



Landscape Management Guidelines for Association Members

In the last quarter century of development on Kiawah, many lessons have been learned about best practices for successful landscaping on this barrier island. These guidelines are for all who, by virtue of being property owners, are members of the
Kiawah Island Community Association, Inc.

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Kiawah Island Community Association Landscape Management Guidelines for Association Members

Introduction

Kiawah Island is poised dramatically between ocean and marsh on land that receives the brunt of winds, salt spray, tides and sporadic coastal storms. On this island, wildlife has often been visible even to casual observers. The Kiawah ecosystem consists of a complex of dunes, shrub thickets, maritime forests, salt marshes and tidal flats. Maintaining each of these habitats in a good, natural condition is essential to the well-being of this island and the mainland it buffers. If the marshes are eliminated, the marine life that grows there disappears from the ocean. If the dunes are altered, beaches in front of them will be lost. As the maritime forest is cleared, many forms of wildlife will be lost and migrating birds will lose a place to rest and nest.



Man has an impact on Kiawah Island. The management of manmade areas, therefore, is the responsibility of every association member. Each member has a role to play in maintaining the health and beauty of this barrier island. As many have learned, the island environment is harsh on landscape designs that employ plants that may traditionally thrive in other parts of the country, and even in the gardens of nearby locations. The highly alkaline, quickly

draining, sandy soil is deficient in many essential nutrients. Non-native plants, with few exceptions, require regular and costly irrigation. They also often need fertilization and pesticide protection, both of which can contaminate nearby creeks and ponds.

Native and beneficial naturalized plants (plants that are not native, but mimic the benefits of native plants) require less maintenance, add natural beauty to the landscape and provide optimal habitat for wildlife. As the guidelines for management and maintenance of commonly held land on Kiawah evolve, guidelines for best practices in landscaping private property change as well. These guidelines adhere to principles held by the Kiawah Island Community Association and follow both the requirements of The Architectural Review Board and the advice of The Kiawah Island Natural Habitat Conservancy.

Guiding Principles

- I. The aesthetic beauty of Kiawah Island is to be protected and maintained.
- II. Landscape designs shall sustain wildlife population.
- III. All association members share in protecting Kiawah Island.

Landscape Objectives

I. Naturescapes

A naturescape is an incorporation of landscaping philosophies and concepts designed to maintain Kiawah's natural beauty as well as preserve and enhance the abundance and diversity of wildlife as the island is developed. The intent is to create an environment that is beneficial to the native flora and fauna, but yet maintains Kiawah standards and barrier island feel, while creating filtered views that minimize the visibility of structures. Extensive use of good naturescapes will preserve the Kiawah that attracts people and, hence preserve property values. Additionally, this approach will conserve water and other resources, minimize the negative impact of chemicals on the environment and ultimately reduce member landscaping costs.

A) General

- 1) Recognize Kiawah's natural setting as a unique environment. Plant within the environmental framework using native plants or beneficial naturalized plants.
- 2) Reduce the amount of lawn area and areas of solely mulch or pine straw in landscaping plans.
- 3) When necessary to incorporate mulch, beds should be heavily mulched to reduce moisture loss. Mulching can also deter noxious plants from germinating, reducing herbicide usage. Natural mulch, in the form of leaf litter, is preferred but shredded hardwood bark, pine straw or pine chips can be used. Mulched areas should be aesthetically maintained.
- 4) Use drought tolerant plant species whenever possible.
- 5) Monitor existing irrigation systems to ensure the most efficient use of water and encourage rain cutoffs. Use drip irrigation, where appropriate, to reduce water usage.
- 6) Members are encouraged to retain and/or return portions of their property to areas of native vegetation. A managed return to native areas, from a more formal landscape, can be achieved with consult and permission of KICA and the ARB.

B) Nature Curtains

Maintaining the natural beauty of Kiawah is vital to the Kiawah experience and to maintaining property values. Members should include nature curtains along the edges of their properties,

preferably on all sides. Nature curtains are areas of vegetation that screen the private living space and manmade structures from the public areas and adjoining properties so the natural look and feel of Kiawah is maintained. They give filtered views of the private living spaces, ideally having less than 25% of the structure visible intermittently from outside the curtain. Nature curtains can also be found at edges where a property adjoins a marsh, pond, beach dune or golf course playing area. Nature curtains are good habitat for the wildlife species of the island, providing a source of food, cover, and a place for species to den and nest. Vegetation in nature curtains along areas of water provides bank stabilization in the form of erosion control. These plantings along traffic corridors can reduce noise and light that can disturb the member's privacy. See **Appendix A** for plants to use.

1) Criteria for curtains are:

- a) Plant materials should mimic the existing native or naturalized plants growing in the vicinity.
- b) Plants should not be pruned except to maintain health, height or to thin the canopy to allow more sunlight into the area.
- c) Edges of the curtain should be pruned for a layered/feathered appearance. A formal or hedged look is not appropriate for a nature curtain. A natural shape that looks as if it could have been "pruned by mother nature" is ideal (*See KICA Pruning Guidelines, Appendix I*).
- d) Mulch should be the natural leaf litter from the plantings in the curtain itself. Large materials such as tree branches and palm fronds should be removed so that the maximum amount of sunlight is available to the canopy floor vegetation.
- e) Pine straw or mulch can be used in areas of medium or dense shade. Seasonal color and ground covers should also be planted to adhere to the ARB requirement that there is not an unplanted mulch or pine straw area greater than 100 square feet.

2) Zones

Nature curtains can be separated into zones. This delineation helps define the selection of suitable plants.

- a) Road views: The view between the primary structure and the roadway should be a filtered view with no more than 25% of the structure visible from the roadway. This approach provides screening of private living spaces as well as reduces light and noise from traffic corridors.

(1)The roadway curtain should extend at least 5 feet in from the roadway easement line towards the private living space. There should be a transition area from road edge

to nature curtain to allow for visibility along the roadway to traffic and pedestrians. Minimum width of this transition area should be 6 feet.

b) Property lines between neighbors: This area preserves a sense of privacy and reduces noise.

(1) The nature curtain itself should be at least 5 feet thick starting from the property line towards the private living space. It is strongly encouraged to establish a nature curtain of at least 10 feet.

(2) The curtain ideally consists of:

(a) Taller canopy trees (20+ feet).

(b) Intermittent tree and shrub species (3 to 10 feet).

