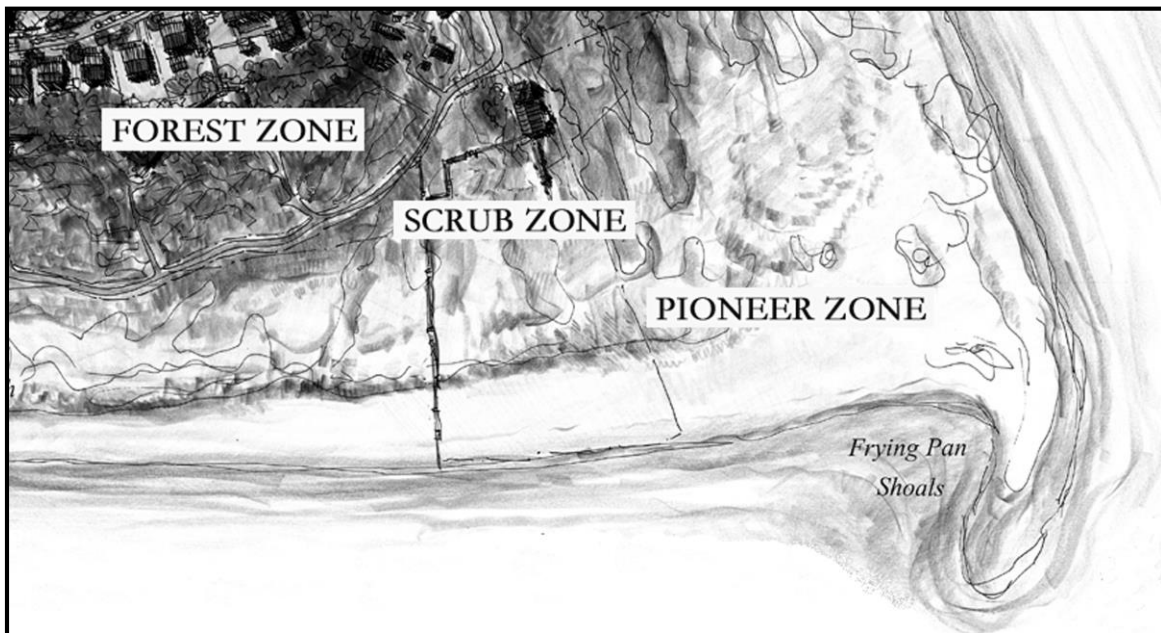


D - LANDSCAPING



*In the end we will be defined,
not by what we create,
but by what we refuse to destroy.*

-John Sawhill, Nature Conservancy CEO 1980-1990

Two major communities on Bald Head Island, the open dunes and the Maritime Evergreen Forest, have been shaped by the natural forces working on the island. The relative stability of the island has been dependent upon its maritime forest. The forest prevents wind erosion and traps wind-blown sand to eventually form the large dunes on the seaward edge. Here in the forest, many species of plant and animal life find their home. Live oak, pine, palm, bay and laurel oak provide a canopy that rises from its salt-sheared edge to about fifty or sixty feet adjacent to the salt marshes. Much of the vegetation is evergreen, and the low light levels on the forest floor preclude much understory growth.

A lesser variety of animals and vegetation occurs in the dune environment, comprising the scrub and pioneer zone. The plant varieties that do occur on the dunes are very important to the stability of these slow-moving dunes. The sea oats and other salt and wind tolerant grasses, vines, and shrubs inhibit the movement that would otherwise bury the forest.

The property owners on Bald Head Island, as stewards of this sensitive natural island environment, must take special effort to preserve it. The existing flora must be protected, and the productive natural systems of any particular mini-environment must be increased. “Natural” landscaping can help accomplish both goals. Native plants should be planted and allowed to flourish naturally, rather than establishing lawn grass or ornamental plants. “Natural” landscaping is not defined as a total abandonment of planting maintenance, but rather a controlled and guided landscape in character with the charm and beauty of Bald Head Island.

Any approved clearing and planting should take into account the environmental impact of such activities and the need to protect plants of special value to the island ecology. Important guidance about environmental impacts is contained within this Appendix, and property owners on Bald Head Island are expected to follow this guidance.

Landscape Planning

A successful site / landscape plan is composed of a number of elements that, with quality design and execution, contribute to a unified balance of the natural environment and man-made elements.

Native plants will always grow best on Bald Head Island, and the use of native grasses, wildflowers or vines for groundcover is highly encouraged. Native plants contribute to the overall resilience of the island and support native wildlife of all types.

In the dune environment, only native species should be planted on the ocean side of the dune ridge. Strategically placed appropriate shrubs can detour strong winds and, in combination with the native grasses, will stabilize shifting sands that tend to intrude on unwanted places. Installing larger plants on the dunes will result in “die back” and smaller one-to-three gallon plants from nursery stock tend to fare better.

On wooded sites, protecting and planting trees decreases temperature impacts of seasonal extremes, while at the same time providing privacy and beauty. The “leading edge” of maritime forest on the dune side is especially sensitive. Since it protects the remaining forest from the “domino effect” of salt-spray die back, its preservation is vital. Disturbance includes clearing of understory plants because the leading edge of vegetation must slope downward to the ground to prevent salt spray from penetrating under the forest canopy.

Similarly, landscape plans for elevations facing the creek should attempt to mesh with the vegetation there. Planting non-native species may result in plant loss. Wetland vegetation is another critical component. Disturbance of wetland vegetation (termed “404” areas by the Army Corps of Engineers) is to be avoided and should be delineated by a trained surveyor.

