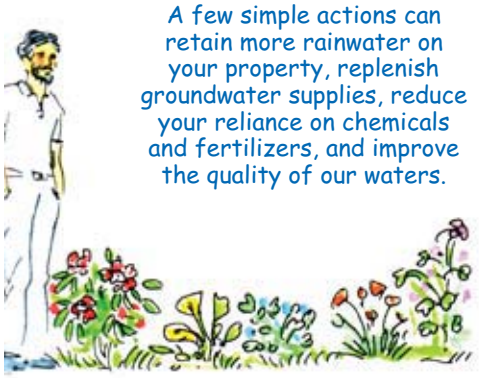
Chapter 8

Landscaping for Healthy Watersheds

From Great Hill through Lovers Lake and Stillwater Pond to Ryders Cove; from downtown Chatham and West Chatham to Oyster Pond, the Mill Ponds and Stage Harbor; from North Chatham to Pleasant Bay and Chatham Harbor; from Chathamport to Jackknife Cove, Bassing Harbor and Crows Pond; from Riverbay to Muddy Creek; from West Chatham to Taylor's Pond; and from South Chatham to Red River and Cockle Cove most of the rainfall that reaches this area eventually finds it way into our ponds, lakes, and bays. We can help manage this flow and help keep our waters clean by landscaping wisely.



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.

Thoughtful landscaping can change the volume, velocity and quality of the water that flows from our properties. Native trees, shrubs, and groundcover can enhance the appearance and value of your property while protecting biodiversity, providing food and shelter for wildlife as well as aiding in reducing stormwater runoff, which transports excessive nutrients, pollutants and sediment to local 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 a project, consult the Chatham Conservation Commission to learn if there are guidelines governing landscaping in your location or if a formal review by the conservation commission is required. The property owner is responsible for obtaining any necessary permits. The Conservation office can provide you with lists of native plants for your planting conditions.

Conservation Commission wetlands regulations control the cutting of vegetation adjacent to wetland resource areas – any unauthorized cutting may result in local/state fines. 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 of native plants also provide natural habitat for native insects and animals. A vegetated buffer strip of as little as 10' – 20' wide along a wetland or waterbody can help mitigate the effects of a fertilized lawn and managed landscape, trapping potential pollutants and nutrients. The wider the vegetated buffer, the more effective it is in protecting water quality and wildlife habitat.

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

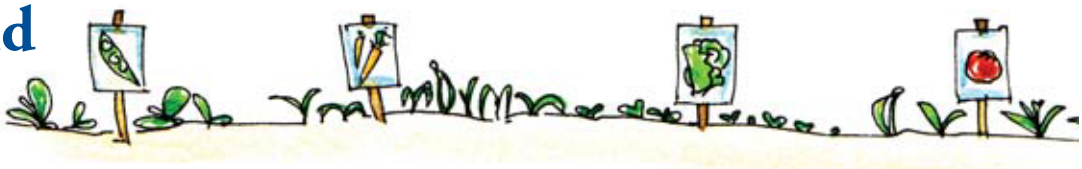
together slightly before breaking up, you have sandy loam. If it stays together, you have clay or a clay blend. Better yet, have soil samples tested for type, pH (acidity), nutrient availability and mineral content. Check the Resources Chapter for information and kits for soil testing.

Choosing the "right plant for the right place" is an important consideration for all landscaping. Careful planning and site evaluation are the first steps in applying this concept. The Cape Cod Cooperative Extension has a pamphlet addressing this important principle entitled "Right Plant, Right Place" – a Plant Selection Guide for Managed Landscapes which provides lists of different types of trees and shrubs suitable for the varied conditions found on Cape Cod (capecodextension.org/home).

How to Choose?... Go Native!

Matching the need 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. Native trees, shrubs, groundcovers, and grasses provide shelter, nesting areas and food for a variety of wild critters, including hummingbirds and butterflies. Visit Chatham Conservation Commission or Chatham Garden Club 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 Barnstable County Cape Cod Cooperative Extension office; all these locations provide excellent publications. Local nurseries will help you select plants appropriate to your yard and soil type.

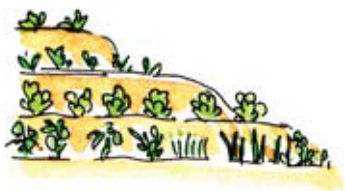
Plants to Avoid



Certain plants are considered harmful exotic invasives because they are aggressive competitors with a speedy growth habit, spread quickly either by seed or root, and have the ability to naturalize in wild areas and choke out indigenous plants. Commonly seen in Chatham are Autumn Olive, Purple Loosestrife, Porcelain Berry, Phragmites, Asiatic Bittersweet, Japanese Knotweed, Privet, Japanese Honeysuckle, English Ivy, Tree of Heaven, Multiflora Rose, Bamboo, Burning Bush, Scotch Broom, and Japanese Barberry. Foreign invasive species reduce the number of native species, change the physical structure of a habitat, disrupt the food web, and delay the long-term process of succession.