(c) Low groundcover, grass and shrub species (4 inches to 2 feet).

c) Pond and Lake Edges: Ponds and lakes are an intrinsic part the island, both as an ecosystem and as components of the drainage system. It is a valuable wildlife habitat, as well. All water bodies should have some form of natural vegetative buffer, preferably native grasses and shrubs along their edges. This buffer will help reduce encounters with alligators by preventing them from coming out of the water into yards and common areas. This buffer will also prevent erosion, as well as aid in limiting chemical and fertilizer runoff, thereby maintaining the health of the ponds and lakes naturally.

Wax myrtles are a common species along pond edges but can cause problems of their own. Lake edges are best kept in a natural state that encourages the growth and establishment of aquatic plants and terrestrial grasses and minimizes larger woody vegetation.

(1) Criteria for maintenance of pond and lake edges:

(a) No plants may be removed, cut, or planted at pond and lake edges without the expressed permission of the association first and then the Architectural Review Board. Routine maintenance activities, previously approved by these two entities may be conducted without receiving written permission for each occurrence. Pruning should only be performed in winter months to minimize the impact on nesting birds. Members should contact the association lakes management department at 843-768-2315 or via email at KICALakes@kica.us to set up a meeting and obtain the proper request forms. Pruning of plants is only allowed within the view window design or in accordance with standards and methods set forth in **Appendix I**. See lake edge diagrams **Appendix D**.

(b) Pond edges should consist of plantings appropriate to the water quality conditions of the pond. Plants in the genus *Spartina* have worked well here, both in and out

of the water. Smooth cordgrass (*Spartina alterniflora*) is an aquatic plant that tolerates high salinity. Sand cordgrass (*Spartina bakerii*) and Saltmeadow cordgrass (*Spartina patens*) are two good terrestrial grasses adjacent to the water.

- (c) These plantings should extend 1-2 feet out into the water depending on the slope of the submerged shoreline and up the bank at least 3 feet in the transition area to the point where more terrestrial plantings would be appropriate. See **Appendix B** for list of appropriate aquatic plants as well as a list of aquatic plants to avoid. See **Appendix C** for transition species and terrestrial grasses. See **Appendix D** for a planting diagram. Note that erosion can occur along pond and lake edges that have insufficient or inappropriate shoreline vegetation.
 - (d) Trees and large shrubs should be kept 10-15 feet from the water's edge, wherever possible, so they will not shade out the shoreline grasses and plants.
 - (e) According to ARB guidelines, the building setback is 30 feet from a pond or lake.
 - (f) Also from the ARB guidelines, areas of sod must be a minimum of 15 feet from the pond or lake edge.
 - (g) Contact the association lakes management department for recommendations on aquatic plant selection, planting advice and methods for erosion control at 843-768-2315 or KICALakes@kica.us.
- d) Marsh Edge: Salt marshes are ecologically sensitive areas and are an important habitat on Kiawah. A vegetated marsh edge is beneficial for several reasons; similar to pond edges, it serves as a filter for sediment and pollutants and it provides valuable habitat for bobcats, painted buntings and many other species. Marsh edges have been shown to be one of the most important habitat types utilized by bobcats as vital daytime resting cover. Marsh edges tend to establish themselves readily as long as the areas are not disturbed by landscape maintenance activities. Species such as Sea Oxeye, Marsh Elder, Wax Myrtle and Eastern Red Cedar are common in these areas.
- (1) Criteria for maintenance of marsh edges:
 - (a) Marshes are regulated by the State of South Carolina Office of Ocean and Coastal Resource Management (OCRM) and The Architectural Review Board. Maintenance should not occur on the marsh side of OCRM critical line. See marsh edge diagram **Appendix E**.

- (b) Marsh buffers should be a minimum of 10 feet in width but should be as wide as possible.
- (c) ARB guidelines state that building setbacks from the marsh is 30 feet.
- e) Dune Edge: Dunes protect properties from wind, tides, currents and storms, much as the barrier islands protect the mainland from these forces. Native plants (especially Sea Oats, Beach Grass and Wax Myrtles) hold dunes together. Densely vegetated secondary dunes are probably the most important habitat type on Kiawah Island for resting bobcats. They also provide cover and forage for a variety of songbirds, deer and foxes. Bobcats will readily spend time in even small patches of dunes very close to buildings.
 - (1) Criteria for maintenance of dune edges:
 - (a) No plants may be removed or cut in the dunes without the expressed permission of the association first and then the Architectural Review Board.
 - (b) Pruning should be done only when absolutely necessary and should attempt to create a mosaic of vegetation heights and densities, not a uniform hedge.
 - (c) Maintenance should not occur seaward of the edge of the dune field.
 - (d) Walk only on boardwalks from beachfront property to the beach.
 - (e) Walking on the dunes is not permitted in order to protect the coastal dune community of plants such as sea oats and grasses, which create an effective windbreak for homes and properties and hold the dunes in place. See KICA's Dune Edge Diagram and Dunes Management Guidelines.

C) **Intermediate Zones**

These are areas between property edges and the main dwelling. They can include a number of habitat types from butterfly gardens to bird feeding areas, ornamental ponds, stands of ornamental grasses, stands of woody vegetation, etc. These areas, when coupled with the nature curtains, can combine to form the desired screening of structures from common areas and vice versa.

- 1) Criteria for intermediate zones are:
 - a) Act as a component of desired screening.
 - b) Provide wildlife habitat.

D) **Foundation Plantings**

Foundation plantings are beds of plants installed along house foundations and plantings around entranceways and features that are in association with the foundation. The basic function of these plantings is to hide raised house foundations and soften up the

hard lines and corners of buildings but foundation plantings can also add to the habitat value of your yard.

- 1) Criteria for foundation zones are:
 - a) ARB guidelines state that foundation plantings are required to be at least half the height of the foundation and must encompass the entire house.
 - b) Some things to think about when planning a foundation planting are:
 - (1) Location of utilities.
 - (2) Mature height of plant being used.
 - (3) Location of the sunny and shady areas around your buildings.
 - c) In addition to shrubs and trees, consider ornamental grasses as well as annual and perennial flowers. For a lower maintenance areas, consider dwarf varieties of shrubs and plants to reduce pruning needs.
 - d) Positioning of plants in foundation beds is important. One rule of thumb is that a shrub with a mature height of 6 feet or greater should be about 5 feet away from the house. The shorter the shrub, the closer you can be to the foundation. Ample air circulation between the house and plants is needed to discourage rot. Appropriate spacing between the plants themselves is needed to prevent disease and reduce maintenance. A proper planting distance from the house also allows access to the house for maintenance, and moves the plants from under the eaves for more exposure to rainfall.