REQUIREMENTS

1. Engage a trained landscape design professional.
2. Obtain a topographic survey or use the original survey prepared by a surveyor registered in the state of NC, (if less than 2 years old).
3. Verify setbacks of the property as determined by the Covenants, Design Guidelines, and Village Ordinance, as well as government waterfront setback controls and maximum allowable impervious coverage (see Size Requirements section) of your house.
4. Develop a landscape plan that includes existing opportunities afforded by your property, such as:
 - a. Existing plant material
 - b. Drainage patterns on or near the site
 - c. Views in all directions, to and from the site
 - d. Sensitive environmental areas

5. Unless otherwise approved by ARC or the ARC coordinator, all new plants must come from plants listed on the Plant Lists on pages — to —. Plants indigenous to the island (identified as “Native” on the Plant list) must be the predominant source for landscape plans. It is required that a minimum of 70% of the new plant material be native to BHI and exotic plants (not native to BHI or to North Carolina) comprise no more than 10% of a landscape plan.
6. No known Invasive Exotic Plants may be planted. (See Plant Lists)
7. Plants of Special Concern, as noted in the Plant lists that follow, must be preserved and protected to the maximum extent possible.
8. Artificial plants are not allowed.
9. During construction, areas of the property that are not within the building pad should not be disturbed, i.e. there should be no clearing of the understory beyond the building pad. Any areas that are disturbed must be restored to their original natural character.
10. New construction and renovation landscaping plan submittals must include:
 - a. Date of plan preparation, project name, address & property owner, North arrow, graphic scale (the required scale is 1” = 10’).
 - b. The site plan must include variety, size and location of plant material and dimensions of hardscape.
 - c. Plant list with quantity, botanical name, common name, size, and special specifications.
 - d. Detail drawings showing specifications for hardscaping, such as grill pads, planters, extra parking areas, pathways, decking, pavers, stepping stones, fences, arbors, notation of irrigation components, etc..
 - e. Show location for mitigation trees and clustered vegetation, as appropriate, if mitigation is required.
 - f. Calculate any impervious surface square footage that the Landscape Plan will add to the existing site impervious coverage totals, including retaining walls, pavers, and the use of other hardscape details.

NOTE: *After a Certificate of Occupancy is issued, the builder, as the property owner’s representative, is required to contact the ARC Coordinator to schedule a final inspection. The ARC does not permit variances from approved plans, such as substitutions, downsizing, or a reduction in quantities of plants, without re-submittal and re-approval.*

Landscape Changes for Existing Homes:

REQUIREMENTS

1. Any landscaping changes must be consistent with the natural beauty of the Island and the original landscaping plan and must meet requirements for native plants and ARC approval.
2. Landscaping improvements, plantings or alterations to be installed by a Property Owner or Landscape Contractor requires prior consultation with the ARC Coordinator. The Coordinator will help determine that the plants are non-invasive and appropriate for BHI, and evaluate the extent of the work to be done to determine whether a Landscape Plan must be submitted to the ARC for approval.
3. The ARC requires approval for the removal of trees and/or vegetation 1 inch or greater in diameter measured 48” along the trunk from ground level, tree limbs of 3 inches or more in diameter and clustered growth vegetation two square feet or more at ground level regardless of branching habits or diameter.
4. Changing the topography of any lot requires ARC approval. For example: leveling or removing an existing natural feature from a lot.

5. It's important that contracted (weekly or monthly) yard maintenance involve only minimal trimming. Maintenance should not involve the removal of the understory.

CLEARING, TRIMMING AND MAINTAINING:

REQUIREMENTS

1. **Lot clearing for sale of property** - Clearing of the entire understory or clearing even to the extent required for survey for the sole purpose of selling a lot is **not** permitted. However, in order to provide ease of access, a path of 18 inches in width may be cleared as long as no trees, tree limbs or clustered growth subject to Village or ARC approval are disturbed. Any violation due to more extensive clearing will be subject to fines and/or mitigation.
2. **Lot clearing for survey or staking**– Some clearing of understory trees and shrubs may be required to prepare a site for survey or to stake the proposed building site. Permission to clear such understory trees and shrubs shall not be required by the ARC or Building Inspector for the purpose of surveying, but clearing shall be limited to trees and/or vegetation less than a 1 inch in diameter at 48 inches as measured from the base at ground level or any tree limb less than 3 inches in diameter. Any vegetation larger than this, or any vegetation that exists as clustered growth, or having horizontal branching habits must be approved for removal regardless of size of diameter. Violations of this requirement are subject to mitigation and fines.
3. **Lot clearing for any construction** – All construction sites must adhere to provisions in other sections of this document. The intent when clearing for construction or renovation projects should be to disturb as small an area as possible. Prior to any vegetation removal, the site plan must indicate any trees, shrubs or clustered growth to be removed and have ARC approval.

Prior to clearing a building pad, an assessment of existing native plants and those that might be moved, rather than removed, is highly recommended. These plants are very important to the ecology of the Island and the more native plants that are saved, the fewer replacement plants will be needed.

Understory should be removed only in the designated building area. Building materials or equipment should not be allowed to destroy remaining areas of understory or be placed near trees. All trees should be protected with fencing and this fencing must remain in place for the entire construction process.

