months or days, hit "cancel"!

6. Change (“SWAP”) components... **AND KEEP AN EYE ON DATES!**

Change content of each row using black pull-down arrow to the right of the 2nd column. Try to stick with choices that have same start/end dates as original components. If you don’t, Rotation Builder will often add years to any rows below. TIP: If RB automatically adds years, you’re ok. If it shifts months or days, hit “cancel”!

7. Correct dates if needed by adding/subtracting years

It is normal for Rotation Builder to automatically add years to one or more rows in your Component List. Go to the **Correct dates by:** column for relevant lines and choose either “1 year earlier” or “1 year later”. **Never** select any other choices!

8. View ALL of your new management by hitting “Apply/Close”

Although a preview of your new management is available in the Rotation Builder screen, do not hesitate to hit “Apply/Close” (see bottom of RB screen) at any time. You can toggle between the Rotation Builder screen and management screen as often as needed.

9. Check rotation duration FIRST...

When the full management screen opens, IMMEDIATELY check the rotation duration box (“Duration, yr”). This is a key way to check that Rotation Builder has not added undesired years to your management.

10. ...then check management contents line-by-line

Tip: use your mouse to highlight all lines for the first year, then scan those lines for problems. Repeat for the second year, third year, etc. If your focus is erosion, train your eye to zero in on erosion-influencing operations and ignore erosion-neutral operations.

11. Adjustments to management needed? Do NOT adjust line-by-line – OPEN ROTATION BUILDER

Keep toggling back to the RB screen to improve the management as much as possible by swapping and dropping components.

12. IMPORTANT NOTE FOR MANagements THAT INCLUDE WEEDS OR MANURES

R2 sometimes produces an error message (missing “permeable-barriers” reference) when a management file built with Rotation Builder contains weeds or manures in the “Type of cover material” column. This is a R2 software bug that we have investigated, can’t be fixed by the user, does not substantively impact R2 results, and should be ignored (i.e., select “Cancel” or “Ignore all like this”, etc). R2 programmers are aware of this problem and will hopefully fix it in the future.

SECTION F. “SPlicing” STEP-BY-STEP

MANY STEPS FROM SECTION E ARE REPEATED BELOW – THOSE THAT DIFFER ARE HIGHLIGHTED!

1. Close any open R2 calculation files.

Fewer open windows = less opportunity for confusion

2. Open an existing management template or file

For these instructions we’ll assume you chose your blank **default Rotation Builder Starter File** (see CMZ “c” Folder).

3. Hit “Save As” to make a copy, then name and save your new file. And save again frequently!

Save As = 2nd icon in R2 header. If you created a custom subfolder, remember to save your new file there!

4. Do NOT start modifying lines in your new management! Instead, OPEN ROTATION BUILDER.

Click yellow folder icon near top of window (“View/edit rotation builder used to make this management”).

5. Select your first component in Row 1, then check dates.

Select using black pull-down arrow for Row 1 in Component List. After making selection, check **Starting date** and **Ending date** columns. If dates don't look right, select a different component (see your CMZ Calendar if needed).

6. Add Row 2, then select your second component, then check dates.

Click "+" box to add a row to the RB Component List. **Starting date** for Row 2 must be after the **Ending date** for Row 1. If not, RB will automatically add a year to Row 2. **NOW IS THE TIME TO PULL OUT YOUR CMZ CALENDAR. THE CALENDAR IS CRUCIAL AT THIS STAGE FOR SELECTING ROTATION COMPONENTS THAT WILL SEQUENCE CORRECTLY!**

7. Add next row, then select next component, then check dates... and repeat as needed

Work in stepwise fashion, finishing each row before creating the next. DO NOT add multiple rows to the Components List and then go back and select components; if you do, RB will usually add years to one or more row.

8. Correct dates if needed by adding/subtracting years

It is normal for Rotation Builder to automatically add years to one or more rows in your Component List. Go to the **Correct dates by:** column for relevant lines and choose either "**1 year earlier**" or "**1 year later**". **Never** select any other choices!

9. View ALL of your new management by hitting "Apply/Close"

Although a preview of your new management is available in the Rotation Builder screen, do not hesitate to hit "Apply/Close" (see bottom of RB screen) at any time. You can toggle between the Rotation Builder screen and management screen as often as needed.

10. Check rotation duration FIRST...

When the full management screen opens, IMMEDIATELY check the rotation duration box ("**Duration, yr**"). This is a key way to check that Rotation Builder has not added undesired years to your management.

11. ...then check management contents line-by-line

Tip: use your mouse to highlight all lines for the first year, then scan those lines for problems. Repeat for the second year, third year, etc. If your focus is erosion, train your eye to zero in on erosion-influencing operations and ignore erosion-neutral operations.

12. Adjustments to management needed? Do NOT adjust line-by-line – OPEN ROTATION BUILDER

Keep toggling back to the RB screen to improve the management as much as possible using that strategy before you resort to line-by-line changes in the management screen.

13. Insert lines in Rotation Builder Component list as needed, then check dates.

If you need to insert a line between two existing lines in the RB component list, click on an existing lines and hit the "+" box. After selecting the correct component for the new line, check dates and adjust as needed.

14. IMPORTANT NOTE FOR MANagements THAT INCLUDE WEEDS OR MANURES

R2 sometimes produces an error message (missing "permeable-barriers" reference) when a management file built with Rotation Builder contains weeds or manures in the "**Type of cover material**" column. This is a R2 software bug that we have investigated, can't be fixed by the user, does not substantively impact R2 results, and should be ignored (i.e., select "Cancel" or "Ignore all like this", etc). R2 programmers are aware of this problem and will hopefully fix it in the future.

SECTION G. TIPS FOR LINE-BY-LINE “SPLITTING” & “SCRATCH BUILDING”

1. Don't hesitate to make line-by-line changes.

Line-by-line changes are sometimes the only way to properly represent your client's activities out on the land.

2. SAVE EARLY & OFTEN!

Asterisk (*) after file name in window header tells you that you have unsaved changes.

3. Use your CMZ Content Guide/Calendar to help narrow your choices.

Even if the management template files from “a” and “b” Folders are not adequate for your needs, the CMZ guide might help you select line-by-line elements (such as additional RUSLE2 tillage operation options).

4. Exhaust your Rotation Builder options before making line-by-line changes

Making a single line-by-line change to a date, operation, or vegetation will permanently erase any active Rotation Builder links!

5. WATCH YOUR DATES & ROTATION DURATION!

Entering dates out of sequence in the management screen will cause dates in rows below to advance by one or more years. Taking a stepwise approach, checking and adjusting dates, and continually checking the ROTATION DURATION (“Duration, yr”) box is crucial whether you are building managements line-by-line or with Rotation Builder!

6. Consider stripping out “erosion-neutral” operations

If your focus is erosion results, then erosion-neutral operations that clutter the management screen can make it tougher to read and modify the management properly. Consider deleting those lines to cut down the number of lines to contend with.

7. GOOD LUCK!