II. Vegetation Selection

A) **Trees**

- 1) Use primary succession species like Pine, Sabal Palm, and Wax Myrtle for quick growth. They provide shelter and shade for secondary growth trees such as Oaks and Magnolias. Wax Myrtles planted too close to pond or lakes edges can cause erosion of banks.
- 2) Removal of live trees or limbs over 4-inch caliper (diameter of tree) requires ARB approval.
- 3) Dead trees and snags should be left as habitat for wildlife unless they endanger individuals or other property. They can provide important feeding areas for several species of birds, especially woodpeckers; nesting areas for some songbirds and owls and many woodpeckers; and resting areas for hawks.
- 4) Replace any removed tree with one or more similar trees. See **Appendix G** for recommended trees.
- 5) Remove invasive shrubs and trees. See **Appendix I** for list of these plants.
- 6) If a large portion of your yard is in deep shade, consider working with an arborist to selectively open the canopy to allow

light in. Reducing the over story to a densiometer reading of 65% may be appropriate.

B) Shrubs and Vines

- 1) Prune plants as needed to maintain vigorous growth. Pruning should ideally occur in the winter months to minimize the impact on nesting birds.
- 2) Prune shrubs to maintain natural form whenever possible. See appendix on pruning techniques.
See shrub-pruning diagrams in **Appendix J**.
- 3) Choose hand pruning over shearing in the following instances:
 - a) Pond or lake edge plantings,
 - b) Marsh edge plantings,
 - c) Beach front area plantings,
 - d) Plants at side property lines shared with neighbors, and
 - e) Plants near streets.
- 4) Keep a clear line of sight at driveway and roadside edges of property.
- 5) Allow growth of native vines but attempt to confine them to your own property.

C) Ground Covers

- 1) Keep lawn areas as small as reasonably possible.. Lawns provide little habitat value and do not contribute to the natural look of Kiawah. Lawn maintenance can be labor intensive and require sustained application of chemicals and artificial irrigation.
- 2) Mow centipede grass to approximately 1.5 - 2 inches and St. Augustine to 3 - 4 inches in height.
- 3) Test soil in spring for exact information on fertilizers to use. See **Appendix K** for the correct process of soil testing.
- 4) Call Clemson Cooperative Extension Service for soil analysis at 843-722-5940.
- 5) Plant native species ground covers. See **Appendix H** for list of native ground cover.
- 6) Pine straw, leaf litter or mulch can be used in areas of medium or dense shade. However, seasonal color and groundcovers shall also be planted so that there is not an unplanted mulch or pine straw area greater than 100 square feet (ARB requirement). See A) 6) above for shade reduction possibilities.

D) Weeds, Plant Debris and Recycling of Yard Waste

- 1) Remove weeds from landscaped beds. Any plant out of place in a landscaped bed is considered a weed. Sections of native vegetation, by definition, have no weeds.
- 2) Stack palm fronds, limbs and other yard debris at side of road for weekly pickup and removal.

- 3) Make a compost of yard debris as a viable way of returning organic matter to the soil. Compost piles must be discreetly placed and screened from neighboring properties. ARB approval is required.

III. Landscape Maintenance Requirements

A) Routine Landscape Maintenance

- 1) These are requirements set by the Covenant and Compliance Committee in reference to association members' responsibilities in maintaining their property.
- 2) Lawns shall be regularly mown so that the grass does not exceed 4 inches in height.
- 3) Lawns at curbside and paved edges must be kept in a neat manner.
- 4) Lawns must be weed-free in appearance.
- 5) Debris such as palm fronds, limbs and other yard debris must be removed from lawn areas.
- 6) A definite edge must be maintained between lawn and native areas or between lawn and plant beds.
- 7) Mulch when installed, particularly pine straw, must be tucked in neatly at the bed edges and under shrubs.
- 8) Dead or diseased trees must be promptly felled and debris removed, if they endanger individuals or other property.
- 9) Driveways and walkways must be blown or swept clean twice per month.

- B) Maintenance as Landscapes Age:** As nature curtains mature, they tend to accumulate unwanted species, some plantings will die, and others will need maintenance pruning. Periodic cleaning of unwanted plant varieties, replacement of declining plants and pruning will be needed to maintain healthy nature curtains. The use of native plants in these areas along with a less formal pruning that promotes a feathered edge will reduce the need for maintenance in these nature curtains. If there is a view associated with a curtain, annual maintenance may be required in order to maintain it. An adequate amount and appearance of vegetation must be maintained so that the property continues to be an asset to and compatible with the natural beauty of the island. Criteria used by the Covenant and Compliance Committee are outlined in the following sections.

- 1) Ageing Nature Curtains. These areas are nature curtains that have matured so that some limiting factor has removed or eliminated the understory plantings from the site. Possibilities could be limited sunlight or a natural disease or other pathogen. Sometimes shrubs just grow into trees leaving no understory type plants. And at some point, plants die. Criteria for renovation of a nature curtain include:

- a) Lack of understory plantings and or ground covers.

- b) Large areas of mulch present with no intermediate growth.
 - c) Greater than 25% view of private living space or manmade structures.
- 2) Evaluation Process: A nature curtain may be deemed in need of renovation when one of the three conditions mentioned above exists. An examination of the curtain with a forestry densitometer to evaluate the method of thinning along with the recommendations from a certified arborist should be used as a basis for a renovation plan.
- a) Possible solutions to correct the problem could be:
 - (1) Selectively removing some of the canopy trees to allow more sunlight.
 - (2) Thinning the entire canopy to achieve the same purpose. (The method may vary based on the tree species.)
 - (3) Replacing dead or overgrown plants and augmenting existing vegetation to establish understory type vegetation.
 - (4) KICA provides some plants from plant rescue to aid members and provides some consultation help as requested.
- 3) Ageing Foundation Plantings: As foundation plantings mature, plantings may overgrow their spaces and/or suffer die-back due to disease/fungus/insects, etc. There may also be mechanical damage.
- a) Proper pruning techniques can maintain desired height.
 - b) Replacement of plantings is the best method to take care of plants that are in decline. Implementation of sound principles when installing foundation plants will go a long way to keep plant decline to a minimum.
 - c) KICA recommends the use of native plants whenever possible, and pruning to keep an open feathered appearance to the plants.
- 4) KICA's Right to Maintain to Minimum Standards in accordance with covenants compliance rules (statement of covenant compliance responsibility, KICA will enforce its rules & regulations): The deterioration and unsightliness of any member's property and landscape adversely affects the property of other members and KICA. In the event that a member fails to maintain his/her property's landscape on Kiawah Island in accordance with KICA's guidelines, rules and regulations, KICA may, but is not obligated to, enter onto a member's property and perform landscape maintenance necessary to achieve KICA's minimum standards. The member shall be solely responsible for the costs of such services and shall promptly pay KICA's invoice for the same. Nothing herein obligates or imposes a duty upon KICA to maintain any member's property or warn about dangerous trees or other conditions. KICA's

exercise of this right to enter and maintain does not impose a continuing obligation to do so. KICA shall not be responsible for property damage in the event it exercises its rights hereunder. Each member is solely responsible for the condition and safety of his/her property.

