

The Keuka Lake Book

Chapter 8

Sustainable Lawn and Garden Management

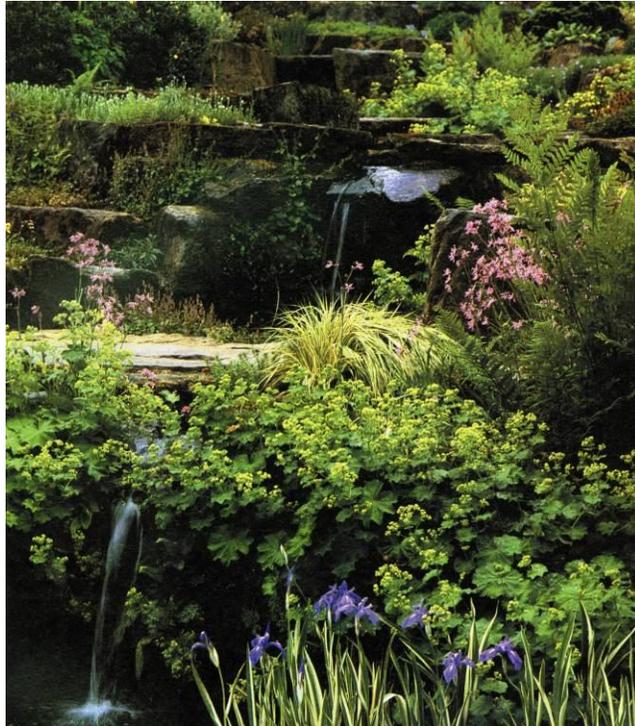
The lawns and gardens that surround our homes provide great aesthetic value and enjoyment. Creating a well manicured lawn and gardens is a great investment for many homeowners.

Maintaining lawns and gardens can be costly, time consuming and can also have negative impacts on the environment if done improperly. Traditionally, homeowners have been liberal in their use of synthetic pesticides and fertilizers. This practice is detrimental, especially in the Keuka Lake watershed where water is drawn directly for domestic water supplies. Residents within the watershed often do not realize that the rainwater that falls on their homes, lawn, gardens and driveways eventually runoff the property and potentially finds its way into the lake. With improved management strategies available it is time to reconsider how we plan and manage our lawns and gardens to minimize the amount of runoff that goes into our lake and to overall have a more sustainable system.

What Are The Benefits of Sustainable Lawn and Garden Management?

By changing a few lawncare management strategies homeowners can save time, save money and protect the environment. For example, one pound of phosphorus fertilizer running off the lawn and into the lake can support the growth of 500 pounds of aquatic plants that could threaten the

quality of the lake. Sustainable landscapes and gardens utilize plants that need less maintenance, resulting in time saved. In addition, homeowners will eliminate unnecessary chemical and water use, resulting in money saved. Most importantly,



homeowners who choose to practice sustainable lawn and garden management will be protecting the environment. They protect the environment by conserving water, keeping their water supply clean and free of chemicals and by recycling their yard wastes instead of sending it to a landfill.

By just changing a few simple management decisions, your lawn and garden will look just as nice, however you will have the satisfaction of knowing you saved time, money and the environment.

How Does Sustainable Lawn and Garden Management Work?

Managing your lawn and garden in a sustainable manner truly takes no more time than the alternative and is relatively simple. Sustainable lawn and garden management includes four components:

1. Proper site assessment and plant selection
2. Maintaining and building soil health
3. Efficient watering
4. Integrated pest management

Proper Site and Plant Selection

We have all seen the consequences of a landscape that did not have a proper site assessment. For example, pine trees planted directly under utility wires that had to have the tops cut off when they reached full maturity; or the salt burned plants on the edges of roads, driveways and sidewalks. These circumstances could all be avoided with proper site assessment. A site assessment involves collecting data about the physical characteristics of your lawn or garden before planting anything. There are seven components to a proper site assessment.

1. Sketch the property

First, determine the physical size of your lawn or garden. By knowing the area of the lawn or garden you can make more informed purchases when buying seed, plants, fertilizer, compost, mulch and building materials. It is also beneficial to know the dimensions of the structures on your property in relation to the lawn and garden. Make a quick sketch of the property that includes dimensions of the open space and structures.

2. Locate the obstructions

Plot the location of above and below ground obstructions. Take measurement of the height of utility wires. Identify where there are underground wires and where septic systems and leach fields are located. Add these locations to the sketch of the property.

3. Determine areas of sun and shade

The south side of your property will get the most sun. On your sketch note the areas that receive full sun, partial sun and full shade. Vegetable gardens need full sun, while shaded spots can be filled with horticultural plants that tolerate and or need shade.

