

# Tutorial of The Vermont Natural Resources Atlas — A Resource for Farm Mapping

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*This article provides a basic Tutorial for farmers and farm service providers on putting the Vermont Natural Resources Atlas to use in agriculture. The tutorial is based on how the website is configured as of September 2013. Changes and updates to this website may alter the location of various components and may alter some of the steps required to use this tool.*

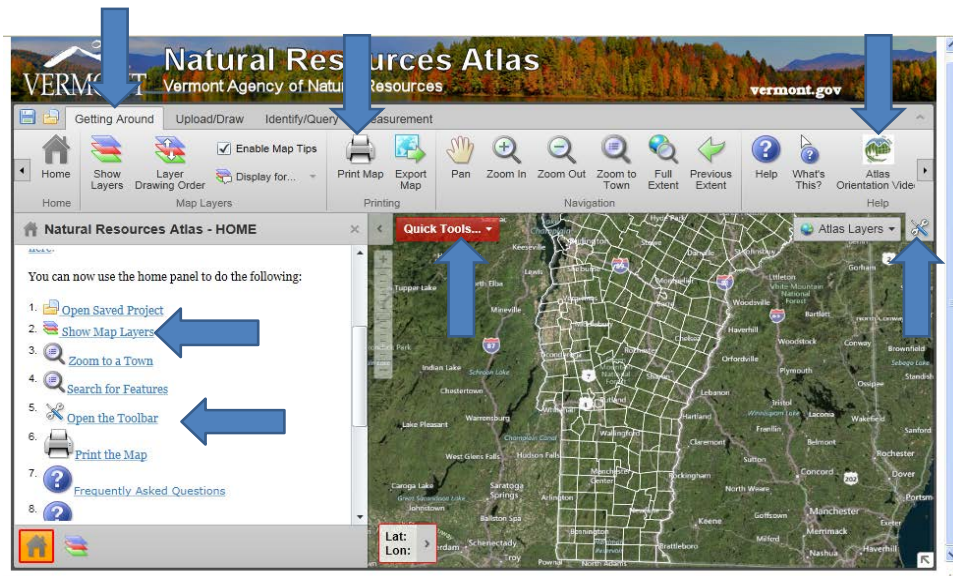
In my work as the Vermont Field Agent for Land For Good, I work with both farmers looking for land and non-farming property owners who are looking to make their land available for agriculture. One of the first things that I often ask about is the types of soils on the properties that are under discussion. In many cases, the first response that I get is, “We have sent soils out to be tested.” But soil tests answer a different question than what I am asking. While soil tests identify soil fertility and organic matter, they do not identify the soil types, known “soil series”, as categorized by the USDA. The soil types, such as “Hadley Silt Loam” or “Vergennes Clay” or “Cabot Stoney Loam” or “Windsor Loamy Fine Sand” are based on characteristics influenced by the formation of the soil over geologic time. The characteristics of a given soil type will influence aspects such as tillage, drainage, native fertility, and yield potential.

To figure out what soils are on a property, we start by looking at soil maps. One online tool for this purpose is the USDA Web Soil Survey [websoilsurvey.nrcs.usda.gov/app/](http://websoilsurvey.nrcs.usda.gov/app/). While this tool is very useful, and the website has a great deal of information on soils, it tends to be slow and clunky, and is also limited to giving you only soil information. Fortunately, a relatively new tool is available in Vermont, **the Vermont Natural Resources Atlas, which can be used to map soils as well as other features of use to farmers such as property boundaries, acreage and flooding hazards and much more!**

The remainder of this article will give you a quick overview of some of the most useful features of the Vermont Natural Resources Atlas and how to operate them. You may wish to print out the illustrations from this article, or to have them on a separate screen, while you are exploring the Atlas. To open the Atlas, go to:

[anrmaps.vermont.gov/websites/anra/](http://anrmaps.vermont.gov/websites/anra/) .