IV. Requirements for Member's Service Provider

A) Conditions for the Work:

- 1) Any work shall be performed by a KICA-approved contractor. Tree work shall be performed by a KICA-approved certified arborist.
- 2) Plantings in a nature curtain should be low maintenance type material. Native plantings are encouraged and need to be drought tolerant.
- 3) Any plantings plans for landscape renovations should be by a licensed landscape architect approved by KICA.
- 4) Installation should be by a KICA approved contractor.

B) KICA Certification Process for Service Providers:

- 1) This certification is required for: arborists, landscape architects, approved contractors, including lawn/landscape maintenance service providers.
- 2) Previously certified contractors must renew their certification on an annual basis. Both renewing contractors as well as those seeking certification for the first time must have at least one designated representative undergo the training required by KICA and agree to comply with KICA guidelines and regulations. This agreement commits the contractor's entire organization to follow KICA's guidelines and regulations. This annual certification renewal provides an opportunity to update information and refresh training. Certification is not transferable or assignable from one contractor to another.
- 3) The training may be provided by an on-line mechanism (with testing gates) and will at a minimum spell out what KICA hopes to achieve and why -- plus some do's and don'ts. Fines and corrective actions that may be required will also be included.
- 4) Violations of KICA's guidelines, rules and regulations will result in penalties, including, but not limited to, mitigation requirements, fines (to be determined annually), and revocation of the contractor's certification and pass license to access Kiawah Island. Contractors are directly liable for breaches and violations. Contractors cannot avoid liability for infractions by relying upon instructions given by the member. The member may also be held liable and subject to fines and corrective actions for instructing the contractor to violate KICA's guidelines, rules and regulations.
- 5) A list of certified service providers can be found at – www.kica.us/directory/index.html.

V. **Review Process for Addressing Members Concerns**

- A) Call a KICA Member Services representative at 843-768-9194 or KICAadmin@kica.us if concerns arise with land or lakes management. The representative will contact the appropriate department and they will seek resolution of the problem with the members.

- B) For further consideration, the member can call or write the Land and Lakes Management Committee chair who will review the situation with the committee.

- C) If satisfaction is not achieved with the Land and Lakes Committee, the member's concerns can then be directed to the KICA board of directors.

Appendix A - Nature Curtains

Nature Curtains - Areas where vegetation is allowed to grow in its natural state, providing screening and wildlife habitat.

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>
Dwarf Palmetto	Sabal	minor	Trunkless palm; provides good low screen. Grows in wet or dry soils. Grows best in semi-shade as an understory plant
Saw Palm	Serenoa	repens	Coarse tropical texture a blue green leaved form is available. Understory plant.
Wax Myrtles	Myrica	cerifera	Fast grower, good screen in full sun areas, evergreen and well adapted to barrier island environment.
Yaupon	Ilex	vomitorea	Upright growth habit, grows in sun or shade, can grow 4 to 6 feet tall.
Yucca	Yucca	sp.	Evergreen shrub with pointed leaves; requires full sun and dry conditions.

See Appendix G for further listing of nature curtain plants. Species of non-native plants are acceptable but not recommended, provided they are not listed in Appendix H.

Appendix B – Aquatic Vegetation

Growing In The Pond

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Salinity Tolerance</u>
Arrow Arum	Peltandra	virginica	Aquatic herb to 3' with large leaves and flowers on a spadix and enveloped in a green spathe.	low
Bald Cypress	Taxoduim	distichum	Large tree with needle-like leaves buttressed base.	low
Bur-marigold	Bidens	speciosa	Twining plant with fall-blooming, bright yellow flowers that form mats along pond edges.	low
Creeping Primrose	Ludwigia	palustris	Prostrate, mat-forming with red-purple-green, petalless flowers.	low
Dotted Smartweed	Polygonum	punctatum	Herb with papery tube leaves growing to 2' with clusters of tiny flowers.	low
Golden Club	Orontium	aquaticum	Large oblong leaves with yellow club where flowers form.	low
Lizard's Tail	Saururus	cernuus	Colonial rhizomal herb with heart-shaped leaves with aromatic, bottlebrush-like clusters of white flowers growing 2'.	low

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Salinity Tolerance</u>
Parrotfeather	Myriophyllum	aquaticum	Submersed, mat-forming aquatic with feathery leaves whorled around stalk.	low
Pickernelweed	Pontedaria	cordata	Showy aquatic to 3' with purple flowers in showy spikes and large lance-shaped leaves.	low
Swamp Blackgum	Nyssa	biflora	Tree to 65' with buttressed trunk.	low
Swamp Dock	Rumex	verticillatus	Papery tubes with leafy base growing to 4' with clustered flowers.	low
Swamp Lily	Crinum	americanum	Fragrant herb; white flowers; showy.	low
Arrowhead	Sagittaria	lancifolia	Showy aquatic to 4' with white flowers on a tall stalk and large leaves.	medium
Big Head Rush	Juncus	megacephalus	Fresh water shoreline perennial to 3' tall.	medium
Blue-flag Iris	Iris	virginica	Showy aquatic herb to 3' with dark purple flowers and narrow leaves.	medium
Giant Bulrush	Scirpus	validus	Large freshwater aquatic rush to 6' tall that does well on pond edges.	medium