4. Determine the Hardiness Zone

In lawn and garden management the term hardiness refers to a plants ability to endure cold temperatures. Generally to the north of Keuka Lake is hardiness zone 6a and to the west, east and south of Keuka Lake is hardiness zone 5b. Refer to the USDA Hardiness Zones for New York map to determine your exact zone. This will guide you when selecting plants in the future. Take note that there may be microclimates on your property. Areas close to your home may be protected from the wind, or more heavily shaded resulting in a different climate than the surrounding area. Map these areas on the sketch of your property.

If you are in a location with high wildlife pressure (deer, rabbits, woodchucks, etc.) you may have to select plants that are not preferred by wildlife, or invest in other control measures like a fence to keep unwanted animals out. To

determine wildlife pressure present on your property be observant. Is it common to see deer close to your home? Placing a couple fresh cut apples in your lawn and then examining the damage may help determine the pest pressure.



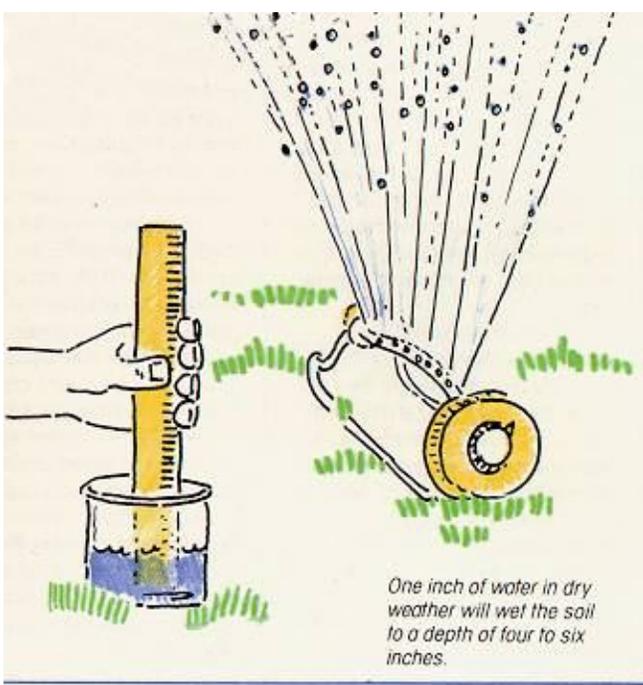
5. Determine Soil Characteristics

Soil is the most important component of a successful garden. Unfortunately the soil close to homes is mistreated during construction and usually is not of the highest quality.

Begin by examining the physical property of your soil. A flat or steep slope will affect the amount of water your plants get. Soil that has had a lot of foot traffic or heavy equipment on it will be heavily compacted. If it is easy for you to stick a pointed shovel into the ground when the ground is not frozen then you can assume you have little or no compaction. If it is difficult or impossible for you to insert the shovel into the ground then plants in that location will have the same problem when trying to extend their roots. The last physical characteristic to look for is soil drainage. This refers to the soils ability to

let water soak in. If after a rain, you have water standing on your property for a period of time, then you can assume there is bad drainage. In sandy soils there can be too much drainage and plants put in that location will need to be watered frequently.

After examining soil compaction, slope and drainage, there are some chemical factors to consider such as the nutrient content of your soil and the pH. Your local Cornell Cooperative Extension office can provide you with the information needed to collect a proper soil sample, in addition they will guide on how to submit your sample for analyses and then interpret the results. This analysis will guide you in plant and fertility choices. The soil analysis also measures the pH of your soil (the pH is a measure of the soil acidity). Some plants have special pH requirements; for example blueberries thrive only in acidic soils.



With a complete site assessment you have the baseline to create a budget and time-friendly beautiful garden or lawn!

Maintain and Build Soil Health

The completed site assessment provides a great deal of information about your soil. Whether the results stated that you had a good or bad soil, there is always room for soil improvement. The table below lists characteristics of healthy soil.

Top Ten Characteristics of a Healthy Soil
1. Good soil tilth
2. Sufficient soil depth
3. Sufficient supply of nutrients, but not an excess
4. Low population of pests and pathogens
5. Good soil drainage
6. Large population of beneficial organisms
7. Low weed pressure
8. Free of chemicals and toxins
9. Resistant to degradation
10. Resilient in unfavorable conditions
<small>Cornell Soil Health Assessment Training Manual, 2009</small>

As you begin to build soil health you will notice improvement in these ten components. For example, if you started off with a compacted soil you will see it become looser over time, allowing plants to send their roots deeper into the soil.

The soil analysis from your site assessment will tell you exactly which nutrients your soil needs. Synthetic chemical fertilizer can be used; however their high concentrations make them more risky to use, especially in sensitive areas like the Keuka Lake watershed. Other products that will deliver the nutrients you need, and are less risky, include compost, composted manure and cover crops.