4. **Lot clearing for improving the view** – Reasonable trimming for maintenance is allowed but all rules about trimming trees and eliminating understory must be adhered to. Typically, maintenance does not entail trimming trees up to 20 feet from the ground, clearing understory, or removing branches that are not impinging on structures. Approval must be received before any regulated trees, vegetation, understory or clustered growth is removed. Prior to any clearing for view please review BHA Common Area Policy for more details and contact the ARC Coordinator for more information.
5. **Canopy and Understory Trimming** - The cutting of the forest canopy, or the thinning of its understory, may expose remaining vegetation to harmful salt-laden winds, resulting in damage. For this reason, cutting and thinning must be kept to an absolute minimum. In addition to the negative impacts of salt spray, removing vegetation from the understory to “open up” one’s yard or landscape will also create new areas of light in the forest floor will cause vines and other plants that may not be wanted to take hold, and will eliminate habitat that supports an interesting variety of wildlife.
6. **Mulch:** All mulch used must come from the island mulch site to help control pests and plant diseases transferred through other types of mulch not indigenous to the island.

7. **Grass:** Grass lawns are not allowed. However, there are many BHI native grasses that are a good addition to landscapes. (see Plant Lists)
8. **Water:** Water requirements for plants must be planned for during the first year while the plants become established.
9. **Herbicides:** It is inconsistent with the goals on BHI to use herbicides of any kind, including Roundup. Herbicides can damage the root zones of desirable trees and shrubs. Avoid fertilizing, watering, and anything that will compact the soil. Herbicides will enter the aquifer beneath the island from which we get our drinking water.
10. **Avoid using bush-hogs** when removing vegetation. It is very easy to scrape and damage desirable trees and shrubs with heavy equipment and to increase undesirable compaction and root system damage. Bush hogging will also remove the very thin (1”) layer of topsoil making replanting much more difficult. The only way to selectively remove some plants while protecting and preserving others is through the use of hand labor with pruning shears and pruning saws.

Tree and Vegetation Removal/Mitigation

REQUIREMENTS

1. For Existing Homes, Lots, or New Construction: All existing trees 1 inch or greater in diameter at 48 inches as measured from the base of the tree at ground level shall be entered on a tree survey and submitted to the ARC with site plans. This survey shall depict the exact location, size and drip line or canopy line of the trees and identify clearly all trees that will be removed, including any tree limbs 3 inches in diameter or more to be removed, and all trees that will remain, along with a description of steps that will be taken to protect them. Additionally, vegetation which exists as two square feet or more of clustered growth at ground level regardless of branching habits or diameter shall also be noted on the survey, and if any of this type of vegetation is to be removed, it should be clearly identified.
2. The ARC may require a mitigation rate of up to 100% for each inch of diameter of trees or vegetation to be removed. Depending upon the number of trees, size of vegetation removed and the landscaping planned by the owner, the requirement of replacement plants may be waived, or the ARC may determine that other plant materials may be substituted where visually appropriate. If replacement plants cannot be contained on a lot, the ARC may instruct location of same in a specified common or open area.
3. In exercising its discretion respecting these tree and vegetation mitigation Guidelines, the ARC shall take into consideration, among other things, the number and species of trees/plants being requested for removal; any hardship to the property owner; the remaining foliage, trees, and other plant species as may exist on a lot and/or as may be proposed to be added by the owner as a part of the landscaping plan; the size, shape, and topography of the lot; the size, species, and value of proposed replacement trees; and any other relevant factors.
4. All specimen trees shown on the tree survey outside of the building envelope shall be carefully protected from construction activities in any manner deemed appropriate by the ARC, including protective fencing. This fencing shall remain in place throughout the construction process (see Construction/Site Guidelines).

Unauthorized Removal of Trees and Vegetation

The unauthorized removal of trees or clustered growth on any property is considered a serious event and violation. Both Village Ordinance and Association Design Guidelines restrict removal of trees and clustered growth. In some cases you are required to get only ARC approval and in others you need both ARC and Village approval. Regarding the removal of trees, tree limbs, vegetation and clustered growth, in some instances the Association Design Guidelines requirements are stricter than the Village Ordinance. Failure to get ARC approval prior to removal will result in fines and mitigation.

Village Ordinance provides that removal of any tree or trees 3 inches or greater in diameter at 48 inches above grade requires permission and/or a landscape permit from the Village Building Inspector, even if the tree is determined to be dead or diseased. Per Village Ordinance, removal of branches of 5 inches or more in diameter also requires Village approval. ARC approval is required to remove trees and/or vegetation 1 inch in diameter or greater, tree limbs of 3 inches or more in diameter and clustered growth vegetation two square feet in area or more at ground level regardless of branching habits or diameter. Please see Appendix F, at the back of this document, for the Village Ordinance on tree cutting and removal.

The ARC supports the process in the Village Ordinance but also requires its own approvals. Those removing trees or branches without first obtaining ARC approval and / or Village approval and landscaping permit will be required to obtain a Village landscaping permit, pay the required fine, and mitigate loss of such tree or trees. In accordance with Village Ordinance, fines up to \$500 per inch of diameter at 48 inches above grade of the cut tree may be considered. ARC fines may be imposed, and in some cases they may be levied in addition to Village fines.

If mitigation is required, the property owner may be required to replant a tree(s) of like kind and of the same size as the cut tree(s) within 180 days of the fine, guaranteeing the tree to survive for one year after the replanting date.

The Building Inspector must approve the location(s) of the replanted tree(s). The ARC also has the discretion to require submittal of a landscaping plan to the ARC for approval.