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Salinity Tolerance</u>
Marsh Pennywort	Hydrocotyle	umbellata	Singular plants with a round leaf at the top of a slender stalk growing in large colonies along the pond edge and into shallow water.	medium
Sawgrass	Cladium	jamaicense	Large aquatic grass to 6' with showy fruiting bodies.	medium
Soft Rush	Juncus	effusus	Freshwater shoreline perennial to 3' tall.	medium
Water Hyssop	Bacopa	monnieri	Low, prostrate succulent with delicate purple-white flowers growing along pond edges.	medium
Whorled Pennywort	Hydrocotyle	verticillata	Singular plants with a round leaf at the top of a slender stalk growing in large colonies along the pond edge and into shallow water.	medium
Yellow Canna	Canna	flaccida	Showy aquatic to 4' with large leaves and yellow flowers.	medium
Yellow-flag Iris	Iris	pseudacorus	Showy aquatic herb to 3' with yellow flowers and narrow leaves.	medium
Giant Cordgrass	Spartina	cynosuroides	Aquatic to 3' tall, it is one of the most important species for salt marsh and shoreline stabilization.	high

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Salinity Tolerance</u>
Marsh-hay Cord Grass	Spartina	patens	Shoreline grass to 3' tall growing in the high salt marshes, and brackish flats.	high
Needle Rush	Juncus	romerianus	Aquatic perennial to 3' tall that inhabits upper portions of salt and brackish marshes.	high
Salt Grass	Distichlis	spicata	Low grass that does well in saline conditions. Can become invasive.	high
Saltmarsh Bulrush	Scirpus	robustus	Colonies; terminally clumped spikelets of spiraled overlapping scales; important habitats for aquatic life.	high
Smooth Cordgrass	Spartina	alterniflora	Salt water to brackish; to 2 m; rhizomal; terminal spikelets; important for erosion control; wildlife habitat.	high

Invasive Aquatics

Currently listed as **illegal to possess, import, or distribute** in South Carolina

* included on Federal Noxious Weed List

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>
African oxygen weed *	Lagarosiphon	major
Alligatorweed	Alternanthera	philoxeroides
Ambulia *	Limnophila	sessiliflora
Arrowhead *	Sagittaria	sagittifolia
Arrow-leaved monochoria *	Monochoria	hastata
Brazilian elodea	Egeria	densa
Caulerpa*	Caulerpa	taxifolia
Common reed	Phragmites	australis
Duck-lettuce *	Ottelia	alismoides
Eurasian watermilfoil	Myriophyllum	spicatum
Exotic bur reed *	Sparganium	erectum
Giant salvinia *	Salvinia	molesta biloba herzogii auriculata
Hydrilla *	Hydrilla	verticillata
Melaleuca *	Melaleuca	quinquenervia
Miramar weed *	Hygrophila	polysperma
Monochoria *	Monochoria	vaginalis

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>
Mosquito fern *	Azolla	pinnata
Purple loosestrife	Lythrum	salicaria
Rooted water hyacinth *	Eichhornia	azurea
Slender naiad	Najas	minor
Water chestnut	Trapa	natans
Water hyacinth	Eichhornia	crassipes
Water lettuce	Pistia	stratiotes
Water primrose	Ludwigia	hexapetala
Water spinach *	Ipomoea	aquatica
Wetland nightshade *	Solanum	tampicense

Appendix C – Transition Species

TERRESTRIAL GRASSES GROWING ALONG THE SHORELINE

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Salinity Tolerance</u>
Sweet grass	Muhlenbergia	filipes	Clump forming grass with attractive purple plumes in fall. Grows to 3'.	low
Broomsedge	Andropogon	sp.	Tufted grass to 3'.	medium
Dwarf Spikerush	Eleocharis	microcarpa	Low shoreline grass to 15" with single, brown nutlet at top.	medium
Sand Cord Grass	Spartina	bakerii	Clump forming grass. Grows to 3'.	medium
White-topped Sedge	Dichromea	colorata	Low shoreline grass to 10" with white star-shaped top.	medium
Marsh-hay Cord Grass	Spartina	repens	Spreading grass. Grows to 2'.	high

SMALL TREES AND SHRUBS GROWING ALONG THE SHORELINE

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Salinity Tolerance</u>
Seaside Mallow	Koelsteletskyia	virginica	Shrub to 6' with small, pink flowers.	low
Swamp Rose	Rosa	palustris	Medium shrub to 6' with hooked thorns and showy pink flowers.	low
Swamp Rose Mallow	Hibiscus	moscheutos	2.5 m tall; large showy white flowers.	low
Swamp Willow	Salix	caroliniana	Fast-growing shrub/tree to 20'. Somewhat invasive.	medium

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Salinity Tolerance</u>
Marsh Elder	Iva	frutescens	Medium shrub 4' with small flowers in drooping heads.	high
Sea Ox-eye	Borrichia	frutescens	Small shrub from 2-3' with yellow flowers growing in dense stands.	high

LARGE TREES GROWING ALONG THE SHORELINE

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Salinity Tolerance</u>
Laurel Oak	Quercus	laurifolia	Large canopy tree.	low
Red Bay	Persia	borbonia	Thick dark green aromatic leaves; will grow in sun. If grown in light shade, tree form is less dense.	low
Southern Magnolia	Magnolia	grandiflora	Large evergreen canopy tree with leathery leaves and fragrant, large, showy white flowers.	low
Live Oak	Quercus	virginica	Large canopy tree with spreading limbs.	medium
Palmetto Tree	Sabal	palmetto	Fan-shaped evergreen leaves at the top of a tall trunk.	medium