An example commonly seen at the edge of marshes is Phragmites or Common Reed. It is a particular enemy of salt marshes – because it spreads aggressively by above ground runners, its root system, as well as by seed, it chokes out diversity and causes the decline of many salt marsh species, habitat for many shellfish and finfish.

For a more complete list of invasive species, contact the conservation office or see www.ipane.org. Do not use these plants in your landscaping and before removing any vegetation within 100 feet of wetland resources, be sure to contact the Conservation Commission first.



There are aquatic invasive plant species that can impact waterways. These species include Eurasian Water Milfoil, Hydrilla and Yellow Water Iris. Eurasian Milfoil clogs waterways and is found in freshwater bodies. It can reduce oxygen and cause fish kills. Hydrilla is considered one of the top problem water weeds because it degrades the water quality, reduces oxygen and fouls waterways. To avoid spreading these invasives into waterways boaters should check to be sure that boating gear is free of plant debris. Never empty aquariums into waterways and use native aquatic plants in your watergarden. For more information: www.mass.gov/czm/invasives/index.htm

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 you live close to a dune or a coastal bank, it is important to protect these areas as they provide a buffer to waves-induced erosion and flooding. American beach grass works best within sandy dunes because it is tolerant of salt spray, exposure to wind and waves, and accumulations of sand, and it has a thick root system that help build up and stabilize windblown sediment. The roots of plants such as dusty miller, beach pea and seaside goldenrod also stabilize and build up sand dunes. Bayberry, Virginia rose and beachplum are good on back dunes and on the top of coastal banks as they are adapted to coastal environments and can tolerant to salt spray. As always, check with the Chatham Conservation Commission prior to undertaking new projects near the coastline to be sure you have the proper authorization.

If you are landscaping the area of your septic system it is important to know the exact locations of all the septic system components and to landscape it is such a ways that you don't need to dig up your entire garden if repairs are necessary. It is particularly important to use native plants to eliminate the need for watering which can interfere with the effective functioning of your leachfield. It is important to choose plants that have non-invasive roots and that provide coverage over your septic system throughout the entire year. Low maintenance ground covers or wildflowers or shallow rooted perennials are good choices. Check with the Health Department for a list of appropriate plants that can be used over leaching fields.

Watering

Water is crucial for good plant establishment. All newly planted areas need to receive approximately 1" of water per week during the growing season from April through October. By using native plants that are adapted to the sandy soils found on Cape Cod the need for watering can be largely reduced once the plant is established. Because the soils are so permeable and do not hold water well, plants that are not drought tolerant will require large amounts of water and will be more susceptible to insect and disease problems. A good two inches of mulch will help reduce the loss of soil moisture.

Irrigation systems require a permit from the Chatham Water Department and if the system is to be installed in an area under the Conservation Commission's jurisdiction, a wetlands permit will be needed as well. Irrigation should be planned at least 10 feet away from the edge of the leaching field of your septic system. If you already have an irrigation system, be sure it has a rain sensor to avoid unnecessary watering.

Using a water collection system, such as a rainbarrel, is a good way to obtain water while reducing your water bill. With an average of 28 inches of rain falling on a 1000 square foot roof, over 15 thousand gallons of rainwater can be generated during the growing season. If not collected this rainwater can runoff as stormwater possibly causing erosion and pollution and is not available to replenish the aquifer. Look for local or county programs where rainbarrels are offered at reduced price.

Mulching

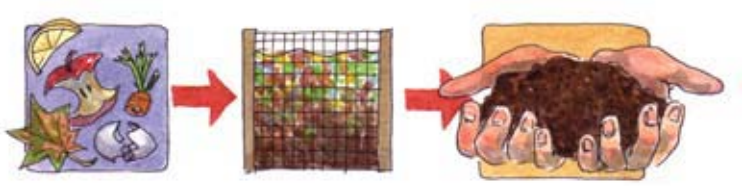
Mulch is a protective covering of compost, straw, grass clippings, or leaves placed around plants. Many homeowners also like to use seaweed. Mulch can add nutrients, make the soil more workable, aid rainwater penetration, help control weeds, and improve the moisture-retaining capacity of the soil near roots. Mulch also minimizes losses of nutrients and topsoil. Root zones of newly planted trees and shrubs should be mulched to a depth of about 2" to the drip-line, except for the area directly adjacent to the trunk.

Avoid using landscaping plastic beneath decorative rock or bark as it impedes the infiltration of rainwater into the soil.

