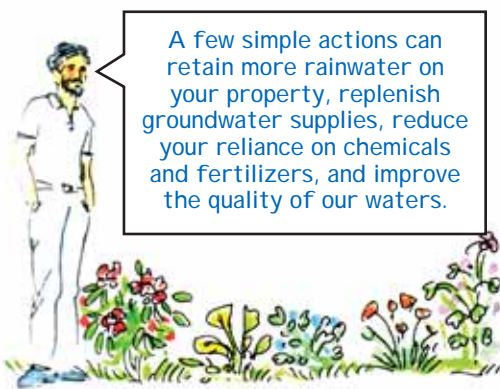


Landscaping for Healthy Watersheds



From the bluff at Nauset Heights to the sand flats of Skaket, from the Cape Cod Bay marshes to the dunes of Nauset Beach, from the hills of Tonset to the shores of Pleasant Bay, most of the rainfall that reaches this area eventually finds its way into our ponds, lakes, and bays. We can manage this flow and keep our waters clean by landscaping wisely.

Thoughtful landscaping can change the volume, velocity and quality of the water that flows from our properties. Trees, shrubs, and groundcover which enhance the appearance and value of your property also help reduce runoff, which transports excessive sediments and pollution to local waters.



A few simple actions can retain more rainwater on your property, replenish groundwater supplies, reduce your reliance on chemicals and fertilizers, and improve the quality of our waters.

Getting Started...

If you are building a new home, retain as much of the native vegetation as possible. This will not only reduce runoff and pollution, it will give you a head start on your final landscaping and may save you money. Before you start work on the site, consult your local town conservation commission to learn if there are guidelines governing landscaping in your location. They can provide you with lists of native plants for your planting conditions, suggestions for Cape Cod landscapers and designers, and places to buy native plants for your property.

Lawns do not belong next to water; wetlands regulations control the cutting of vegetation adjacent to water bodies. If you abut a pond, stream, or estuary, it is particularly important to leave a vegetation buffer to absorb excessive runoff and prevent erosion. Without a buffer, nutrients transported from the land flow directly into the waterways, stimulating excessive proliferation of algae and seaweeds. These plants can dramatically reduce oxygen levels in the water, making it impossible for the local fish and shellfish to survive. Vegetative buffers also provide natural habitat for native insects and animals.

Well-planned landscaping offers other benefits. You can reduce your heating and cooling costs by as much as 30% just by planting and clearing wisely. Trees, shrubs, and groundcover also attract wildlife and require much less maintenance, fertilizers, and pesticides than grass.

Appropriate Plants for Lower Cape Landscapes

Before you head to the nursery, consider the growing conditions that define your land. Different plants require different kinds of soil, nutrients, and exposure to the sun. Parts of your property may also be subject to wind, foot traffic, or salt spray.

Check the soil. Plants that require good drainage grow well in sandy loam. Clay holds water so plants that like constant moisture thrive in it. You can guess your soil type by taking a handful of moist soil and squeezing it into a ball. If it holds together slightly before breaking up, you have sandy loam. If it stays together, you have clay or a clay blend. Better yet, have soil samples tested for type, pH (acidity), nutrient availability, and mineral content. Check the Resources Chapter for information and kits for soil testing.



Better to choose plant varieties that thrive in our climate zone.

How to Choose?... Go Native!



Matching the needs of your plants to the conditions of your landscape decreases the need for extra water and fertilizer and increases your plant's resistance to disease and pests. Plants native to the Cape are well adapted to our climate, soil, and water supply; they are less bothered by salt, disease, and pests than plants introduced from other areas. Visit your local conservation commission or garden clubs to obtain lists of native plants suitable for planting in our area. Other sources of information include the Heritage Plantation Museum and Gardens in Sandwich, Cape Cod Museum of Natural History, National Seashore Visitor

Center, Mass. Audubon's Wellfleet Bay Wildlife Sanctuary, and the Cape Cod Cooperative Extension office of the University of Massachusetts; all these locations provide additional publications. Local nurseries will help you select plants appropriate to your yard and soil type.

Plants to Avoid

Some plants introduced to the Cape are invasive and spread quickly, choking out the indigenous plants. These include autumn olive, purple loosestrife, pampas grass, porcelain berry, phragmites, Asian bittersweet, Japanese knotweed, knapweed, Japanese honeysuckle, Scotch broom, tree of heaven, multiflora rose, bamboo, and barberry. (For a complete list, see the Invasive Species Brochure on the Orleans Town website.)



Gardening

Whether our garden is in a window box or on a large farm, many of us enjoy growing our own vegetables, fruits, flowers, and herbs. By using effective gardening techniques, we can produce plants to be proud of while preserving the soil, enhancing the absorption of rainfall, and protecting local streams and ponds from sediments and chemicals.

