



Step-by-Step Instructions for Getting Maps and Soil Information for NR 151

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In an earlier article, I wrote that soil test results make up the backbone of a nutrient management plan (NMP). The other components of the NMP include soil maps, hydrologic soil ratings, topography and slope maps, and information about the depth to bedrock and water table. This is a lot of information to assemble, but the good news is it can all be found at one place on the world wide web. Below are step-by-step instructions that will get you the site-specific information that you need for your NMP. Amazingly, you can obtain this information in less than an hour, and it is not much more difficult than navigating Google Earth. If you haven't used Google Earth and don't consider yourself good with computers then it's probably a good idea to have someone nearby who is. Alternatively, this task can be completed in about ten minutes by someone who has a MySpace page or is constantly "texting" people on his or her mobile phone. Chances are you know someone like this at work or at home.

What you'll need:

1. A computer with a fast connection to the internet, as dial-up connection might be too slow.
2. Internet Explorer 6 or 7 (some other web browsers will work too) with pop-up blockers disabled. This is very important; if pop-ups are blocked you won't be able to generate maps.
3. Adobe Acrobat Reader.
4. A color printer.

Step 1: Visit the Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>)

Find this site by typing the address above into your web browser, or by typing "web soil survey" into Google. Once you've arrived at the web soil survey site, click on the big green button near the top of the page that reads "Start WSS".

Step 2: Zoom in on Your Property

Find your property by entering in the address in the "Navigate By..." section or by zooming in on the map with the zoom tool, a magnifying glass with a plus sign.

Step 3: Select the "Area of Interest" or AOI

You'll need to use one of two virtual tools to do this. They can be found in the toolbar above the map. They both have the letters AOI and a red rectangle of polygon. To use the AOI rectangle, click and hold the cursor on the upper left hand corner of your property and drag the cursor down to the lower right hand corner and release the mouse button.



Figure 1. Click on the green button to begin the Web Soil Survey application



Figure 2. To find your property, enter the street address, or zoom in using the zoom tool.

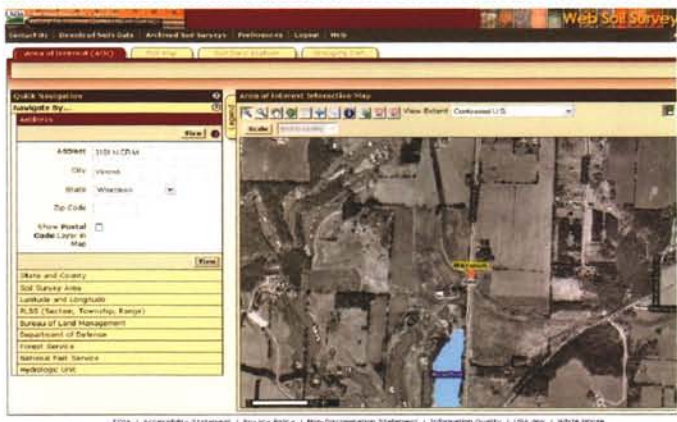


Figure 3. After entering the address of the O.J. Noer Facility, an aerial photograph of the research center and surrounding areas appears.

I find the polygon tool to be the more useful, as most properties are not perfectly rectangular. However, it may take a little longer to learn how the polygon tool works. Click once on any part of the property border; drag the mouse along the border until you reach a corner. Then click the mouse once and drag in a new direction. After you have encircled your property with the polygon tool, double click the mouse to finalize the selection. If you are unhappy with the area you selected, just click the "clear AOI" button located to the left of the map.

Step 4: Find and Print Maps

1. Soil Map and Topography Map
 - a. Click on the tab near the top of the page that reads "Soil Map."
 - b. Click "Printable Version" in the upper right hand corner of the screen and click "view" when the popup screen appears. After a minute or so, another window will open with a map that you can print. If you have a browser with a pop-up blocker, this window will not appear unless you disable the pop-up blocker.
 - c. Close the print version and return to the web version of the soil map and click on the "Legend" tab on the upper left side of the map
 - d. Scroll down to the bottom of the legend and click on "Topographic Map". This will be the second to last item on the legend. Click on the "X" in the upper right hand corner of the legend, and the soils map should be shown with a topographic map.
 - e. Click "Printable Version" in the upper right hand corner of the screen and click "view" when the popup screen appears. After a minute or so, another window will open with a map that you can print. If you have a browser with a pop-up blocker, this window will not appear unless you disable the pop-up blocker.
 - f. Click on the legend tab again and select the "Aerial Photograph" option near the bottom of the legend. This will remove the topographic map and replace it with the aerial photograph.

