

Coastal Landscaping in Massachusetts

Tips for Planting, Installation, and Maintenance

This printer-friendly PDF document provides the information from the [Tips for Planting, Installation, and Maintenance page](#) of the [Coastal Landscaping website](#) developed through the Massachusetts Office of Coastal Zone Management (CZM) StormSmart Coasts Program.

Understanding the natural coastal systems and the plant species that tolerate their rigorous conditions can help you plant a successful seaside landscape. See the guidelines below on: Permits, General Landscaping, Planting Plans, Digging Holes, Adding Compost to Soils, Watering, Mulch, Fertilizer, Time of Planting, Removal of Invasive Species, Lawns, Endangered and Threatened Wildlife Habitat, and Where to Get Plants.

Permits

Don't forget that if your project is in or near a wetland resource area (which includes coastal banks and dunes), a permit may be required by the local Conservation Commission and/or the Massachusetts Department of Environmental Protection under the Wetlands Protection Act (WPA). Your local Conservation Commission can help you determine whether your landscaping project will need a WPA review.

Projects in rare species habitat may also require a Massachusetts Endangered Species Act (MESA) permit since planting activities can alter rare plant or wildlife habitat, including the breeding and nesting areas of shorebirds and nesting habitat for turtles. The Massachusetts Division of Fisheries and Wildlife's Natural Heritage and Endangered Species Program (NHESP) can help you determine if your project is allowed and what additional requirements may apply.

For more detailed information on the regulatory requirements under the WPA and MESA, see CZM's [Coastal Landscaping in Massachusetts - Do You Need a Permit? page](#).

General Landscaping

Your general approach to landscaping can improve your coastal property's value, provide environmental benefits, and prevent erosion. Here are some basic principles to consider:

- Be sure to check with your local authorities to determine if any public or private right-of-way or easement crosses or abuts your property. Plantings should not obstruct rights-of-way or easements or infringe on public property or adjacent private property without permission.
- Plant a buffer area of native trees, shrubs, and deep-rooted grasses between maintained areas of your yard and the shore to help stop and slow shoreline erosion, filter sediments and pollutants, and beautify the yard. Do not mow right up to the edge of the dune, bank, beach, or marsh, and keep the lawn area as small as possible.
- Grade property to direct runoff away from the shoreline and toward planted areas (such as rain gardens) to reduce erosion of banks, dunes, and beaches, and to prevent contaminants from entering bays, harbors, and the ocean. See CZM's [StormSmart Properties Fact Sheet 2: Controlling Overland Runoff to Reduce Coastal Erosion](#) for more information.

- In areas that are frequently inundated with water, plant coastal “rain garden” species that can tolerate both wet and dry conditions:
 - Herbaceous plants and grasses, such as black grass (*Juncus gerardii*), daylilies (*Hemerocallis spp.*), red columbine (*Aquilegia canadensis*), seaside goldenrod (*Solidago sempervirens*), switchgrass (*Panicum virgatum*), and pink tickseed (*Coreopsis rosea*).
 - Shrubs or small trees, such as arrowwood viburnum (*Viburnum dentatum*), sweet pepperbush (*Clethra alnifolia*), highbush blueberry (*Vaccinium corymbosum*), inkberry (*Ilex glabra*), red chokeberry (*Aronia arbutifolia*), and winterberry (*Ilex verticillata*).
 - Larger trees, such as Atlantic white cedar (*Chamaecyparis thyoides*) and black tupelo (*Nyssa sylvatica*).
 - For photos and additional information for selected species, see [Coastal Landscaping in Massachusetts - Plant Highlights and Images](#).
 - For more plant species suitable for rain gardens, see the [UMass Extension's fact sheet on rain gardens](#).
- Plant an area around your driveway with plants to slow runoff and trap sediments and pollutants (see rain garden plant species above for plant selection). While you’re at it, replace pavement and concrete driveways with pervious material (crushed stone, shells, gravel) to allow water to infiltrate slowly into the ground. See the Executive Office of Energy and Environmental Affairs [Smart Growth/Smart Energy Toolkit](#) for more information on low impact development strategies for controlling runoff and dealing with other stormwater issues.
- On steep slopes where erosion is threatening property, biodegradable erosion fabric, such as coconut fiber or coir mesh, may be used as a temporary erosion control effort, before plants take root. See CZM’s [StormSmart Properties Fact Sheet 5: Bioengineering - Natural Fiber Blankets on Coastal Banks](#).
- To protect dune and bank vegetation, limit pedestrian access to the shoreline by using one designated access path or walkway. See [CZ-Tip - Basics of Building Beach Access Structures that Protect Dunes and Banks](#) for specifics.