In the case of “competing trees”, the Building Inspector shall make a decision of which tree to remove. The removal of dead trees requires the same ARC and Village approvals as live trees, but does not require a Village contractor permit. If a decision by the Building Inspector is disputed, the property owner must provide sufficient evidence to show the tree is dead, represents a danger to individuals or property, or that the tree is diseased and will not live.

Removal or altering vegetation of any size on Common Area requires permission of the Board of Directors or its designated committee. Violation of this requirement may result in penalties and fines being imposed for trespassing/vandalism of private property, as authorized by the Village Ordinances.

Plant Lists

The following lists are organized by environment. For the most part, the lists are based upon plants that have been found to be native to Bald Head Island. Native plants are uniquely adapted to local environmental conditions, and they also provide critical food and shelter for birds, animals and insects. In reviewing landscape plans, the ARC will consider plants not on these lists if they are accompanied by documentation of native status to BHI or to Brunswick County or North Carolina.

Source of Plant information:

The native plant botanical and common names used in this document is based upon the work of Alan S. Weakley of the University of North Carolina Herbarium (NCU), North Carolina Botanical Garden, and University of North Carolina at Chapel Hill. His document is titled “Flora of the Southern and Mid-Atlantic States”; Working Draft of 21 May 2015, and is available at:

http://www.herbarium.unc.edu/FloraArchives/WeakleyFlora_2015-05-29.pdf

References for plants identified as native to Bald Head Island:

LeBlond, R.J. 1995. “Inventory of the Natural Areas and Rare Species of Brunswick County, North Carolina”. N.C. Natural Heritage Program, DPR, DEHNR, Raleigh.

Mayes, C. H. 1984. “The Flora of Smith Island, Brunswick County, North Carolina”. M.S. Thesis, University of North Carolina-Wilmington.

VegBank Website - www.vegbank.org (search on Bald Head Island, plots used 1988, 2005, and 2009)

Please note plants below with special identifiers:

- * *Recognized as North Carolina rare species.*
- *Most readily available plants.*

Mitigation Replacement Trees:

Dune Environment:

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Ilex vomitoria</i>	Yaupon Holly
■	<i>Juniperus virginiana var. silicicola</i> and its cultivars	Coastal Red Cedar
■	<i>Morella cerifera / Myrica cerifera</i>	Wax-myrtle
	<i>Zanthoxylum clava-herculis</i>	Hercules'-club / Toothache Tree

Dune Scrub, Marsh Edge, Maritime Forest Edge Environment:

	<u>Botanical Name</u>	<u>Common Name(s)</u>
■	<i>Ilex vomitoria</i>	Yaupon Holly
■	<i>Morella cerifera / Myrica cerifera</i>	Wax-myrtle
■	<i>Quercus hemisphaerica / laurifolia</i>	Laurel Oak
■	<i>Quercus virginiana</i>	Live Oak
■	<i>Sabal palmetto</i> *	Sabal Palm / Cabbage Palmetto

	<i>Sideroxylon tenax</i> *	Tough Buckthorn / Tough Bumelia
	<i>Zanthoxylum clava-herculis</i>	Hercules'-club / Toothache Tree

Maritime Forest Environment

	<u>Botanical Name</u>	<u>Common Name(s)</u>
■	<i>Acer rubrum</i>	Red Maple
	<i>Carpinus caroliniana var.caroliniana</i>	Coastal Hornbeam / Ironwood
■	<i>Cornus florida</i>	Flowering Dogwood
■	<i>Juniperus virginiana var. silicicola</i> and its cultivars	Coastal Red Cedar
■	<i>Ilex opaca</i> and its cultivars	American Holly
	<i>Morus rubra</i>	Red Mulberry
	<i>Persea borbonia</i>	Red Bay
■	<i>Pinus taeda</i>	Loblolly Pine
■	<i>Prunus caroliniana</i>	Carolina Laurel Cherry
■	<i>Quercus hemisphaerica / laurifolia</i>	Laurel Oak
■	<i>Quercus virginiana</i>	Live Oak
■	<i>Sabal palmetto</i> *	Sabal Palm / Cabbage Palmetto
	<i>Sideroxylon tenax</i> *	Tough Buckthorn / Tough Bumelia

Plants of Special Conservation Concern

The following lists only some of the plants that are very important to the ecology of Bald Head Island, and that help to define its unique beauty and character. Special care should be taken to protect and preserve all of these plants.

	<u>Botanical Name</u>	<u>Common Name</u>
	<i>Amarathus pumilus</i> *	Seabeach Amaranth
	<i>Baccharis glomeruliflora</i> *	Silverling
	<i>Baccharis halimifolia</i>	Groundsel Tree
	<i>Borrichia frutescens</i>	Seaside Oxeye
■	<i>Callicarpa americana</i>	American Beautyberry
■	<i>Carpinus caroliniana var.caroliniana</i>	Coastal Hornbeam / Ironwood
■	<i>Cornus florida</i>	Flowering Dogwood
	<i>Euphorbia bombensis</i> *	Southern Seaside Spurge / Dixie Sandmat