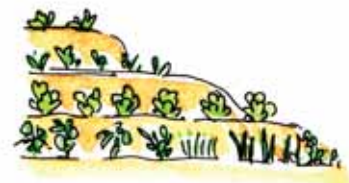
Start by picking the right spot for planting. Choose a sunny location with good natural drainage. Whenever possible, avoid sloping areas and drainage channels that let topsoil wash away during heavy rains.

If your garden is on a slope, use the same techniques that farmers use on hilly fields. Terrace the site or plant across the slope, not up and down the hill. Each terrace or row helps keep soil and plant nutrients from washing downhill. On long slopes, it's a good idea to leave strips of groundcover or grass running across the slope. This will slow the flow of runoff, allowing it to soak into the soil. Make your strips wide enough to allow easy access to your plants and vegetables.

Mulching

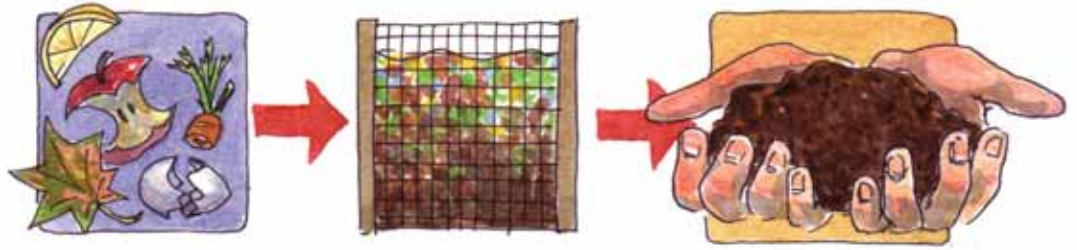
Mulch is a protective covering of compost, straw, grass clippings, or leaves placed around plants, although many also like to use seaweed. Mulch can add nutrients, make the soil more workable, aid rainwater penetration, help control weeds, and improve the moisture-retaining capacity of the soil near roots. Mulch also minimizes losses of nutrients and topsoil.

Avoid using landscaping plastic beneath decorative rock or bark.



Composting

Compost is a dark, crumbly, and earthy-smelling form of decomposing organic matter. Perfect for mulch, compost enriches soil and improves plant growth. Composting is a practical way to transform yard, kitchen, and garden wastes into a valuable resource.