Appendix D – Lake Edge Diagrams

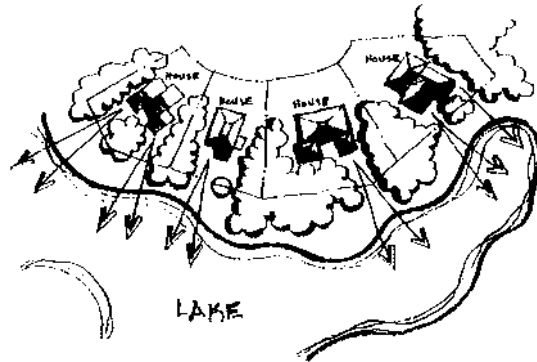


Figure 1. - View Windows

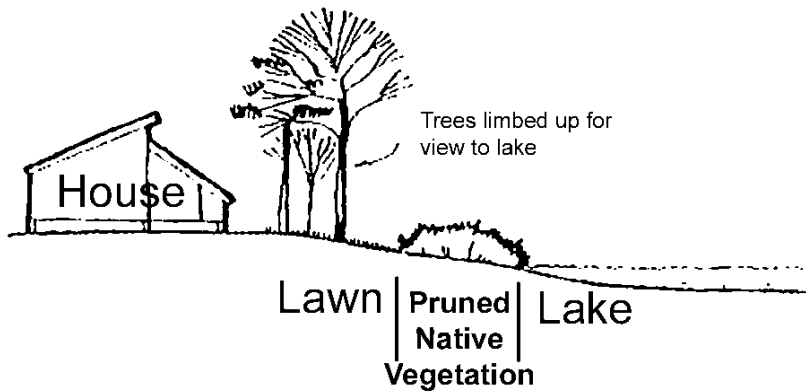


Figure 2. - Low Shoreline Filtered View

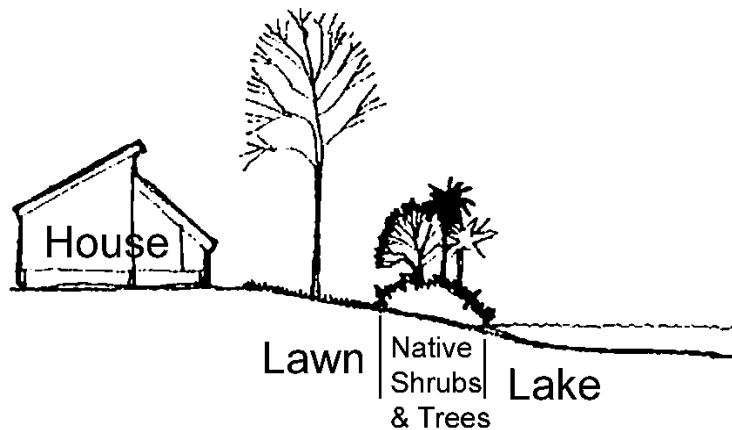


Figure 3. - Screened View

Appendix E – Marsh Edge Diagram

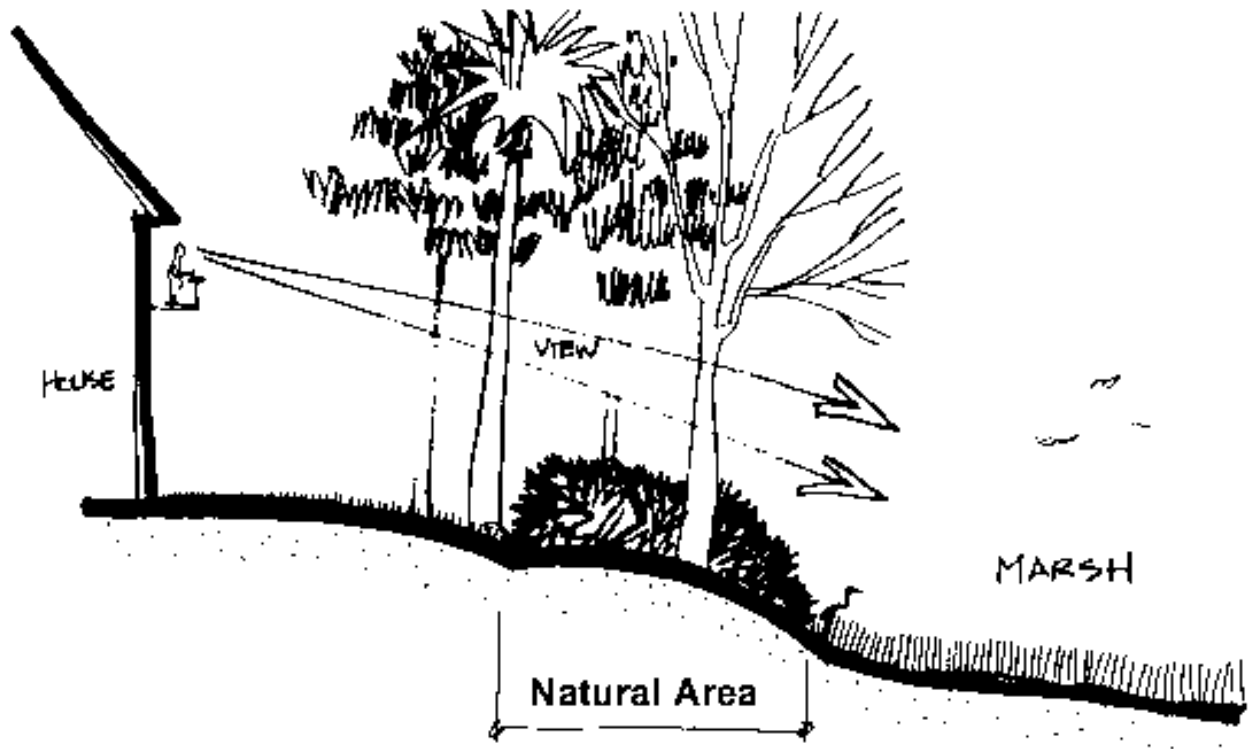


Figure 4. - Marsh View

Appendix F – Dune Edge Diagram

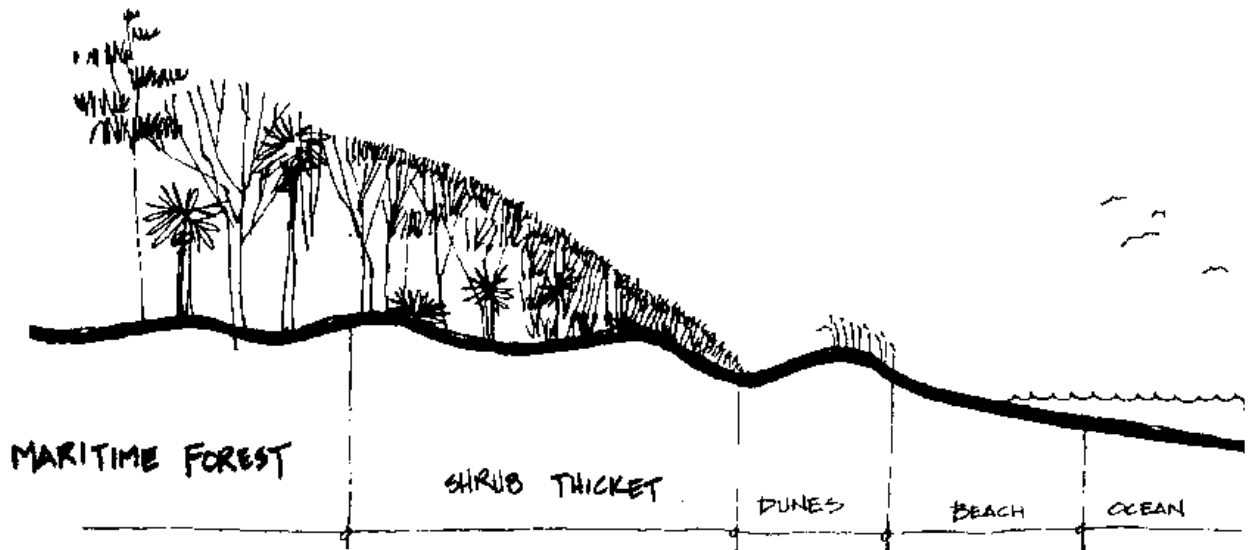


Figure 5. – Dune Edge

Appendix G – Native Trees

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Type</u>
Devils Walking Stick	Aralia	spinosa	Spines on trunk, large white bloom spikes, purple berries; red fall color; full sun.	Small deciduous tree
Redbud Tree	Cercis	canadensis	Heart shaped leaves and magenta lavender blooms in spring; semi shade preferred.	Small deciduous tree
Sumac	Rhus	copallina	Red fall leaf color; coarse texture; small tree; full sun.	Small deciduous tree
Persimmon	Diospyros	virginiana	Edible fruit in fall and consistent yellow/orange color; full sun.	Medium deciduous tree
River Birch	Betula	nigra	Salmon exfoliating bark; quick growth; full sun.	Medium deciduous tree
Swamp Willow	Salix	caroliniana	Pale yellow green foliage; short-lived tree; full sun.	Medium deciduous tree
Toothache Tree	Zanthoxylum	clava-herculis	Unusual bark surfaces, spine tipped growths on the trunks and large branches; full sun.	Medium deciduous tree
Pignut Hickory	Carya	glabra	Retains foliage until late fall; autumn color is yellow; bitter fruit is wildlife food; full sun.	Large deciduous tree
Sweet Gum	Liquidambar	styraciflua	Purple to red autumn color; sweet gum balls are wildlife food; gray bark; full sun.	Large deciduous tree
Water Oak	Quercus	nigra	Conical or rounded crown with slender branches and small leaves.	Large deciduous tree

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Type</u>
Dwarf Palmetto	Sabal	minor	Trunkless palm with fan shaped leaves grows in wet and dry soils. Grows in semi shade under trees.	Small evergreen tree
Groundsel /Salt Myrtle	Baccharis	halimifolia	Semi-evergreen with white blooms; flowers same time as goldenrod. Full sun.	Small evergreen tree
Wax Myrtle	Myrica	cerifera	Fragrant leaves; grows quickly; wood is brittle; can contribute to erosion when planted too close to the pond edge; full sun.	Small evergreen tree
Yaupon	Ilex	vomitorea	Upright growth habit; red translucent berries; sun or shade.	Small evergreen tree
Palmetto	Sabal	palmetto	Very upright form; grows in semi shade under trees.	Medium evergreen palm
Red Bay	Persea	borbonia	Thick dark green aromatic leaves; will grow in sun. If grown in light shade, tree form is less dense.	Medium evergreen tree
Southern Red Cedar	Juniperus	silicicola	Positive upright pyramidal form; full sun.	Medium evergreen tree
Laurel Oak	Quercus	laurifolia	Large canopy tree.	Large evergreen trees