■	<i>Gelsemium sempervirens</i>	Carolina Jessamine
■	<i>Ilex opaca</i>	American Holly
■	<i>Ilex vomitoria</i>	Yaupon Holly
	<i>Ipomoea imperati</i> *	Beach Morning-glory
	<i>Juncus roemerianus</i>	Black Needle Rush
■	<i>Juniperus virginiana var. silicicola</i>	Coastal Red Cedar / Southern Red Cedar
	<i>Limonium carolinianum</i>	Carolina Sea-lavender
■	<i>Lonicera sempervirens</i>	Coral Honeysuckle
■	<i>Mitchella repens</i>	Partridge-berry
■	<i>Morella cerifera / Myrica cerifera</i>	Wax-myrtle
	<i>Oplismenus setarius</i> *	Wood-grass / Basket-grass
■	<i>Panicum amarum</i>	Bitter Panicum / Bitter Seabeach Grass
■	<i>Parthenocissus quinquefolia</i>	Virginia-creeper
	<i>Persea borbonia</i>	Red Bay
■	<i>Pinus taeda</i>	Loblolly Pine
	<i>Pleopeltis polypoides</i>	Resurrection Fern
■	<i>Quercus hemisphaerica / laurifolia</i>	Laurel Oak
■	<i>Quercus virginiana</i>	Live Oak
■	<i>Rhynchospora colorata</i>	Narrowleaf Whitetop Sedge / Starrush
■	<i>Sabal minor</i>	Dwarf Palmetto
■	<i>Sabal palmetto</i> *	Sabal Palm / Cabbage Palmetto
	<i>Salicornia virginica</i>	Glasswort / Samphire
	<i>Sideroxylon tenax</i> *	Tough Buckthorn / Tough Bumelia
	<i>Sporobolus alterniflorus / Spartina alterniflorus</i>	Saltmeadow Cordgrass / Saltmarsh Cordgrass
	<i>Sporobolus pumilus / Spartina patens</i>	Small Saltmeadow Cordgrass
	<i>Tillandsia usneoides</i>	Spanish-moss
	<i>Trichostema sp. 1</i> *	Carolina Blue Curls
■	<i>Uniola paniculata</i>	Sea Oats
	<i>Yucca gloriosa</i> *	Mound-lily Yucca
	<i>Zanthoxylum clava-herculis</i>	Hercules'-club / Toothache Tree

Native Plants for the Dune Environment:

Plants listed in the dune sections below have various salt-wind resistance and awareness of this tolerance is crucial for successful planting. “Lead” plants indigenous to the dune pioneer zone may be planted as a low first row, followed by plants gradually taller and less salt tolerant to create a vegetative salt-wind barrier.

Dune: Trees

Most all of these trees should be planted on the leeward side of buildings or fences in the dune area. Most trees will not survive in the dune area without some form of protection.

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Ilex vomitoria</i>	Yaupon Holly
	<i>Juniperus virginiana</i> var. <i>silicicola</i> and its cultivars	Coastal Red Cedar
■	<i>Morella cerifera</i> / <i>Myrica cerifera</i>	Wax-myrtle
	<i>Zanthoxylum clava-herculis</i>	Hercules'-club / Toothache Tree

Dune: Shrubs

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Ilex vomitoria</i>	Yaupon Holly
■	<i>Morella cerifera</i> / <i>Myrica cerifera</i>	Wax-myrtle
	<i>Opuntia drummondii</i>	Dune Prickly-pear
	<i>Opuntia mesacantha</i> spp. <i>mesacantha</i>	Prickly-pear
	<i>Yucca gloriosa</i> *	Mound-lily Yucca
	<i>Yucca aloifolia</i>	Spanish Dagger Yucca

Dune: Grasses, Perennials, and Annuals

The ideal grass coverage is to maintain a fairly open stand with about two-thirds to three-fourths of the sand surface under vegetative cover. Remember, use the Sea Oats and Bitter Panicum only in the primary dune area with shifting sand. Other less salt tolerant grasses should be used landward of the frontal dunes.

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Andropogon glomeratus</i>	Bushy Bluestem
	<i>Croton punctatus</i>	Silverleaf Croton
	<i>Euphorbia bombensis</i> *	Southern Seaside Spurge / Dixie Sandmat
	<i>Euphorbia polygonifolia</i>	Northern Seaside Spurge / Northern Sandmat
■	<i>Gaillardia pulchella</i> var. <i>drummondii</i>	Indian Blanket / Beach Blanket-flower
	<i>Heterotheca subaxillaris</i>	Dune Camphorweed
	<i>Hydrocotyle bonariensis</i>	Pennywort
	<i>Iva frutescens</i>	Maritime Marsh-elder

	<i>Iva imbricata</i>	Dune Marsh-elder
■	<i>Muhlenbergia capillaris</i>	Purple Muhly Hairgrass
■	<i>Muhlenbergia sericea</i>	Sweet Grass
	<i>Opuntia drummondii</i>	Dune Prickly-pear
	<i>Opuntia mesacantha</i>	Prickly-pear
■	<i>Panicum amarum</i> and its cultivars	Bitter Panicum / Bitter Seabeach Grass
■	<i>Solidago sempervirens</i>	Seaside Goldenrod
	<i>Strophostyles helvola</i>	Annual Sand Bean
	<i>Trichostema sp. 1*</i>	Carolina Blue Curls
■	<i>Uniola paniculata</i>	Sea Oats

Dune: Vines

In the dune zone, vines make excellent groundcover, covers for trellises, and are beautiful when allowed to scramble over other shrubs. Such scrambling is not usually detrimental to the shrubs and can provide a beautiful contrast. Vines should never be removed from the Dune ecosystem because they help cement the sand and ultimately support the growth of other plants.