Planting Plans

Plants should be installed in areas that are most suitable for their needs. Your landscape design should therefore take into account the conditions of the site, including wind, light, slopes, and hydrology. The following are a few suggestions:

- Hardier trees and shrubs can be placed so as to provide a wind screen for less wind-tolerant plants.
- Sun-loving plants can provide shade for plants that do not thrive in the direct sun.
- Deep-rooting shrubs and grasses can be placed on steep slopes, so as to provide stability and uptake of stormwater and groundwater flows.
- A diversity of plants can be used to enhance wildlife habitat and reduce the potential for loss to disease or pests.

Digging Holes for Plants

Give your plants the best possible start by following these tips:

- On dunes, beaches, and other very sandy areas, you typically plug plants directly into the sand. But in heavier soils, be sure to dig a proper hole for your new plants. Measure the depth of the hole to be sure that it is as deep as the height of the root ball. If the hole is too deep, the stem will be smothered; if it's not deep enough, the plant will be blown over or water will run off the surface and not get to the roots. Once the plant is placed in the hole, the base of its stem or trunk should be level with the surrounding ground. The width of the hole should be approximately three times the diameter of the root ball to allow enough space for the roots to expand into loose soils.
- Space plants according to the specifications on the plant's label.

Adding Compost to Soils

Augment sandy soils with compost material during initial planting, since even species that are tolerant of well-drained, sandy soils will require more moisture and nutrients when trying to gain a foothold and spread their roots. Compost material is decomposed organic matter that can include grass clippings, fallen leaves, vegetable scraps, and even animal manure. Thoroughly decomposed compost is beneficial for returning nutrients and organic material to the soils and feeding your plants.

Watering

Established native plants typically do not require watering. When planted at the appropriate time of year, some newly planted species, such as American beachgrass planted on dunes, also do not require watering.

In both dune and bank areas, some supplemental irrigation may be necessary to ensure success in certain circumstances. For most newly planted vegetation, it is generally recommended that a temporary, automated irrigation system be used from April through October during the first two to three growing seasons until the roots can effectively find and absorb water from the surrounding soils. These irrigation rates can typically be reduced each year, with only minimal water needed in the third year, if at all. For American beachgrass and other plants that do not typically require initial watering, temporary irrigation (i.e., for 4-6 months) is needed when these species are planted in the hot, dry summer months.

Permanent irrigation systems and heavy watering are unnecessary and are not recommended, not only because established plants do not require watering (with the exception of times of drought), but also because excess water from permanent irrigation systems generally exacerbates dune and bank erosion and can even lead to bank failure. Excess water on dunes can also reduce soil salinity levels and allow plants that will not survive in the long-term to out-compete appropriate erosion-control plants.

Temporary irrigation systems, such as aerial heads, are good for providing water to large areas of plugs and seeds, while soaker hoses and drip tubing are effective for supporting container plantings, such as shrubs. A timer may be appropriate to deliver a sufficient amount of water (enough to infiltrate well into the soil to help plants develop deep roots) at desired times (often early morning when less water is lost to the heat of the day). The temporary irrigation lines should be left at the surface (so soils will not be disturbed when the

lines are removed) and the system should be removed at a determined time (such as when a local Conservation Commission issues a Certificate of Compliance for the project around year 3).

Various methods to improve water retention and nutrient content in the plants and soils can also help significantly boost the survival rates of plants, such as the application of beneficial microbes and organic compost. A professional may need to be contacted to help determine the most appropriate watering methods and applications that will ensure plant establishment while avoiding impacts to coastal resource areas.

Mulch

Follow these tips for mulching near the coast:

- Mulch should not be used on a sand dune or a bank face with loose sediments. While it is acceptable to install plants in these areas to provide overall stability, the sediments themselves should be maintained in as natural a state as possible to ensure that the erosion process that supplies sediment to other coastal areas is not impeded.
- Where mulch is appropriate, mulch the root zones of newly planted trees and shrubs to a depth of approximately 2-2 ½ inches. Mulching materials may include shredded leaves, straw, wood chips, and bark mulch.

