

## Soil Samples

Seven soil samples were collected from the property. The location of these samples are illustrated in the orthophotograph below. Soil samples A, B, D, E, F, and G underwent soil chemistry analysis. Sample C underwent a Soil Foodweb Analysis which identified and quantified beneficial bacteria and fungi. Results indicate soil nutrient deficiencies may require soil amendment for healthy growth of cultivated crops. The desired ranges within each graph represents the range of that nutrient or mineral in which healthy plant growth will occur. The full test results and Soil Foodweb recommendations are located in Appendix B.

Sandy soils contain large pore spaces which allows for easy percolation of water. This water will also leach out the vital nutrients, minerals, and organic matter within the soil.

Portions of the property were used as pasture and evidence of plant species indicate portions were overgrazed. Soil samples B, C, D, F, and G were extracted from pasture land. Sample A was extracted from open land just south of a fertilized hayfield. Sample E was extracted from a two-year old clearing in the woods.

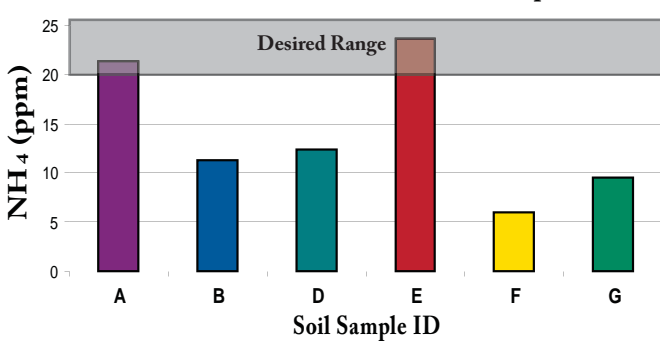
The high quality of sample A may be explained by manure nutrients leaching from the upslope hayfield and depositing downslope. Another explanation may be that the soils have been undisturbed by tilling, overgrazing, or other farming practices

Calcium levels correlate with pH levels. Samples with the highest calcium levels also have the highest pH. Sample E was extracted from a conifer stand and the low pH is most likely caused by the decomposition of conifer needles.

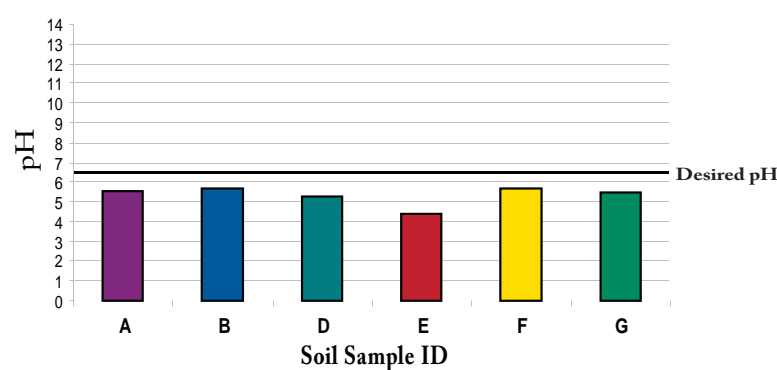
Overall, soil composition and nutrient cycling can be improved by amending with composted organic matter. To some extent, soil amendment can also help buffer against the low pH and improve the cation exchange capacity. However, a selection of drought and acid-tolerant plants will improve plant performance and will develop a more sustainable garden.

## Soil Nutrients

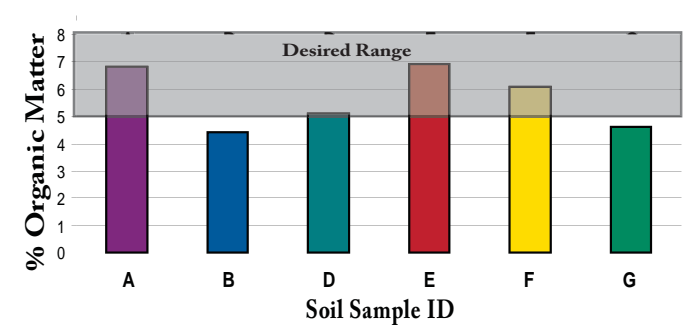
NH<sub>4</sub>, Ammonium Within Soil Samples