Fertilizing

The watchword here is to use as little as possible, if any. Excess nutrients from fertilizer can leach through the soil into the groundwater, or may be washed by rain into storm drains. These nutrients can contaminate our drinking water and cause algal blooms in ponds and estuaries. By using good gardening principles, you can limit the amount of fertilizer. If you do find that additional nutrients are necessary to supplement the soil, chose an organic, slow-release, water-insoluble fertilizer and use sparingly or use compost from your compost pile or obtain free from the Chatham Transfer Station at 97 Sam Ryder Road.

Composting

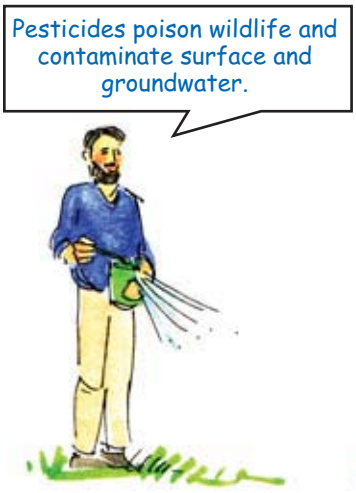


Compost is a dark, crumbly, and earth-smelling form of decomposing organic matter. Perfect for mulch, compost enriches soil and improves plant growth. Composting is a practical way to transform yard, kitchen, and garden wastes into a valuable resource.

In Chatham, you can choose to compost these wastes yourself, or you can take grass clippings, leaves and pine needles to the Chatham 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. Composting bins and kitchen scrap buckets are available to the public from the Town of Chatham at a bargain price through a grant from the MA Department of Environmental Protection; contact the Department of Health & Environment at (508) 945-5164 or the Transfer Station (508) 945-5156.

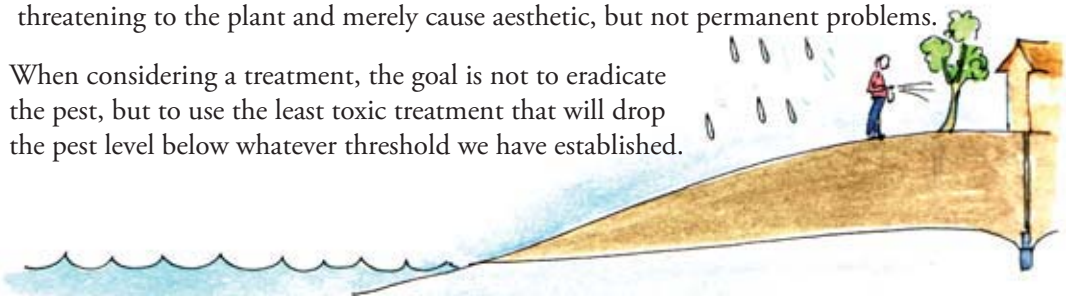
Pest Management

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.



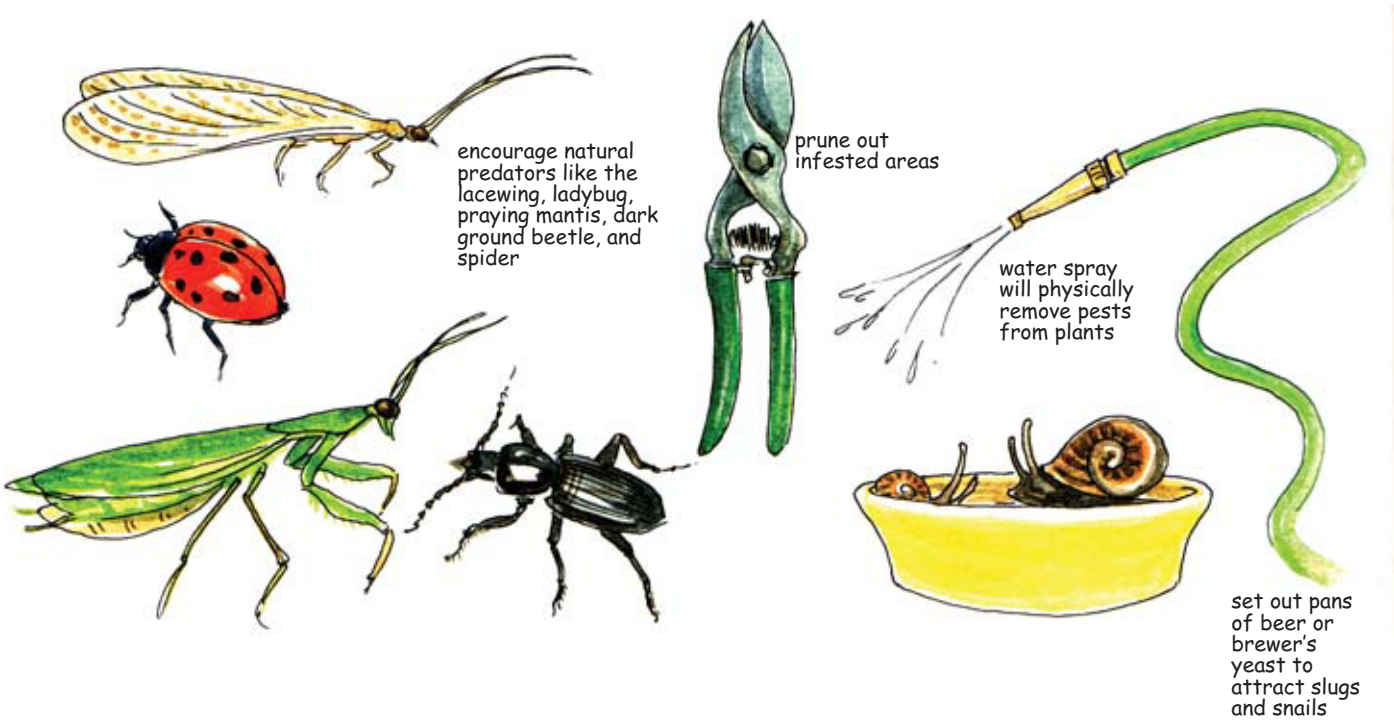
After planting adapted plant varieties, providing the necessary nutrients and moisture, and following through with good maintenance practices, gardeners should determine the threshold level of weeds or insect damage they are willing to accept. Setting our pest tolerance too low results in unnecessary 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, changing birdbath water regularly, and eliminating items around the yard that may collect 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, see Chapter 13.



