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## **Guidelines for planting within the 100 Ft. Buffer**

**Introduction:** The Barnstable County Extension Service initiated the formation of a committee to develop guidelines for planting within the 100-ft. buffer zone of a resource area subject to the jurisdiction of Conservation Commissions. The purpose of the committee has been to develop a uniform approach, in regards to plant materials, planting specifications and follow-up maintenance, to use in the development of wetland projects and in mitigation of violations. It is hoped that this document will be considered for adoption by town Conservation Commissions on Cape Cod. Committee members represent Conservation Commissions, Green Industry professionals, private consultants, and Extension Educators. Current landscape standards of the various disciplines were reviewed and discussed to prepare a comprehensive document that utilized the combined experience of the members.

Consideration was given to the interests of the regulatory authority, the costs to homeowners, and the best planting measures as determined by industry standards. The plant list was limited to native woody species as compiled from the lists of the various Conservation Commissions on Cape Cod. Specifications for planting include species, optimum plant size and spacing requirements, sun and soil preferences, and salt tolerance. The committee hopes that the guidelines will help standardize planting practices proposed by applicants or imposed by Commissions towards the establishment of successful plant communities. Please note that this document does not take into account the various factors that a Conservation Commission will review when considering an appropriate remediation/restoration plan for clear-cutting violations.

Site preparation and post-planting maintenance is also addressed. A supplemental list of non-native, low maintenance, non-invasive plant material that may be considered for use in less sensitive areas has also been developed.

### **Recommendations for site preparation and correct planting practices**

Proper site preparation and planting procedures are important for plant establishment and survival.

1. Compost or other organic amendments should be mixed into the back-fill soil to increase water-holding capacity where appropriate.
2. Planting hole depth for trees should be only as deep as measured from the trunk flare to the bottom of the root ball.
3. Planting hole width should be a minimum of three times the diameter of the root ball.
4. If plant material is balled & burlapped, all burlap should be removed or cut from the top third of the root ball. If large materials are in wire baskets, the top third of the basket should be cut and removed. The trunk flare should be located to insure correct planting depth.
5. Large trees may be staked for stability for one growing season.
6. All plants should be thoroughly watered in at the time of planting (15-20 gal. per plant).
7. Container plants should be planted at the same depth as grown in the container.
8. Root balls should be mulched.
9. No fertilization is necessary at planting time.

**Recommendations for planting areas within the 100FT vegetated buffer zone**

Each town has its own requirements for an undisturbed buffer zone; contact local Conservation Commissions for their regulations.

The applicant should limit the amount of vegetation that is to be removed from the site to a minimum that is required to accommodate the proposed buildings, driveways, and associated grading. The applicant should be responsible for planting all areas within the scope of the project except as may be required for drainage catchment areas. The intent is to preserve natural vegetation and to re-vegetate those disturbed areas with indigenous or compatible species. Where practical, sods of existing, native vegetation may be lifted from those areas that will be disturbed and replanted in other areas. Depending on the project complexity, work should be performed or supervised by a certified landscape professional or as approved by the conservation commission. (Massachusetts Certified Horticulturist, Massachusetts Certified Landscape Professional, Massachusetts Certified Arborist, or equivalent).

**Recommended Minimum Landscape Material Specifications**

High quality plant material will establish more readily in the landscape. Efforts should be made to ensure that adequate root dimensions in relation to caliper exist. The *American Standard for Nursery Stock* lists these minimum root dimensions in the following table.

Minimum root ball diameter for selected sizes of shade trees (ANSI Z60.1)	
Caliper (measured in inches, 4 inches above the ground)	Minimum root spread (inches)
1	16
2	24
3	32
4	42
5	54
6	60
7	70
8	80

Trees: Tree size may depend on site conditions and site accessibility.

Deciduous: An effort should be made to provide a variety of sizes and species. Sizes should range from a minimum of 1-inch to 3-inch caliper as specified by *American Standards for Nursery Stock*. Multi-stemmed deciduous trees such as *Betula nigra* (River birch) should be of a comparable height (8’ to 10’) to a 1” – 3” caliper tree.

Evergreen: Evergreen trees should be at varying heights ranging from five to ten feet at the time of planting.

**Shrubs:** The minimum shrub size of planting material varies according to species. Please refer to the tables for shrub spacing requirements. The plants should cover the dimensions of the container. The spacing of the plant material shall be appropriate to the chosen species, based on an approved landscape plan. Inclusion of a variety of species is recommended.

Where appropriate, living groundcover planting material should be provided and maintained beneath trees in all plantings. Groundcover will be spaced in a manner to achieve complete coverage within two years. Where a 4-inch container is used, groundcover should be spaced at a maximum of 12-inches on-center. Where a one gallon container is used, groundcover should be spaced at a maximum of 24-inches on-center. Groundcover is not required beneath the drip line of shrubs.

All plant materials should conform to *American Standards for Nursery Stock*, latest edition. Trees and plants species should be selected on the basis of having similar climatic, water, soil, and maintenance requirements.

### **Suggested Maintenance through Establishment Period (3 yrs – 5 yrs)**

Spacing of plant material should be sufficient to allow for maintenance during the establishment period. Size of plant material should be such that original canopy cover is achieved at the end of 5 years. Where appropriate, a community of plants should be used to establish layers within the planting area.

For mitigation purposes, efforts should be made to replicate what is adjacent to the violation in terms of percent tree layer, percent shrub layer, and percent herbaceous ground cover, with spacing to allow for future growth.

**Water:** Water is crucial for good plant establishment. All newly planted areas should receive approximately 1” of water per week during the growing season from April through October. Temporary irrigation may include drip tubing on a timer to be removed after establishment. Applicants and/or commissions might consider alternative technologies such as TreeGators™.

**Mulch:** Root zones of newly planted trees and shrubs should be mulched to a depth of 2” to 2 ½” to the drip-line, except for the area directly adjacent to the trunk. Mulching materials may include shredded leaves, aged wood chips, bark mulch, or other conservation commission approved material; or may be a hydro-seeded mixture of grasses and forbs. If hydro-seeding, a minimum of 4” of topsoil should be put down prior to seeding. On steep slopes, biodegradable erosion fabric may be used. Efforts will be made to prevent erosion and sedimentation in the planted areas.

**Weeding:** Hand removal of weeds is to be conducted where appropriate.

**Fertilizer:** No fertilizer should be applied at planting. In subsequent years, slow release fertilizers may be appropriate based on plant growth.

**Removal of invasive species:** Consideration shall be given to the removal of those species of plants listed by the mass. Dept. of Agricultural Resources Division of Regulatory Services.

For a list of invasive species, go to:

[http://www.mass.gov/agr/farmproducts/proposed\\_prohibited\\_plant\\_list.htm](http://www.mass.gov/agr/farmproducts/proposed_prohibited_plant_list.htm) or  
<http://www.newfs.org/conserve/docs/MIPAG040105.pdf>

## **Committee Members:**

Kristin Andres	Chatham Conservation Agent
Roberta Clark	Cape Cod Cooperative Extension
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