

Use Compost to Protect Your Land and Water

Lakeside and riverbank property owners often face problems with erosion. Planting trees and shrubs on the shoreline will prevent this problem. The plant roots collect sediment. The leaves on the vegetation absorb the energy of falling rain, reducing its erosive impact. Less sediment running off into the water means better water quality. Compost will not wash away easily like topsoil and plants grow quickly in it.

Rain washes fertilizers and other chemicals into nearby streams and rivers that eventually end up in lakes. People living next to water should be especially conscientious about what is used on the land because the run-off goes directly into ground and surface water. Using compost on your lawn and in your gardens will give you healthy, nutrient-rich soil. The nutrients in compost are released slowly and are less likely than fertilizer to leach into water sources.

How to Use Compost

This brochure covers the following topics:

1. Erosion Control

A. Vegetative Buffer Strips

B. For Eroded Slopes

C. Filter Berms

D. Tree and Shrub Planting

E. Mulch

2. Nutrient Run-off Prevention

A. On the Lawn

B. In the Garden

3. Pesticide Use Reduction

Compost Quality

The compost you use should be of good quality whether it was purchased or produced yourself. Good quality compost is mature. It will not reheat if you add water to it or turn it. It should be a dark color, of humus-like quality, and have a pleasant soil smell.



If you produce your own compost, you can make sure it is of good quality by using the right mix of greens and browns, and keeping the moisture level at that of a damp sponge. Meat, dairy and greasy foods should be avoided. Also, avoid items such as diseased plants and pet feces. High temperatures are needed to kill pathogens and weed seeds.

When purchasing compost, it is best to buy from companies with known feedstocks (ingredients). There are currently no requirements for labeling compost and few regulations regarding compost quality. Good compost companies will provide the buyer with a typical analysis of finished compost. Of particular importance in compost are the pH and the salt content. If the pH level or salt content is high, it can stunt plant growth.

Do not use compost made from municipal sludge for food gardens unless it has consistently tested free of heavy metals and pathogens. When used on non-food items, application rates should not exceed 4 cubic yards per 1,000 square feet unless another rate has been determined safe by the testing. This limit has been established to minimize environmental risks.

1. Erosion Control

A. Vegetated Buffer Strip

The best way to prevent erosion of a shoreline or riverbank is to plant a vegetated buffer strip. This is a minimum of 25 feet of natural vegetation, including trees and shrubs, that is not mowed (100 feet is best). The vegetation will stabilize the bank or shoreline by absorbing rain, waves, and run-off, and prevent sediment from washing into the water. Strips of undisturbed vegetation, including trees, along streams and lakes also provide a cover for fish and wildlife on the shoreline, and create a bit of privacy on your property.



B. Tree and Shrub Planting

Mix compost with soil from the hole for planting the tree. The mixture should be about 1/3 compost and 2/3 native soil. Use this to fill in the hole around the root ball or bare root. Water and keep moist for several weeks.

C. Mulch

In early summer put a 2 to 6 inch layer of coarse compost on soil around trees and plants for mulch. This will help conserve water and protect against soil erosion. It will also help prevent weeds, reducing or eliminating the need for herbicides. Compost made from woody materials works best. The mulch should not be spread directly against the tree trunk. Apply a 2 inch layer about 6 inches from the trunk and out past the drip line.



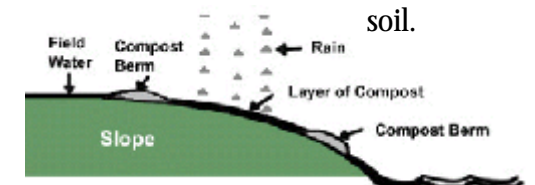
D. For Eroded Slopes

Compost made from woody material and yard waste has large particles that can immediately stabilize steep slopes. It can be applied any time of the year, since its water holding capacity and coarseness will provide stability even before plant growth.

Nutrients in compost are released slowly and contain microorganisms that aid in establishing vegetation. Apply a 3-4 inch layer of compost evenly over the eroded surface (400-540 cubic yards per acre). It can be applied on up to a 2:1 slope. Apply the compost 3 feet over the top of the slope to prevent water running between the soil and compost layers. Track down the compost with a lawn roller or tractor. An alternative is to use netting or burlap, or lightly water the slope well to settle the compost.

E. Filter Berm

To control silt from run-off, construct a berm of compost along the bottom of the slope. It can be up to two feet high with a four foot base depending on the steepness of the slope. Berms are more effective than silt fences. They can be spread on the slope when they are no longer needed. If desired, when the berm is no longer needed it can be spread on the slope to further improve the soil.



2. Nutrient Run-off Prevention

Nutrient run-off is a big problem in many watersheds. Too many nutrients cause overgrowth of plants in rivers and lakes. Though farming can have a significant effect, studies have shown that homeowners add large amounts in their ambition to have dense lawns and showy gardens. The use of compost can greatly reduce or eliminate the need for additional fertilizers. Compost releases nutrients slowly, so they are less likely to leach away before the plants get to use them. Because compost absorbs water better, any fertilizers that are used are more likely to remain in the soil.

A. On the Lawn

To establish a new lawn spread 4 to 6 inches of compost on the soil and till it to a depth of 5 to 8 inches. For an existing lawn, apply a thin layer (1/8 - 1/4 inch) of fine compost on the lawn and water it well. This can be done at any time of the year. It

will improve nutrient levels and reduce watering needs. To fill in bald spots create a mixture that is 30% compost, 60% topsoil and 10% grass seed.

Then spread a 2- 4 inch layer over the bald spot and water thoroughly. For larger areas, use a rake or rotary mower to spread it evenly into the crevices. This will provide moisture and nutrients to the grass and prevent soil compaction.



B. In the Garden

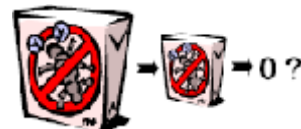
Add finished compost to your garden each year in spring or early summer before planting. Till the soil to a depth of 8 to 10 inches. Apply 4 inches of compost on top of the soil then till it again to mix it. If the soil is very poor, you can add more. Don't worry about adding too much compost. Compost releases nutrients slowly and continuously and will not damage plants. Throughout the growing season you can add a sprinkle of compost mixed with soil as a top dressing. A 1 inch layer of immature compost can be applied in the fall and tilled in the spring.



3. Pesticide Use Reduction

Another benefit of using compost is plant disease suppression. In order to have disease preventing properties, the compost must be stable and well decomposed but not overly aged. High temperatures during the composting process kill pathogens and weed seeds. The microorganisms in compost are antagonists of plant pathogens as well. Adding organic matter to soils also encourages other beneficial soil pathogens. Soils lacking organic matter have low energy reserves for microorganisms and are susceptible to developing soil-borne diseases.

Healthier soil means healthier plants, which reduces the need for pesticides.



Resources:

Local Planning and Zoning Options for Water Quality Protection. Vermont ANR Water Quality Division. © October 1999.

Planning for Lake Water Quality Protection. Vermont ANR Water Quality Division. © 1990.

Also read ANR's brochure, "Compost Uses Every Homeowner Should Know"

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<http://www.nebhe.org/env.html>

For more information about compost and compost use go to the ANR web page at www.anr.state.vt.us/compost

Clipart Courtesy of the United States Compost Council and other web and program sources.

Compost Uses for Lake Shores and River Banks



State of Vermont
Agency of Natural Resources
Compost Center