**Scroll down to next page to begin the Tutorial...**



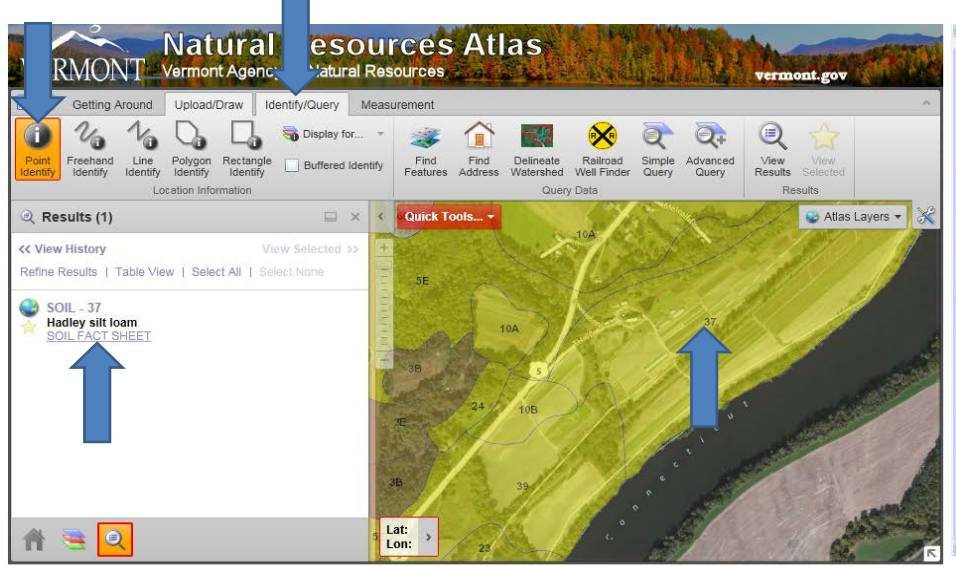
When you get to the site, the first thing that you should do is open the “tool bar”. There are two ways to open this (see picture above and note the blue arrows): from the menu at the left of the screen, and from the wrench icon in the upper right hand corner of the aerial image. Watching the Atlas Orientation Video will help you get started. You will start at the “Getting Around” tab, which includes the “Print Map” button. The “Print Map” button is used to both print maps and to also create PDF’s of your maps, which you can save to your computer. “Quick Tools” includes a way to zoom to addresses or towns. As described in the Orientation View, you can also use a scroll wheel on your mouse to zoom into a particular location. Quick Tools also provides you with access to the Print Button when using tabs other than “Getting Around”. “Show Map Layers” will give you a menu of “layers” (ie property characteristics such as soils and flood hazards) that you can add to your map.

Making a number of separate maps with different layers, or features, is usually more useful than trying to show too many things on one map. Thus, as you are working, consider which layers you want to show together. For instance, you may map soils separate from flood hazards and then also make a separate field acreage map, but include the property boundaries on the acreage map.

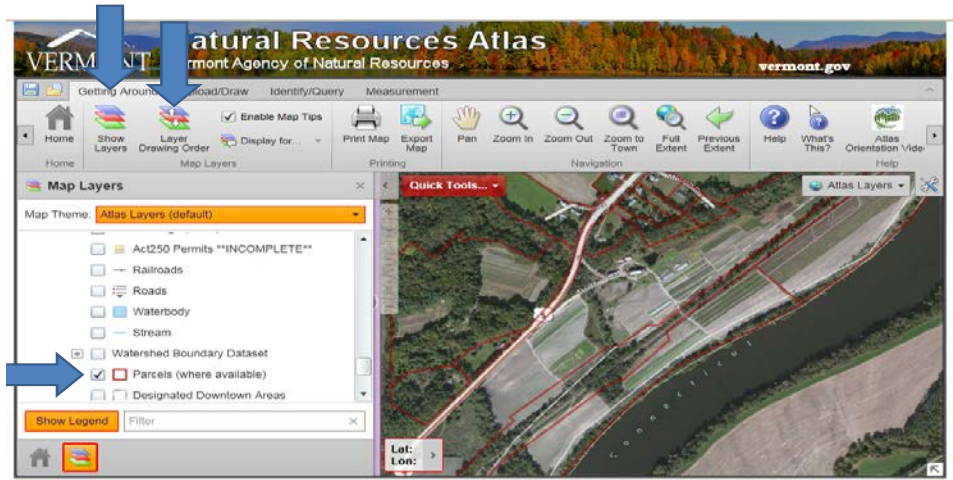
Scroll Down to the Next page to learn about mapping soils and other features...



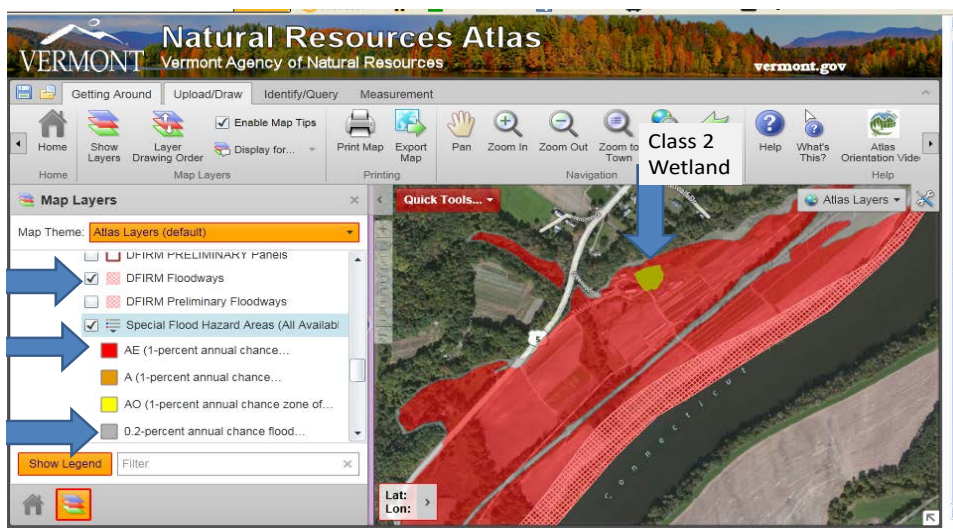
Once you have clicked on “Show Layers”, to show the Soil Layer, scroll down the layers menu, and then click on the + sign next to Geology, which will open up an expanded menu of geologic layers. Then scroll down that menu until you find “Soils” and check that box. You could also look at the Prime Agricultural Soil layer or the Hydric Soil layer, but start with only the Soils Layer which will give you the most information. Use the Transparency Slider so that you can see both the aerial picture and the soils layer.