Live Oak	Quercus	virginiana	Outstanding form as it ages; full sun.	Large evergreen trees
Loblolly Pine	Pinus	taeda	Cones produce significant wildlife food; full sun.	Large evergreen trees
Slash Pine	Pinus	elliottii	Cones produce significant wildlife food; full sun.	Large evergreen trees

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>	<u>Type</u>
Southern Magnolia	Magnolia	grandiflora	Outstanding fragrant, white flowers, shiny leaves with brown undersides; full sun.	Large evergreen trees
Sweet Bay Magnolia	Magnolia	virginiana	Creamy white flowers; full sun or semi shade.	Large evergreen trees

Appendix H – Native Ground Covers

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>
Black-eyed Susan	Rudbeckia	hirta	2' perennial for dry, open, sandy, disturbed areas; flowers are daisy like with yellow petals and dark center disk.
Bracken Fern	Pteridium	aquilinum	2' fern; non invasive; prefers moist areas and shade.
Coral Bean	Erythrina	herbacea	3' herbaceous shrub with prominent, red bloom spikes. Full sun to semi-shade.
Coreopsis	Coreopsis	tinctoria	18" Common annual wildflower often used in dry, open sandy sites. Yellow blooms spring to fall. Full sun.
Goldenrod	Solidago	odora	4' herbaceous perennial with long branching pyramidal shaped yellow flower heads; Full sun.
Indian Blanketflower	Gaillardia	pulchella	2' annual for dry, sandy open areas, bright yellow and red flowers. Full sun and dry conditions.
Prickly Pear Cactus	Opuntia	compressa	Large pads have spines; yellow flowers in spring. Grows in full sun and dry conditions.
Sweet Grass	Muhlenbergia	filipes	18" grass with thin leaves and wispy pink seed heads in fall. Tolerates dry conditions. Sun to part shade.
Wild Ageratum	Eupatorium	coelestinum	Perennial herb, 12-40 inches tall. Showy purple flowers in summer.

Appendix I – Invasive Non-native Trees and Shrubs

INVASIVE TREES

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>
Mimosa	Albizia	julibrissin	Small tree; aggressively re-seeds.
Tallow Tree	Triadica	sebifera	Deciduous tree; rapid grower, especially in wet areas; roots secrete chemical that prevents other plants germination in area.

INVASIVE SHRUBS

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Description</u>
Silverthorn / Russian Olive	Elaeagnus	sp.	An established landscape plant used for screening that has transitioned into natural areas, often with a detrimental effect on native species.
Chinese Privet	Ligustrum	sinense	An established landscape plant used for screening that has transitioned into natural areas having an effect on native species.
Japanese Privet	Ligustrum	japonicum	An established landscape plant used for screening that has transitioned into natural areas having an effect on native species.
Nandina	Nandina	domestica	An established landscape plant used in border plantings. It has transitioned into natural areas and has affected native species.

