

DESIGN ELEMENTS OF NATURE:

SOIL

Soil is the foundation of plant communities and all life on the surface of the Earth. Soil is often overlooked as something to force to meet needs with chemicals and tillers rather than knowledge. Understanding your soil's characteristics will give you information about what types of plants will thrive, how you can use the land, and the best practices to conserve and regenerate it. Somethings to consider:

1. **Ecoregion.** Ecoregions are areas that have similar climate, geology, and soil. Some examples include: piedmont, coastal plain, shore
→ More information: <https://www.epa.gov/eco-research/ecoregions>
2. **Geology.** Think about geology as rock formations all around us and under the surface, it can define the types of soils and drainage of the land. Geology also plays a large role in water supply including well water supply and septic conditions.
3. **Soil Types.** Soil types are general characteristics of soil - they are defined by texture (sand, silt, clay), parent material (geology), and drainage type. Soil types determine how successful farming will be, for example it can be "fair" for farmland " or "poor " for farmland, poor farmland usually is wet and stony soils or droughty ecoregions. How to find your soil types is explained on the second page.
4. **DIY - record your own elements.** Use a google map satellite layer to create a digital record, as well as photos that you take of different traits and plants that you see, recording with time and season. You take notes and mark where you notice it is wet or dry. Keep your record going over seasons to really get to know your patch of land.



Soil Information and Mapping:

A tool to use to understand your soil is the **USGS Web Soil Survey**. This online mapping tool will give you very detailed information about your soil types and uses, anywhere in the United States. It is not the most user friendly, so these steps should help guide you:

1. Click on the link: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
2. You will be looking at a map of the entire country, you need to narrow down your view to a specific location. Use the "Quick Navigation" options (brown bar), click "Address" and enter the address of your site in the open box (eg, 100 E Northwestern Ave, Philadelphia, PA 19118) and then hit enter on your keyboard or click "View" An aerial map of your property will appear.
3. You will want to narrow down your view further. Click the magnifying glass icon with a + (under the words Area of Interest Interaction). This will zoom in again. You can also click and draw a box using the magnifier to zoom into a specific area.



4. Once you narrow in to the specific location, you need to create your Area of Interest (AOI). The area you select with this tool will display specific soil characteristic information. To create the boundaries of your AOI, use the rectangle AOI (click and drag to draw a rectangle) or polygon AOI (click the boundary end points, then double click when it is the correct shape). After you have defined your AOI, a green shape will appear with diagonal lines.
5. Look back to the top tabs (above the map), "Area of Interest (AOI)" is currently selected in red. Now click the next tab "Soil Map" tab. This tab will show what soils are in what part of the AOI as well as the acres and percentage. If you click on the name of the soil in the chart you will find even more detail on its makeup.