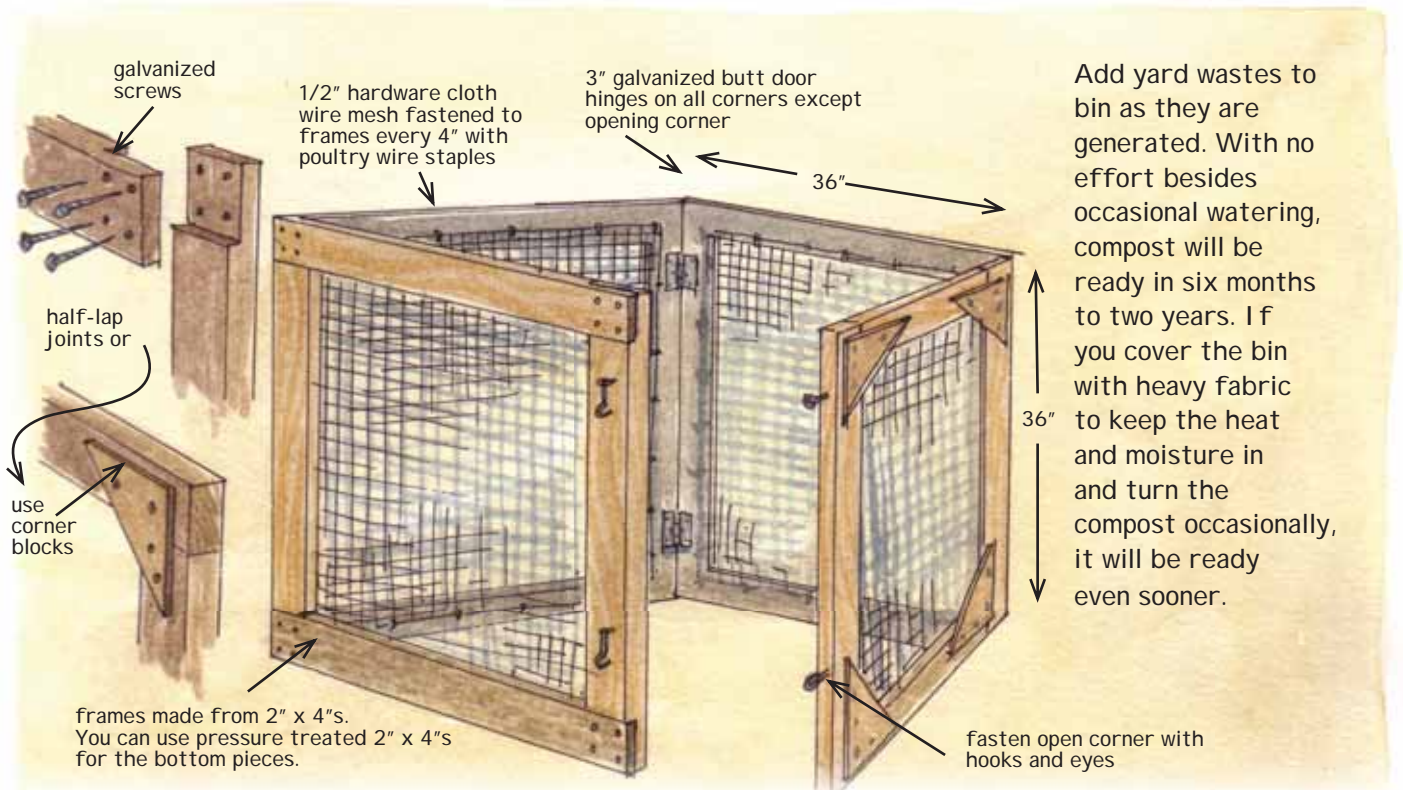


Leaves, cuttings and other yard wastes contribute some 10% to the average household's garbage. Since it is illegal to dispose of yard wastes near water bodies or by burning, (except at specific times of the year under certain conditions - check with the local Fire Department to obtain a permit) and because all Cape landfills are now closed, composting lawn and garden wastes has become the perfect way to save money and protect our environment. It is particularly damaging to dispose of yard wastes in or near shorelines and pond banks. The process of breaking down plant materials competes with aquatic animals for the limited oxygen dissolved in our waters. Some plant materials contain chemical components that can alter the balance in the marine environment. These unsightly wastes can create obstructions and dangers to boats, divers, and swimmers, and most often end up on your neighbor's beach. In Orleans, you can choose to compost these wastes yourself, or you can take grass clippings, leaves and pine needles to the Orleans Transfer Station for free with a Transfer Station permit; brush can be brought there for a fee. The town turns your yard waste into compost and mulch, which is available free to anyone with a permit. Homeowners should consider the option of creating their own compost system since composting is also the answer for up to 10% of your garbage created by food wastes other than meat, bones, and fatty foods.

A compost pile is really a teeming microbial farm that breaks down anything left over from your gardening activities. Great joy can be had from a properly working compost pile that produces wonderful soil conditioner from garden and household waste.

Many composting efforts, both large and small, are improved by using red worms that consume nitrogen. For more information on other compost designs or where to purchase worms, see the Resources Chapter.

A Simple Portable Composting Bin



Pest Management

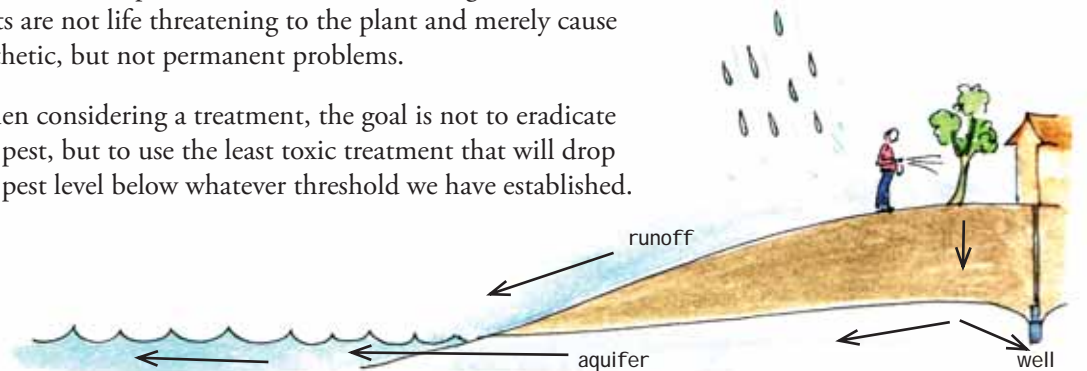
For years, pest control has meant chemicals. Once viewed as safe and effective for insect control, chemical pesticides are now considered ecologically harmful. They poison wildlife, contaminate water and soil, and harm humans, especially children, and pets. Many pesticides last a long time. When they enter the aquatic system, they can move from place to place, causing problems all along the way.

Pesticides poison wildlife and contaminate surface and groundwater.