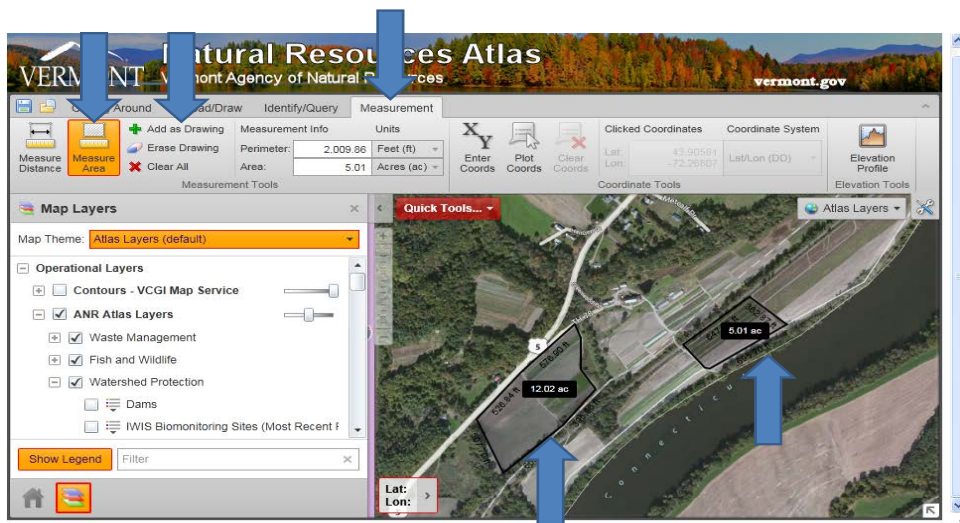
To learn about these soils, next click on the Identify/Query tab and then the “Point Identify” Button. Then move your mouse to anywhere within the soil type which you want to learn about, and click. On the left side of the screen, the soil will be identified. Click on the “Soil Fact Sheet” link to download a PDF of the USDA-NRCS Fact sheet on this soil type. This will give you extensive information on soil texture (sandy, loamy clay, etc), slope, drainage, yield potential and other important characteristics of the identified soil type, or series. You can save these fact sheets to your computer.



After expanding/opening the “ANR Basemap Data” section of the Atlas Layers menu, you can click on “parcels” to see property boundaries, if the Town has provided that data information digitally to the State. Note: this layer will be obscured by the Soils layer, unless you change the “Layer Drawing Order” as described by the Orientation Video.



Open the “Watershed Protection” Layer menu and you can add Wetlands layers, as well as layers that show flood hazards. The “Floodways” are areas that typically flood during any type of flooding including after spring snowmelt. “Special Flood Hazards” include the “1-percent annual chance” (red layer), formerly known as the “100 year flood plain”, and the “.2-percent annual chance”(grey layer), formerly known as the “500 year flood plain”. To see the key for this, click on the down arrow between the layer checkbox and the word “Special”. You will see other layers in the Atlas for which keys can be expanded in this way. The Transparency Slider is also useful here for visibility. Another layer that can be added is “Flooded Soils-NRCS”. This will often be similar to the Special Flood Hazard, but it is not the same rating system. Expanding the key, you will see that that the NRCS rating scale goes from “Frequent” to “Very Rare”, making it not completely analogous to the Flood Hazard rating, so the layers will often vary.



To calculate field acreage, it is best to zoom into the field from “Getting Around” prior to measuring so that you can clearly see the boundaries. Then, go to the “Measurement” Tab, and then click on Measure Area. Next choose a corner of a field that you want to measure. Click, release, and move your mouse to the next corner (or bend) in the field and click again. Be very careful to look for shadows from hedgerows in the picture and to take into account that hedgerows often over hang over the field edge. When you get back around to the first corner, double click on your first point, and the field acreage will appear. To save this on your map, click on “Add As Drawing”. You will see that the linear feet in between each point clicked is also labeled. Note that the units can be changed to meet your needs. You can also label fields and other features using tools in the “Add/Draw” tab. For instance, you may want to label the location of water wells.

Spend some time exploring this highly useful resource and you will likely find other features of your property of interest to map. Having information on soils, flooding, and acreage will help you to better understand the agricultural potential of any farmland that you are considering, as well as alert you to hazards. Having maps of the land that you are farming, or that you are considering leasing or buying, will help service providers, like myself, help you in the evaluation of the property and assessing whether it’s a good fit for your needs.

For more assistance on mapping your property or for assistance with farmland access, purchase and leasing issues in Vermont or elsewhere in New England, learn how we can help at [landforgood.org/how/consulting](http://landforgood.org/how/consulting) or contact us at [landforgood.org/contact](http://landforgood.org/contact).