

Fact Sheet #3 Looking for Land

Climate

Generally, Massachusetts has cold winters and moderate summers. However, the climate varies between the eastern and western sections of the state, with the Berkshires in the west being coldest and average temperatures increasing as you move east. The Massachusetts Department of Agricultural Resources (MDAR) has collected a number of weather-related resources on their [website](#). MDAR can also be reached at (617) 626-1700.

Climatic factors that impact crop growth include minimum temperatures, frost-free dates, growing degree-days, precipitation, air flow, and wind exposure. The Massachusetts growing season is relatively short, presenting a challenge to many farmers. In

general, the last frost occurs in early to mid May and the first frost of the winter happens in October. Increasingly unpredictable weather patterns and severe events pose even more difficult challenges to farmers.



Soil

Soils vary based on region or even location within a farm. In fact, soil type and quality can vary greatly even within a small area. In general, Massachusetts soils are characterized by having more mineral content in the highlands and more organic matter in the lowlands. The most fertile region is the Connecticut Valley in the west-central part of the state.

The information collected in a soil survey helps in the development of land-use plans and evaluates and predicts the effects of land use on the environment. It can help you determine the potential uses and limitations of your land. Fortunately, even poor quality soils can be improved through management practices.

A soil survey:

- Describes the characteristics of the soils in a given area
- Classifies the soils according to a standard system of classification
- Plots the boundaries of soils on a map
- Makes predictions about the behavior of soils

A soil survey also provides specific information on:

- Climate / precipitation of an area
- History and development
- Physiology, relief, and drainage
- Geology
- General facts about the soil (slope, stoniness, salinity, wetness, degree of erosion, texture, and other characteristics that affect its use)
- Principal hazards and limitations in planning for specific uses (including agriculture)

Soil Survey

To learn about the soil types on your property, a useful tool available in almost all Massachusetts counties is the USDA-NRCS Soil Survey that consists of soil maps and descriptions of landscape characteristics and capabilities. You can find a copy of the Soil Survey at county offices of USDA-NRCS or Soil and Water District.

The screenshot shows the top portion of the USDA-NRCS Web Soil Survey website. At the top left is the USDA logo and the text "United States Department of Agriculture" and "Natural Resources Conservation Service". The main header features the text "Web Soil Survey" in large yellow letters over a background of soil samples and a small plant. Below the header is a navigation bar with links for "Home", "About Soils", "Help", and "Contact Us". A breadcrumb trail indicates "You are here: Web Soil Survey Home". On the left, there is a search box with the text "Search", a "Go" button, and a dropdown menu for "All NRCS Sites". Below the search box is a "Browse by Subject" link. In the center, there is a large green circular button labeled "START WSS" with the text "The simple yet powerful way to access and use soil data." and "Start the Web Soil Survey Application" below it. On the right, there is a "I Want To..." section with a list of options: "Start Web Soil Survey (WSS)", "Know the requirements for running Web Soil Survey", and "will Web Soil Survey".

Soil maps can also be viewed [online](#) through the USDA Web Soil Survey – click on the green “Start WSS” button. This interactive map feature allows you to search by address or browse by town, region, state, etc. Once you find the area you would like to learn about, select your “area of interest” [AOI] and click on the “soil map” tab. Once you have got your map, you can click on the map unit names listed on the right to get details on soil type, slope, elevation, landforms, water resources, temperature, and precipitation.

This is a great resource for doing initial assessments of the land and understand its soil characteristics and use potential before visiting and can help save time during your search.

Soil Testing

The UMass [Soil and Plant Tissue Testing Lab](#) will test soil for nutrients and pH to help determine amounts of lime and fertilizer needed for crop growth depending on what you intend to plant. Soil samples can be sent or taken to West Experiment Station in Amherst. The soil test order form provides clear instructions on taking a soil test and asks for specific crops that you grow. The more detailed information you provide, the more the results will be tailored to your unique needs. If you plan on using organic methods, note this on the form, as it will affect the advice given. To access the order form and additional information, call [413] 545-2311. The website includes a fact sheet on interpreting the results of your soil test.

It is typically best to do a soil test in late October or early November. Try not to sample the soil when it is very wet or has recently been limed or had fertilizer applied to it. Soils that appear different from one another should have separate samples, as should those where you have seen poor growth.

Soils vary in their properties and influence what crops will grow. Important soil characteristics include:

- texture (the percent of sand, silt or clay particles that make up the soil, as shown in the soil texture triangle to the right)
- pH (acidity or alkalinity of the soil)
- fertility (nutrients available for crop growth)
- drainage

Select the best soil possible for high value specialty and agronomic crops; for hay or pasture, soil quality is slightly less critical.