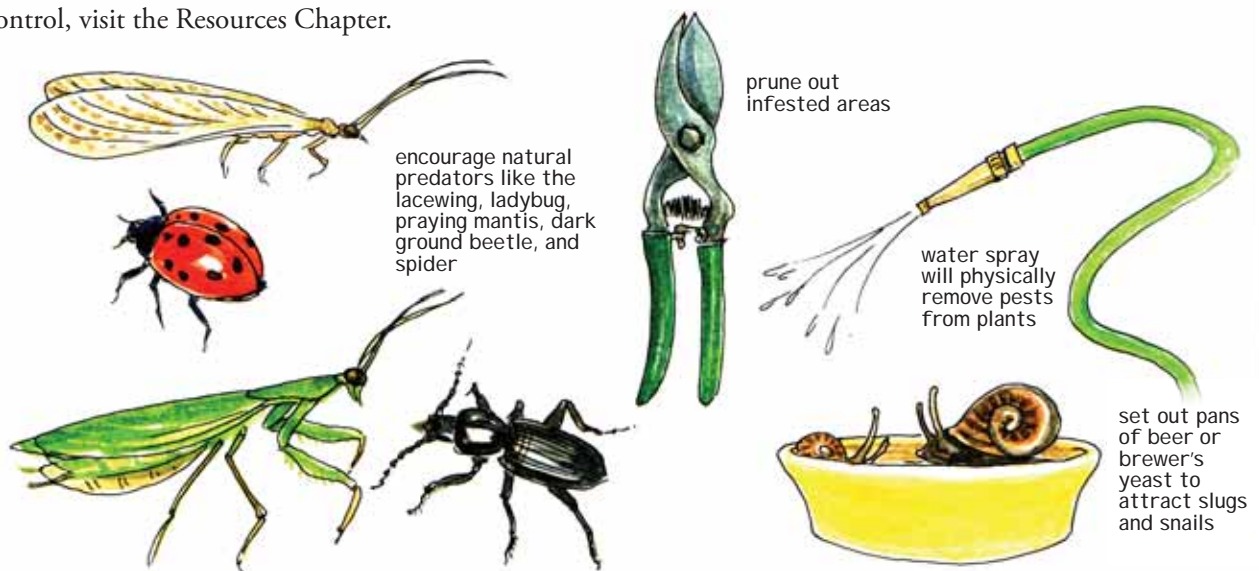
After planting adapted plant varieties, providing the necessary nutrients and moisture, and following through with good maintenance practices, gardeners should determine the threshold level of weeds or insect damage they are willing to accept. Setting our pest tolerance too low results in unnecessary treatments and possible environmental damage. Most pests are not life threatening to the plant and merely cause aesthetic, but not permanent problems.

When considering a treatment, the goal is not to eradicate the pest, but to use the least toxic treatment that will drop the pest level below whatever threshold we have established.



Here are some simple things we can do:

- Encourage natural predators like the lacewing, ladybug, praying mantis, dark ground beetle, and spider.
- Prune out infested areas.
- Use water spray to physically remove some pests from plants.
- Set out pans of beer or brewer's yeast to attract slugs and snails.
- Cut down on the number of mosquitoes breeding in your area by removing old tires and other areas of standing water.
- Avoid planting and harvesting when insects are most abundant and damaging.
- Buy plants that are resistant and free of pests and diseases.
- Provide plants with the growing conditions that they like best. This helps them resist pests and diseases.
- Remember that gardens with a variety of plant types are less susceptible to insect damage.
- Use organic products if possible. Your local garden center can suggest useful products.
- Encourage insect-eating birds by providing bird houses and baths. For more information on nontoxic alternatives to pest control, visit the Resources Chapter.



What Else Can I Do?

- Promote municipal composting.
- Request and buy organically grown food. This will help encourage the many farmers who want to use non-toxic pest control techniques.
- Find out how public areas are treated, for example, roadsides, municipal parks or golf courses.
- Research alternatives and suggest improvements through your local Conservation Commission, Highway Department or Parks Department.

Here are some simple things we can do in our houses and gardens...



Cape Cod Neighbor

Great Blue Heron: Walking in the Wetlands



That large graceful bird that you see walking among the marsh grass is undoubtedly a Great Blue Heron. Note its long legs and beak, grayish blue color, and its S-shaped neck. In flight, the heron's wingspan exceeds six feet from tip to tip. The Great Blue catches fish by standing quietly and then spearing them with its sharp beak. The survival of this beautiful bird relies on healthy wetlands.

Cape Cod Neighbor

Osprey: Famous Fish Hawk

A coastal superstar, the osprey's resurgence on the Cape is a success story. The osprey's decline resulted from the disruption of nesting sites and the use of the chemical DDT, which thinned their eggshells. With the banning of DDT and the construction of nesting poles, the population of ospreys has swelled to more than 10 nesting pairs in Orleans and adjacent towns. Ospreys rely on our waters for food and habitat. An osprey family of four requires more than six pounds of fish a day!