What Else Can I Do?

- Support 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. Urge the town to minimize or eliminate the use of herbicides and pesticides, particularly near waterbodies and children's playgrounds.
- Support Chatham's efforts to eliminate and control invasive plants.
- Take advantage of informational resources such as the Cape Cod Cooperative Extension.

Cape Cod Neighbor

Great Blue Heron: Walking in the Wetlands

Drawing by Barbara Holden

That large graceful bird that you see wading among the marsh grass is undoubtedly a Great Blue Heron. Note its long legs, yellowish beak, and grayish blue color. In flight the bird's neck is held in an S-shaped configuration and its wingspan can exceed six feet. The Great Blue catches fish by standing quietly and then spearing them with its sharp beak. The survival of this magnificent bird depends on healthy wetlands.

Cape Cod Neighbor

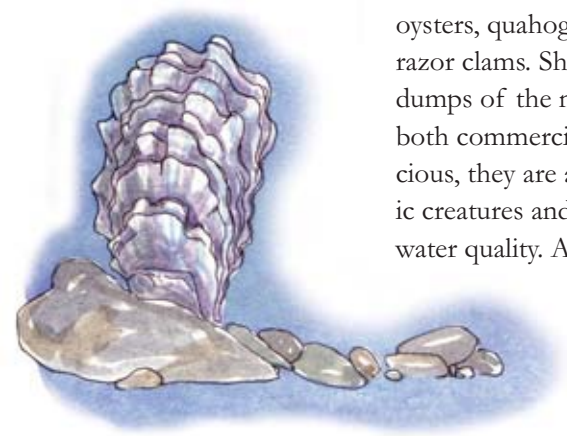
Osprey: Famous Fish Hawk

A coastal superstar, the Osprey's resurgence on the Cape is a success story. Their decline resulted from the disruption of nesting sites and the use of DDT, which thinned their eggshells. With the banning of DDT and the construction of nesting platforms, there are now 6 or more coastal nesting pairs of Osprey that fledge offspring in Chatham that rely on our fresh and marine waters for food and habitat; a family of four requires more than six pounds of fish a day.

Drawing by Barbara Holden

Cape Cod Neighbor

Bivalves: Nature's Water Filters



If you have taken a walk on the beach, you've noticed the incredible diversity of shells that wash up on the shore. These are the remains of the many species of mollusks that live in our salt ponds, harbors and bays. These species include oysters, quahogs, soft shell clams or steamers, bay scallops, mussels, and surf and razor clams. Shellfish harvesting can be traced back to 'shell middens', the garbage dumps of the native Americans. Today, shellfish beds continue to be harvested both commercially and recreationally. These amazing creatures are not only delicious, they are also great for the environment. As they feed by filtering microscopic creatures and organic debris from the water, they act as natural filters to improve water quality. A full-sized oyster can filter more than 25 gallons of water per day!

Because these animals are filter feeders, bivalves are also among the first creatures to suffer from pollution and poor water quality. They are the 'canaries in the coal mine' of the marine environment.