	<u>Common Name (s)</u>	<u>Botanical Name</u>
	<i>Ipomoea imperati*</i>	Beach Morning-glory
■	<i>Lonicera sempervirens</i>	Coral Honeysuckle
■	<i>Parthenocissus quinquefolia</i>	Virginia Creeper
	<i>Smilax auriculata</i>	Dune Greenbriar
	<i>Strophostyles helvola</i>	Annual Sand Bean

Native Plants for the Dune Scrub, Maritime Scrub, & Marsh Edge Environments:

Dune Scrub, Maritime Scrub, and Marsh Edge are all of the areas that are on the perimeters of the primary dunes, the maritime forest and the marsh. In the case of the dunes, these areas are more protected; in the case of the maritime forest, these areas have more sun; in the case of the marsh, these areas are dryer. In most cases, the lists of plants in this section would probably not survive in the primary part of each area. However, this is subject to change or evolution.

Dune Scrub, Maritime Scrub, & Marsh Edge: Trees

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Ilex vomitoria</i>	Yaupon Holly
■	<i>Juniperus virginiana var. silicicola</i> and	Coastal Red Cedar

	its cultivars	
■	<i>Morella cerifera</i> / <i>Myrica cerifera</i>	Wax-myrtle
■	<i>Sabal palmetto</i> *	Sabal Palm / Cabbage Palmetto
	<i>Zanthoxylum clava-herculis</i>	Hercules'-club / Toothache Tree

Dune Scrub, Maritime Scrub, & Marsh Edge: **Shrubs**

	<u>Botanical Name</u>	<u>Common Name</u>
	<i>Baccharis halimifolia</i>	Groundsel Tree
■	<i>Callicarpa americana</i>	American Beautyberry
■	<i>Ilex vomitoria</i>	Yaupon Holly
■	<i>Morella cerifera</i> / <i>Myrica cerifera</i>	Wax-myrtle
	<i>Opuntia drummondii</i>	Dune Prickly-pear
	<i>Opuntia mesacantha</i> spp. <i>mesacantha</i>	Prickly-pear
■	<i>Sabal minor</i>	Dwarf Palmetto
	<i>Sideroxylon tenax</i> *	Tough Buckthorn / Tough Bumelia
	<i>Yucca aloifolia</i>	Spanish Dagger Yucca
	<i>Yucca gloriosa</i> *	Mound-lily Yucca

Dune Scrub, Maritime Scrub, & Marsh Edge: **Grasses, Perennials, and Annuals**

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Andropogon glomeratus</i>	Bushy Bluestem
	<i>Borrchia frutescens</i>	Seaside Oxeye
	<i>Euphorbia bombensis</i> *	Southern Seaside Spurge / Dixie Sandmat
	<i>Euphorbia polygonifolia</i>	Northern Seaside Spurge / Northern Sandmat
	<i>Heterotheca subaxillaris</i>	Dune Camphorweed
	<i>Hypericum hypericoides</i>	St. Andrew's Cross
	<i>Iva frutescens</i>	Maritime Marsh-elder
	<i>Juncus roemerianus</i>	Black Needle Rush
	<i>Limonium carolinianum</i>	Carolina Sea-lavender
■	<i>Muhlenbergia capillaris</i>	Purple Muhly Hairgrass
■	<i>Muhlenbergia sericea</i>	Sweet Grass
■	<i>Rhynchospora colorata</i> *	Narrowleaf Whitetop Sedge / Starrush
	<i>Sabatia stellaris</i>	Annual Sea Pink
	<i>Salicornia virginica</i>	Glasswort / Samphire

	<i>Sporobolus pumilus / Spartina patens</i>	Small Saltmeadow Cordgrass
	<i>Sporobolus alterniflorus / Spartina alterniflorus</i>	Saltmeadow Cordgrass / Saltmarsh Cordgrass
	<i>Strophostyles helvola</i>	Annual Sand Bean
	<i>Symphotrichum tenuifolium</i>	Salt Marsh Aster
	<i>Trichostema sp. 1*</i>	Carolina Blue Curls

Dune Scrub, Maritime Scrub, & Marsh Edge: **Vines**

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Gelsemium sempervirens</i>	Carolina Jessamine
	<i>Ipomoea sagittata</i>	Arrowleaf Morning-glory
■	<i>Lonicera sempervirens</i>	Coral Honeysuckle
	<i>Nekemias arborea / Ampelopsis arborea</i>	Peppervine
■	<i>Passiflora incarnata</i>	Purple Passionflower
■	<i>Parthenocissus quinquefolia</i>	Virginia Creeper
■	<i>Passiflora lutea</i>	Yellow Passionflower

Native Plants for the Maritime Forest Environment:

Maritime Forest: **Trees**

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Acer rubrum</i>	Red Maple
■	<i>Carpinus caroliniana var. caroliniana</i>	Coastal Hornbeam / Ironwood
■	<i>Cornus florida</i>	Flowering Dogwood
■	<i>Ilex opaca</i> and its cultivars	American Holly
	<i>Morus rubra</i>	Red Mulberry
	<i>Persea borbonia</i>	Red Bay
■	<i>Pinus taeda</i>	Loblolly Pine
■	<i>Prunus caroliniana</i>	Carolina Laurel Cherry
■	<i>Quercus hemisphaerica / laurifolia</i>	Laurel Oak
■	<i>Quercus virginiana</i>	Live Oak
■	<i>Sabal palmetto*</i>	Sabal Palm / Cabbage Palmetto
	<i>Sideroxylon tenax*</i>	Tough Buckthorn / Tough Bumelia