Soil pH

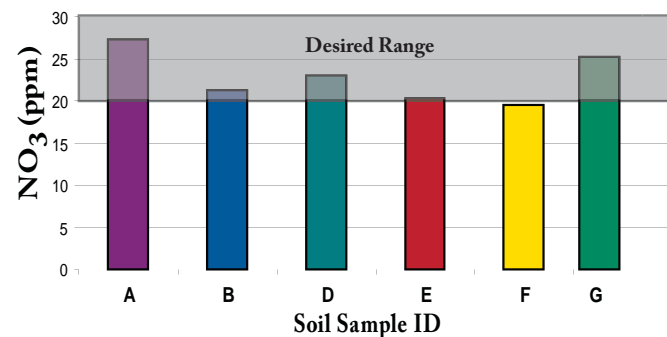


% Organic Matter Within Soil Samples

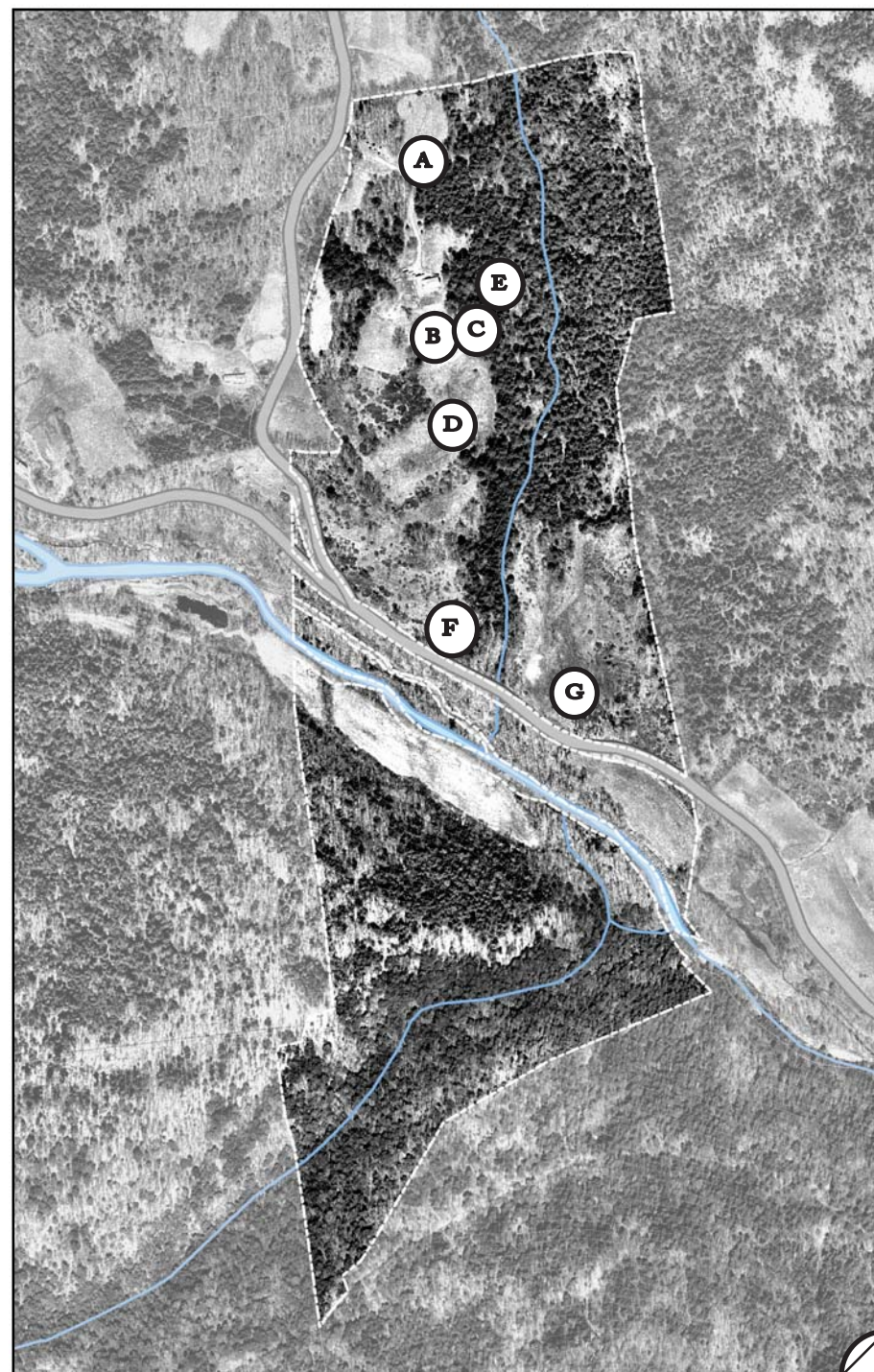


## Trace Minerals

NO<sub>3</sub>, Nitrate Within Soil Samples

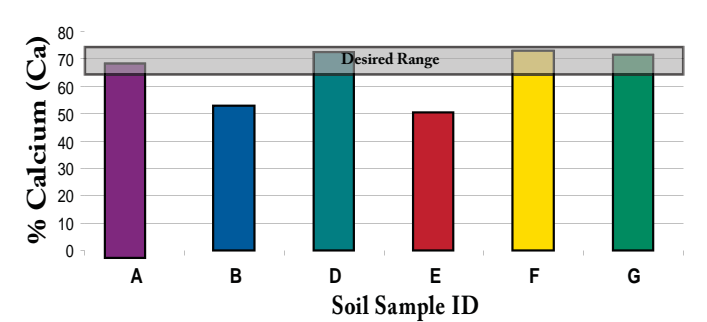


Soil Sample Locus

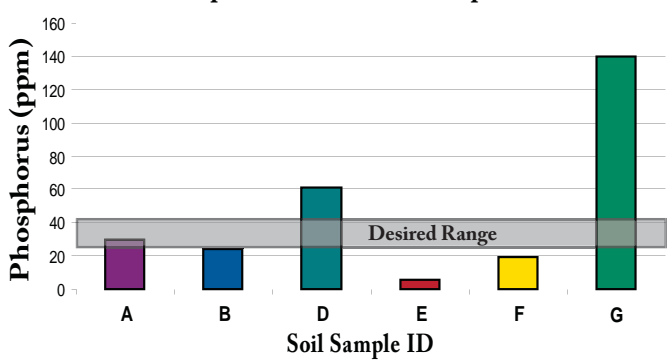


Source: Massachusetts Geographic Information System

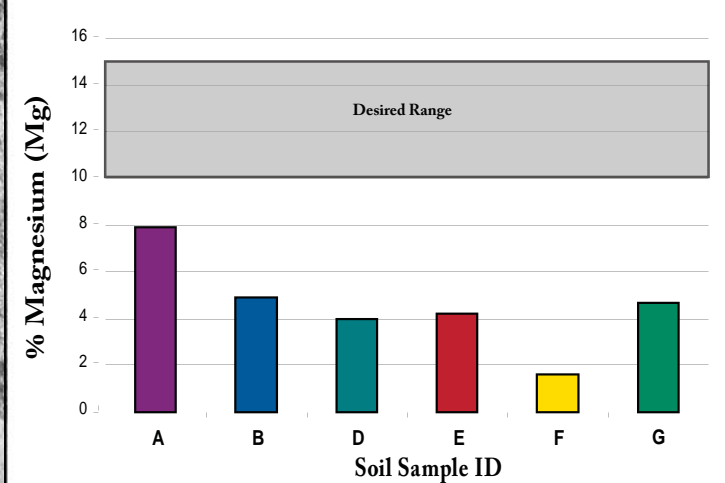