Fertilizer

Follow these tips for fertilizing new plants:

- For most plant species, fertilizer should generally not be applied at the time of planting to avoid burning the vulnerable roots of the plants. If the plant type requires fertilizing in the first year (as specified on the label), use only the minimum amount necessary and use slow-release fertilizers composed of water-insoluble materials that depend on a certain level of soil moisture, temperature, or microbial activity to release nutrients. These fertilizers are readily available at garden centers.
- Once the plants become well established, little to no fertilizer is required.
- For beachgrass, apply fertilizer 30 days after planting, but not before April 1. Split the fertilizer applications: one in spring (after April 1) and another in the late summer or early fall. Apply no more than 1 pound of nitrogen per 1,000 square feet in a single application. Once the stand is established, the rate of fertilizer can be reduced by half or applied only when the stand appears to be weakening.

Time of Planting

Most coastal species are best planted or transplanted in the spring or fall, when rainwater is more available, lower temperatures maintain soil moisture, and heat stress is less likely.

Beachgrass, however, is planted in late fall through winter and into spring (except in areas exposed to strong wind or waves, where it should be planted in the spring to reduce the likelihood of being washed or blown away in winter storms). **Please note:** If the area to be planted is located in state-designated shorebird nesting habitat, a permit may be required that specifies certain conditions for the project, such as planting beachgrass before April 1 to protect breeding and nesting activities. Additional time-of-year restrictions may be required

to protect nesting habitat of protected turtles. See CZM's [Coastal Landscaping in Massachusetts - Do You Need a Permit? page](#) for additional information on Massachusetts Endangered Species Act requirements.

For additional guidance on planting beachgrass, see:

- [CZ-Tip - Dune Building with Beachgrass](#), a CZM web page describing how to plant American beachgrass to help stabilize dunes and prevent storm damage.
- [Coastal Dune Protection and Restoration—Using 'Cape' American Beachgrass and Fencing](#) (PDF, 3 MB), a bulletin of the Woods Hole Sea Grant and Cape Cod Cooperative Extension Program.
- [American Beachgrass Planting Guide](#) (PDF, 97 KB), a bulletin of the New York Sea Grant and Cornell Cooperative Extension Program.

Removal of Invasive Species

On a case-by-case basis, the homeowner (as well as Conservation Commissions) will need to consider whether the overall benefits of ridding nuisance vegetation (that may be competing with beneficial native species) outweigh the detriments of disturbing the vegetation and possibly undermining or destabilizing a bank or dune. Often times, a short-term loss must be taken for a future gain.

See [CZ-Tip - Coastal Plant Identification: Common Native and Invasive Species Found on the Massachusetts Coast](#) for information on identifying the most common invasive plants on the coast, along with links to resources on managing invasive species.

Lawns

If you intend to keep, restore, or plant a lawn (remember, grass is extremely difficult to maintain), it is recommended that you follow these guidelines. For more detailed information about low-impact lawn care, visit the [Greenscapes Program](#).

- Use a mix of grass species to help maintain diversity and create a resistance to different diseases and insects.
- Avoid using bluegrass, which is the most common but most fragile lawn grass. Instead, choose fescue grasses (such as chewings, hard, creeping, red, and sheep), which are more drought tolerant and insect resistant and will survive in sunny or shady areas with varying types of soils. While only one subspecies of red fescue (*Festuca rubra* ssp. *pruinosa*) is native to Massachusetts, the other fescues still require less water, fertilizers, and pesticides than bluegrass.
- After mowing, leave grass clippings on the lawn as fertilizer, since they will break down and add nitrogen and organic matter to the soil. However, if additional nutrients are necessary to supplement the soil and feed the lawn, choose an organic, slow-release, water-insoluble fertilizer and use sparingly.

Endangered and Threatened Wildlife Habitat

Because vegetation can alter habitat, care must be taken with vegetation projects in endangered and threatened wildlife habitat. Selecting appropriate types of vegetation (e.g., grass vs. shrubs) and increasing the spacing between plantings can reduce impacts to these species. Detailed guidance is available from

the [Natural Heritage and Endangered Species Program](#) of the Massachusetts Division of Fisheries and Wildlife.

Where to Get Plants

While the best coastal landscaping mimics the natural environment, please never take plants from the wild. Digging up or even picking and cutting local plants can cause big problems—it diminishes local populations of native plants, interferes with seed and fruit production, contributes to coastal erosion, and reduces food, shelter, and nesting habitat for wildlife. So please get your plants from appropriate sources, such as garden centers, nurseries, online commercial or wholesale dealers, or even from a friend’s yard. See [Where to Purchase Native Plants](#) for additional information.