

# Smooth Cordgrass

# Planting Guide

## Introduction

Smooth cordgrass (*Spartina alterniflora*) is the most common higher plant in our coastal intertidal salt and brackish marshes. With its ability to withstand daily flooding and high salt tolerance this is the only species that commonly occupies this habitat. Because it is so dominant, this species serves numerous vital ecological functions. Foremost, cordgrass forms the base of the extensive detrital food chain. As the leaves die off and are broken down by invertebrates and wave energy, small fragments of organic matter are released to the flooding tides. Once in the water, this material is consumed by a number of species that are in turn consumed by larger species. In addition to the contribution of organic material to the coastal food chain, cordgrass serves a very important role as a physical component of the coast. The presence of high stem densities at the shoreline serves to dampen wave energy and protect beaches and waterfront properties. In addition, the stem matrix serves as a base for the attachment of numerous visible and microscopic plants and animals that help to make salt marshes diverse ecosystems.

## Where do you start?

Despite the obvious need to restore and enhance our coastal marshes, conducting a cordgrass planting should not be taken lightly. Before beginning, it is essential to consider the regulatory and logistical implications. Because cordgrass grows in tidal wetlands, planting requires permits from New York State Department of Environmental Conservation and one or more local municipalities (e.g., Village or Town) who also regulate wetlands. Prior to submitting an application, it is beneficial to meet with all involved regulatory personnel. Setting up a “pre-application site visit” ensures your expectations and those of the permitting agency are consistent. It is essential that the project be clearly and concisely described: a well written permit application makes it easy for the regulatory agency to grant the permit. Those not experienced in permit work should consult with a knowledgeable person.

Because you need to obtain regulatory permission with a cordgrass planting project, it is essential the planning process begin several months prior to the proposed planting time. Plantings can occur any time during spring and summer, but the ideal time is in early summer. Planting late in August can be problematic if the plants do not become well established prior to the onset of winter.

## Planning

The most important aspect of planting cordgrass is site selection. When selecting an area for planting, choose a site that already supports cordgrass so that you can be certain that conditions are suitable. Since cordgrass grows in response to the rise and fall of the tide it is necessary to observe the elevation at which this species grows at your site (i.e., biological benchmark). In this way, existing plants will indicate the elevation within the tidal range that cordgrass will survive in your area. Sites totally devoid of vegetation can be planted, but require a little more experience and knowledge of tidal range. First time practitioners should avoid areas lacking vegetation as the absence of plants may indicate some limiting factor such as excessive erosion or other disturbance.

The planting site should be adjacent to or within an existing bed of cordgrass. In the best areas, the planting would extend the marsh into an open gently sloping sandy area that can easily be protected with a perimeter fence. Suitable sediments are fine to coarse sand with some organic matter.



Plant Smooth Cordgrass in early summer



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## Smooth Cordgrass

Once a site is selected, the planting area needs to be calculated so that the number of plants can be determined. Areas are calculated in square feet by multiplying the length and width of the site. Cordgrass is typically planted at a density of 12"-18" on center (OC). Therefore, the simplest way to calculate the number of plants needed is to use the 12" OC spacing, so that the area in square feet equals the number of plants. Using this technique will ensure sufficient plant material. The next step is to order the plants. Cordgrass plants can be purchased from a local nursery that specializes in native plants. Whenever possible, use plants propagated from local stock. Nursery grown plants are typically sold in 3" peat pots. Make sure the plants are vigorous and that the tops are green and coarse and that roots are emerging from the sides of the peat pot.

### Planting

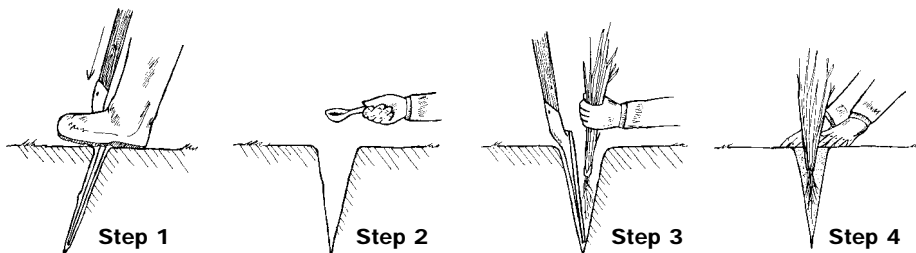
It is essential that the plant be placed at the proper depth so that it will not float out with the tides. Planting can be done by one person, or ideally, two or three people working as a team. One person makes the hole while the second person adds the fertilizer and the plant. With a third person, the fertilizing and planting can be further divided. The best tool to use is a long handled shovel. Push the shovel into the sediment the full depth of the blade with the handle leaning towards the digger. The handle of the shovel is then pushed away from the digger to expose a "V" shaped hole. With the shovel still in place, the fertilizer is added and the plant dropped in place. Then the person with the shovel then kneels down and pushes the plant into the sediment with one hand and remove the shovel with the other hand. Finally, the soil around each plant is compacted by hand or foot. If the sediments are suitable, it may be possible to create multiple planting holes in a similar manner and plant in succession. However, this only works if the sediment maintains its shape.

As with many terrestrial plants, cordgrass requires a small amount of fertilizer at the time of planting. Slow release fertilizer (approximately 1 oz per plant) is recommended, since it provides nutrients throughout the first growing season and minimizes release to the environment. A balanced fertilizer with a minimum 3-4 month release period is recommended for all plantings.

Following planting, protect the planting for the first growing season with a perimeter fence. This is especially important if the area is known to be frequented by swans or Canada geese. Both species will pull out recent plantings. Perimeter fencing should be either string or snow fencing. Snow fence is easily installed, but can be damaged by high wave energy and fouling. String fence is more difficult to install, but is usually better suited to the task. A fence is constructed by driving in metal or wooden 4-5' long stakes 10' OC. Snow fence is installed by simply wrapping the perimeter and attaching the fence. String fencing involves connecting the stakes around the perimeter with twine at 1' vertical increments. Additional protection can be added by running twine across the planting area from one side to the other. Spans of more than 20' require the use of supporting stakes in the middle of the planting. Brightly colored surveyors tape can be added to further enhance the fence.

After planting and fencing, check each week to make sure the fence is not fouled or disturbed. Given good site selection, healthy plants and a little luck, the following spring should show little indication that your marsh was planted.

Smooth Cordgrass is ideally planted using teams of two or three people.



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### Obtaining Help

It's a good idea to obtain some professional advice before implementing a beach grass planting. Good sources of help are:

Cornell Cooperative Extension of Suffolk County Marine Program, 3690 Cedar Beach Rd., Southold NY 11971 516-852-8660

New York Sea Grant Extension Program, 3059 Sound Ave., Riverhead, NY 11901 516-727-3910

USDA Natural Resources Conservation Service, Riverhead County Ctr., Room N-210, Riverhead, NY 11901 516-727-2315

These three organizations can also help you locate sources of Smooth Cordgrass plants.