Appendix J – Shrub Pruning Diagram

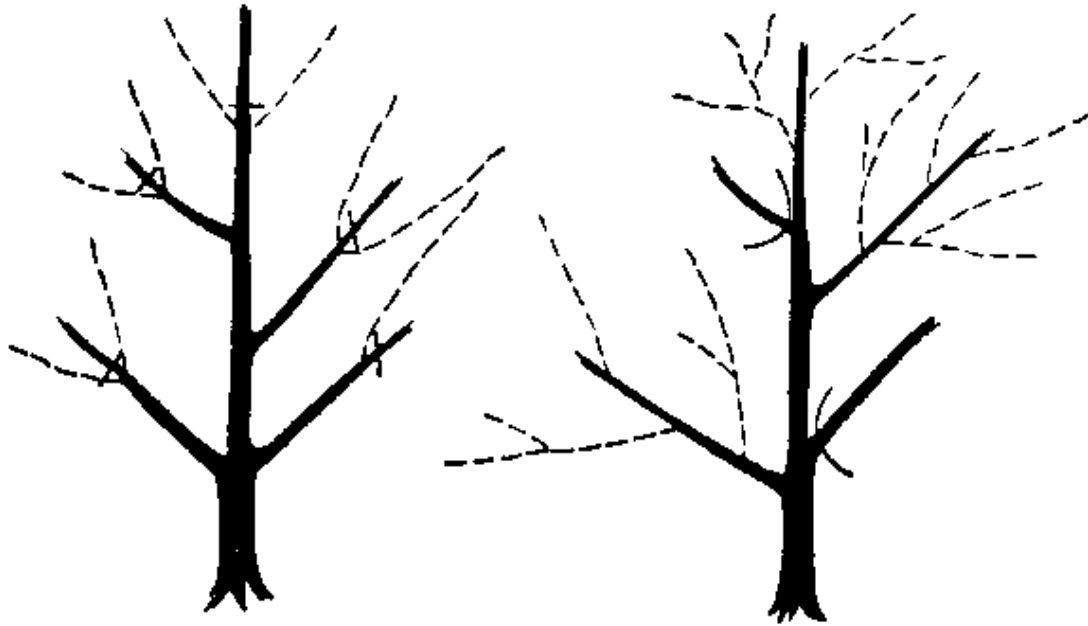


Figure 6. – Shrub Pruning

There are two pruning methods:

Shearing of plants Hedge clippers, hedge shears and electric shears are used to create clipped hedges, or plants with geometric forms and/or straight lines.

Thinning Selective removal of material from plants to shape or remove dead or diseased tissue.

The following indicates which method of pruning is to be used for certain areas of the island:

<u>Method of Pruning</u>	<u>Used For</u>
Thinning	Lake edge plantings
Thinning	Marsh edge plantings
Thinning	Beach front area plantings
Thinning or Shearing	House foundation plantings or formal plantings near the house
Thinning	Plants at side property lines shared with neighbors and plants near street

Appendix K – Soil Testing Diagram

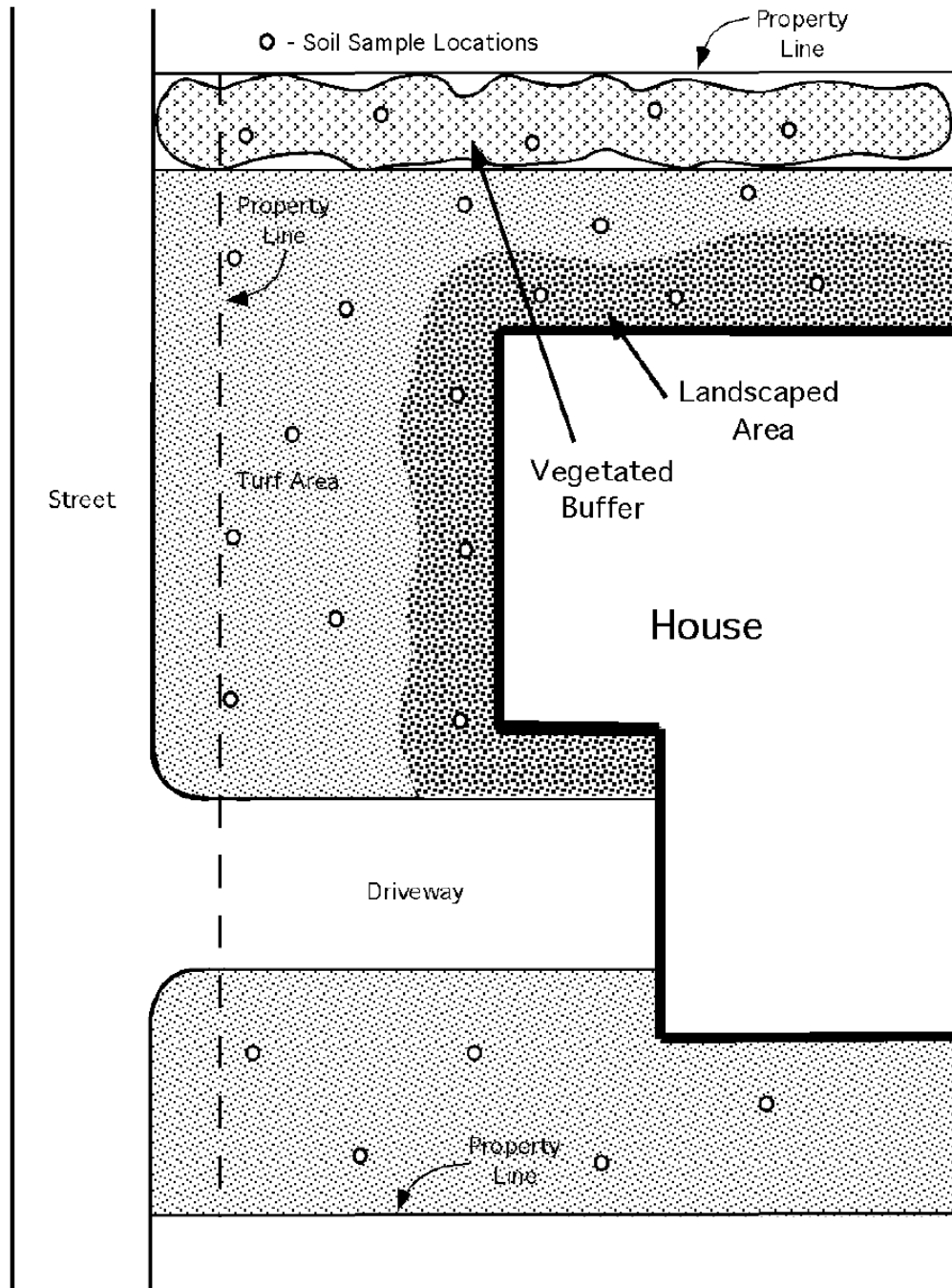


Figure 7. – Soil Testing Locations

Note: This diagram is intended only to explain generally where soil samples would be done. It is not an ARB-approved landscape prototype or plan.