2. Soil Slope Map

- a. Click on the tab that reads "Soil Data Explorer."
- b. Click on the tab that reads below and to the right of "Soil Data Explorer" that reads "Soil Properties and Qualities."
- c. To the left of the map, click on the yellow bar that reads "Soil Qualities and Features."
- d. Then click on the yellow bar that reads "Representative Slope."
- e. Then click "View Rating."
- f. Click "Printable Version" in the upper right hand corner of the screen and click "view" when the popup screen appears. After a minute

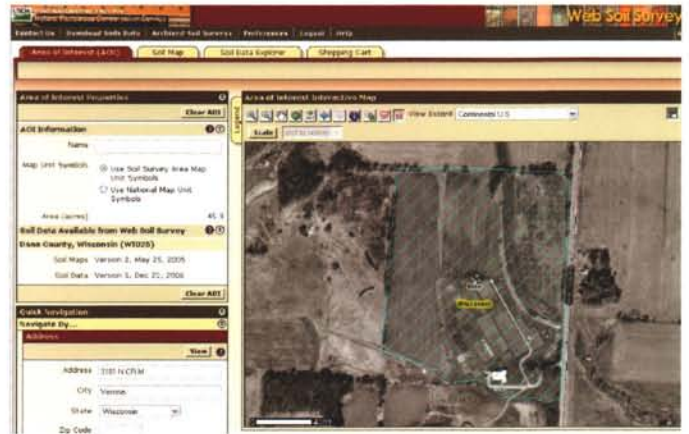


Figure 4. Use the polygon AOI or rectangle AOI to select the "Area of Interest". After selecting the area, it will be highlighted by blue lines.



Figure 5. After selecting the AOI, clicking on the "Soil Map" tab will create an overlay showing the soil types within the AOI. A printable map is generated after clicking on the "printable version" button in the upper right hand corner.



Figure 6. Most of the maps for NR151 can be generated by selecting an AOI, clicking on the "Soil Data Explorer" tab, and then clicking on the "Soil Properties and Qualities" tab

or so, another window will open with a map that you can print. If you have a browser with a pop-up blocker, this window will not appear unless you disable the pop-up blocker.

3. Hydrologic Soil Group

- Click on the yellow bar that reads "Hydrologic Soil Group."
- Then click "View Rating."
- Click "Printable Version" in the upper right hand corner of the screen and click "view" when the popup screen appears. After a minute or so, another window will open with a map that you can print. If you have a browser with a pop-up blocker, this window will not appear unless you disable the pop-up blocker.

4. Depth to Bedrock Map

- Click on the yellow bar that reads "Depth to a selected soil restrictive layer". If this is not available click on the yellow bar below that reads "Depth to any soil restrictive layer."
- Then click "View Rating."
- Click "Printable Version" in the upper right hand corner of the screen and click "view" when the popup screen appears. After a minute or so, another window will open with a map that you can print. If you have a browser with a pop-up blocker, this window will not appear unless you disable the pop-up blocker.

5. Water Table Map

- Click on the yellow bar that reads "Water Features."
- Then click on the yellow bar that reads "Depth to Water Table."
- In the advanced options, set the beginning and ending months to coincide with when you typically begin and end applying fertilizer. For example, at the O.J. Noer Facility the first fertilization is typically occurs in May and ends in October.
- Then click "View Rating."
- Click "Printable Version" in the upper right hand corner of the screen and click "view" when the popup screen appears. After a minute or so, another window will open with a map that you can print. If you have a browser with a pop-up blocker, this window will not appear unless you disable the pop-up blocker.


Potential Problems and Solutions

Problem 1: Technical issues like the web soil survey doesn't run properly on my computer, the maps won't print, or I can't disable the pop-up blocker. There are an infinite amount of potential technical problems that can occur. These can be extremely frustrating. A good solution is to visit the local library,

which will likely have computers which are very capable of running the web soil survey and generating printable maps. Also, computer savvy people are fairly good at finding fast solutions to these common technical problems.

Problem 2: Golf course was built after aerial photographs were taken. Unfortunately, there is no easy solution to this issue. For now, you'll need to approximate the property borders and possibly draw in by hand the locations of the golf holes and other fertilized areas. Hopefully, the aerial photographs will be updated in the near future.

Problem 3: Site grading and soil modification has changed soil properties, so the maps are not accurate. The solution to this problem is to document the scope of the changes and indicate the new properties. For example, the web soil survey indicates a steep slope in an area that was graded to be nearly flat for our research plots. The NMP for the O.J. Noer Facility will include a note that the slopes shown in the map no longer exist due to grading. Alternatively, it is possible that new slopes were built on a previously flat area. These areas should also be identified.

This article only addressed how to collect all the maps and soil information you'll need for a NMP. The next step in the process is interpreting the information on the maps in order to identify areas which fertilization restrictions exist. We will help you interpret the maps at our NR151 Workshops so you can develop a fertilization program for your golf course that conforms to the new regulation. Registration forms are available online at www.turf.wisc.edu. 



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