Compost can be made out of your household food scraps and yard waste. For more information on making your own compost please contact your local Cornell Cooperative Extension Office. Compost can be made at home or bought at local gardening centers. Apply a layer of compost one to three inches thick on gardens and incorporate the compost by digging or rototilling it in at a depth of six to twelve inches. Your lawn can be top dressed with compost with a quarter to half inch of compost every spring.

Mulching is great way homeowners and gardeners can improve the health of their soil. Mulch is a layer of organic materials such as leaves, aged wood chips, compost or grass clippings that you spread in the spring and fall around existing plants or in the garden. On flower beds and gardens use one to three inches of mulch. Mulch can also be used on trees, shrubs and woody perennials. On these woody plants use 2-3 inches of woody mulches, being sure to keep mulches away from plant stems and trunks to prevent rotting. Lawns can also be mulched by leaving the grass clippings on the lawn after mowing. The grass clippings quickly

decompose, releasing nutrients that the soil will use to keep grass healthy!

Maintaining the health of your soils is a continuous process. It begins with knowing your soil through soil analysis. Adding compost and organic materials will fertilize your lawn and garden in a natural and sustainable way. Within a few short seasons you will begin to see all the properties of healthy soil that results in green lawns, beautiful flowers and quality produce.

Efficient Watering

The Finger Lakes region residents are fortunate to have an abundant supply of water, particularly if you have access to the lake. That does not mean it is economically or environmentally sound to use water in an irresponsible manner. Watering too much or too little is actually one of the most common causes of plant health problems. By learning to water your garden and lawn efficiently you can have healthier plants, save money and conserve precious water resources.

It all begins with planning. When selecting plants, choose plants that are native and do not require extra water. Fertilizing your soil with compost and mulch will help increase the water holding capacity and will reduce evaporation of water.

When it comes to watering, most plants actually do best when the soil is allowed to dry out between watering. Over-watering is one of the most common mistakes in home lawn care. The best time to water is in the morning. The taller your grass becomes, the deeper the root system that grass will have to develop to obtain water and nutrients. Another way to encourage deep roots is to water your plants deeply and infrequently. The soil should be moistened at a depth to four to six inches during long periods of dry weather. The rule of watering deeply and infrequently also applies to vegetable gardens. Encouraging the roots of the vegetables to go deep will make them healthier and ultimately they will require less water. Using a soaker hose or drip irrigation in the garden or in flower beds can save 50% of the water when compared to sprinklers. Trees and shrubs that are at least 2-5 years old and are fully established do not need to be watered.

Make every drop count! Only water when plants need it. After dry spells, do not water often and

when you do water, give the ground enough water so that the moisture permeates deeply.

Integrated Pest Management

Even with the best site plan, richest compost and best watering practices, pests can damage lawns and gardens. Integrated pest management (IPM) is a holistic approach to pest control. The site plan and planning process in general is the beginning of pest prevention. These preventative measures include avoiding planting, or replacing any plants that attract disease, insect or vertebrate pests. Use a variety of plants so that if a pest does attack, your whole garden is not at risk.

Weeds will be the biggest trouble. Mulching will help reduce weed invasions. Pulling weeds before they produce seed will lower your weed seed population over time. To reduce disease pests from entering your lawn, garden or flower bed, it is good to have appropriate spacing between plants to allow for good air circulation. When plants do die, remove them so they do not act as a host for more disease.

If these preventative measures do not work, then there are reactive steps that can be taken. Before deciding to take control measures it is important to identify the pest you are going after. Whether it is an insect, disease or weed, you need to identify it in order to control it properly. In many cases plant health is not the result of a pest but because of a cultural practice, such as not enough water, nutrients or improper pruning. To obtain help to identify plant health problems contact your local Cornell Cooperative Extension Office.

Once the insect is identified, there are many options to control it. In gardens, the crops can be rotated to break the disease cycles. Fabric row covers can be used to prevent disease from landing on plants and organic and plastic mulches can be used to keep weeds down. Pesticides should serve as a last resort. Pesticides should be handled with care according to the label when purchasing, applying and storing these chemicals. Also be mindful that some pesticides have the potential to kill beneficial insects like lady bugs and the praying mantis. These beneficial insects actually keep pest insect, like aphids, in low numbers.

Be mindful of your impact beyond your property. It is best to just mimic the laws of nature. Remember there is no one out fertilizing and

watering trees and plants in the wild, and they are often are the most magnificent! By practicing sustainable lawn and garden management you will be mimicking nature, saving money, enjoying a beautiful landscape and ultimately protecting the natural resources of the Finger Lakes.