% Base Saturation of Calcium Within Soil Samples



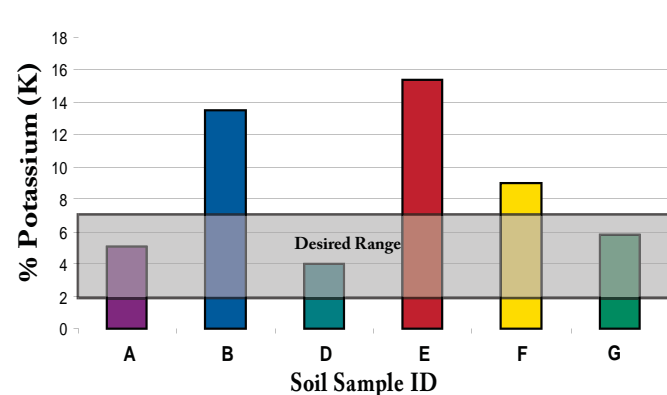
Phosphorus Within Soil Samples



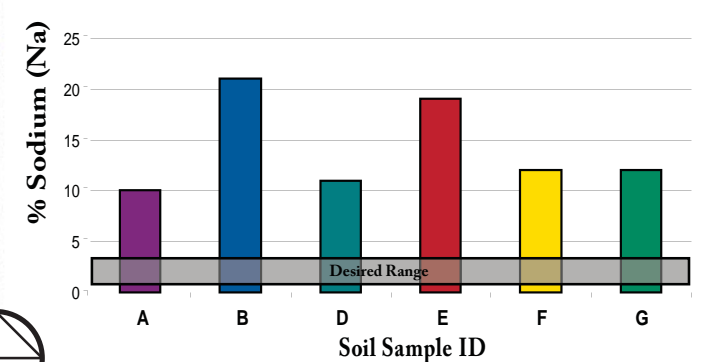
% Base Saturation of Magnesium Within Soil Samples



% Base Saturation of Potassium Within Soil Samples



% Base Saturation of Sodium Within Soil Samples



# Soil Composition (See Also Appendix B)