Maritime Forest: **Shrubs**

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Callicarpa americana</i>	American Beautyberry
■	<i>Cartrema americana / Osmanthus americanus</i>	Devilwood / Wild Olive
■	<i>Ilex vomitoria</i>	Yaupon Holly
■	<i>Morella cerifera / Myrica cerifera</i>	Wax-myrtle
■	<i>Sabal minor</i>	Dwarf Palmetto
	<i>Sideroxylon tenax</i> *	Tough Buckthorn / Tough Bumelia

Maritime Forest: Grasses, Perennials, and Annuals

	<u>Botanical Name</u>	<u>Common Name</u>
■	<i>Asplenium platyneuron</i>	Ebony Spleenwort Fern
	<i>Carex spp.</i>	Native Sedges
	<i>Ipomoea sagittata</i>	Arrowleaf Morning-glory
■	<i>Mitchella repens</i>	Partridge-berry
	<i>Oplismenus setarius</i> *	Woods-grass

Maritime Forest: Vines

Vines are an integral part of the maritime forest ecosystem. All vines help to weave together the canopy, which allows it to shear off hurricane force winds, and protect homes and wildlife sheltered below. Even poison ivy can perform this important function.

	<u>Botanical Name</u>	<u>Common Name</u>
	<i>Berchemia scandens</i>	Carolina Supplejack
■	<i>Gelsemium sempervirens</i>	Carolina Jessamine
	<i>Ipomoea sagittata</i>	Arrowleaf Morning-glory
■	<i>Lonicera sempervirens</i>	Coral Honeysuckle
■	<i>Muscadinia rotundifolia / Vitis rotundifolia</i>	Muscadine Grape
	<i>Nekemias arborea / Ampelopsis arborea</i>	Peppervine
■	<i>Parthenocissus quinquefolia</i>	Virginia Creeper
■	<i>Passiflora incarnata</i>	Purple Passionflower
■	<i>Passiflora lutea</i>	Yellow Passionflower
	<i>Smilax bona-nox</i>	Catbriar
	<i>Smilax rotundifolia</i>	Common Greenbriar
	<i>Toxicodendron radicans</i>	Poison Ivy

Plants Non-Native to BHI:

None of the following plants are native to Bald Head Island, but most are native to Brunswick County (BC) or North Carolina (NC). Those from beyond NC are not known to be detrimental to the BHI environment and grow well on BHI. These lists are subject to change and addition. Some plants may eventually be determined to be native, and be moved to different lists.

The Dune Environment:

Non-Native Dune: **Trees**

<u>Botanical Name</u>	<u>Common Name</u>	<u>Origin</u>
<i>Juniperus virginiana</i> var. <i>virginiana</i> and its cultivars	Eastern Red Cedar	BC

Non-Native Dune: **Shrubs**

<u>Botanical Name</u>	<u>Common Name</u>	<u>Origin</u>
<i>Eriobotrya japonica</i>	Loquat	Asia
<i>Juniperus chinensis</i> and its cultivars	Chinese Juniper	China
<i>Nerium oleander</i>	Oleander	Asia & Mediterranean
<i>Pittosporum tobira</i> and its cultivars	Pittosporum	Asia
<i>Rosmarinus officinalis</i>	Rosemary	Mediterranean
<i>Rhaphiolepis</i> spp. and its cultivars	Indian Hawthorn	Asia
<i>Yucca filamentosa</i>	Adams Needle	BC

Non-Native Dune: **Grasses, Perennials, and Annuals**

<u>Botanical Name</u>	<u>Common Name(s)</u>	<u>Origin</u>
<i>Andropogon virginicus</i>	Broomsedge	BC
<i>Baptisia australis</i>	Blue Wild Indigo	VA,MD,WV, West of WV
<i>Coreopsis lanceolata</i>	Coreopsis	BC
<i>Coreopsis tinctoria</i>	Plains Coreopsis / Calloopsis	Midwest
<i>Echinochloa walteri</i>	Swamp Barnyard-grass	BC
<i>Elymus hystrix</i>	Bottlebrush Grass	BC
<i>Elymus virginicus</i>	Eastern Wild-rye	BC
<i>Eragrostis elliottii</i>	Blue Love Grass	BC
<i>Eragrostis spectabilis</i>	Purple Lovegrass	BC
<i>Erythrina herbacea</i>	Coral Bean /Cardinal-spear	BC

<i>Gaura lindheimeri</i>	Gaura	LA, OK, TX
<i>Juncus 16unctat</i>	Soft Rush	BC
<i>Lantana camara</i>	Lantana	Central & South America
<i>Monardo 16unctate</i>	Eastern Horse-mint	BC
<i>Panicum virgatum</i> and its cultivars	Switchgrass	BC
<i>Paspalum vaginatum</i>	Sand Knotgrass	BC
<i>Perovskia atriplicifolia</i>	Russian Sage	Himalayas-China
<i>Salvia leucantha</i>	Mexican Bush Sage	Mexico
<i>Schizachyrium littorale</i>	Seaside Little Bluestem	BC
<i>Schizachyrium scoparium</i> and its cultivars	Little Bluestem	BC
<i>Sporobolus heterolepsis</i>	Prairie Dropseed	Western NC and Midwest
<i>Triplasis purpurea</i>	Purple Sandgrass	BC

The Maritime Forest Environment:

Non-Native Maritime Forest: **Trees**

<u>Botanical Name</u>	<u>Common Name</u>	<u>Origin</u>
<i>Cercis canadensis</i>	Eastern Redbud	BC
<i>Chionanthus virginicus</i>	Fringe-tree	BC
<i>Diospyros virginiana</i>	Persimmon	BC
<i>Juniperus virginiana</i> var. <i>virginiana</i> and its cultivars	Eastern Red Cedar	BC
<i>Magnolia grandiflora</i>	Southern Magnolia	BC
<i>Magnolia virginiana</i>	Sweetbay Magnolia	BC
<i>Prunus angustifolia</i>	Chickasaw Plum	NC
<i>Prunus serotina</i>	Black Cherry	BC
<i>Quercus nigra</i>	Water Oak	BC

Non-Native Maritime Forest: **Shrubs**

<u>Botanical Name</u>	<u>Common Name</u>	<u>Origin</u>
<i>Calycanthus floridus</i>	Sweet-shrub / Carolina Allspice	NC
<i>Clethra alnifolia</i>	Summersweet	BC
<i>Cycas revoluta</i>	Sago Palm	Japan

<i>Itea virginica</i>	Virginia Sweetspire	BC
<i>Pittosporum tobira</i> and its cultivars	Pittosporum	Asia
<i>Rhus copallina</i>	Winged Sumac	BC
<i>Viburnum nudum</i>	Possumhaw	BC
<i>Viburnum rufidulum</i>	Southern Blackhaw	BC

Non-Native Maritime Forest: **Grasses, Perennials, and Annuals**

<u>Botanical Name</u>	<u>Common Name</u>	<u>Origin</u>
<i>Crytomium falcatum</i>	Japanese Holly Fern	Asia
<i>Galactia regularis</i>	Milk Pea	BC
<i>Monardo punctata</i>	Eastern Horse-mint	BC
<i>Salvia leucantha</i>	Mexican Bush Sage	Mexico

Non-Native Maritime Forest: **Vines**

<u>Botanical Name</u>	<u>Common Name(s)</u>	<u>Origin</u>
<i>Trachelospermum jasminoides</i>	Confederate Jasmine	Asia

Invasive Exotic Plants

Invasive Exotic Plants are non-native plants that have either been introduced or have escaped into areas in which they do not naturally occur. If planted, they will spread and displace native plants in the ecosystem. The following list is a small sample of invasive exotic plants that are particularly noxious, or are becoming so, in coastal landscapes of North Carolina. These plants must be avoided, and eradicated if possible from Bald Head Island. Invasive Exotic Plants will not be allowed in Landscape plans submitted to the ARC.

The **Rankings** on this list indicate how invasive the plants are:

Rank 1 = “severe threat”

Rank 2 = “significant threat”

Rank 3 = “lesser threat”

The first column indicates whether the plant has been found on BHI. Indications in this column will evolve over time.

The North Carolina Native Plant Society’s Invasive Exotic Species list was used to compile the following list. Much more information on native plants is available on their website:

http://www.ncwildflower.org/index.php/plant_galleries/invasives_list

Invasive Exotic: **Trees**

<u>Found On BHI</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Rank</u>
	<i>Albizia julibrissin</i>	Mimosa/ Silk Tree	1

	<i>Morus alba</i>	White Mulberry	2
	<i>Pyrus calleryana</i> & cvs.	Callery Pear/ Bradford Pear, etc.	1

Invasive Exotic: **Shrubs**

<u>Found On BHI</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Rank</u>
	<i>Berberis thunbergii</i> & cvs.	Japanese Barberry	2
X	<i>Buddleia davidii</i>	Butterfly bush	3
	<i>Elaeagnus angustifolia</i>	Russian Olive	1
	<i>Elaeagnus umbellata</i>	Autumn Olive	1
	<i>Euonymus alata</i>	Burning Bush	2
X	<i>Ligustrum japonicum</i> & cvs.	Japanese Privet	2
	<i>Ligustrum sinense</i> & cvs.	Chinese Privet	1
	<i>Lonicera fragrantissima</i>	Fragrant Honeysuckle	1
	<i>Lonicera maackii</i>	Amur Honeysuckle	2
	<i>Lonicera morrowii</i>	Morrow Honeysuckle	2
	<i>Mahonia bealei</i> & cvs.	Leatherleaf Mahonia	2
X	<i>Nandina domestica</i> & cvs.	Nandina	2
	<i>Poncirus trifoliata</i>	Wild Orange	2
	<i>Spiraea japonica</i> and cvs.	Japanese Spiraea	2

Invasive Exotic: **Groundcover**

<u>Found On BHI</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Rank</u>
X	<i>Vinca major</i> & cvs.	Bigleaf Periwinkle	2
X	<i>Vinca minor</i> & cvs.	Common Periwinkle	2

Invasive Exotic: **Vines**

<u>Found On BHI</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Rank</u>
	<i>Ampelopsis brevipedunculata</i> & cvs.	Porcelain-berry	2
	<i>Celastrus orbiculatus</i>	Oriental Bittersweet	1
X	<i>Clematis terniflora</i>	Sweetautumn Clematis	2
	<i>Euonymus fortunei</i> & cvs.	Wintercreeper	2
X	<i>Hedera helix</i> & cvs.	English Ivy	1

X	<i>Vitex rotundifolia</i>	Beach Vitex	1
	<i>Wisteria floribunda</i> & cvs.	Japanese Wisteria	2
	<i>Wisteria sinensis</i> & cvs.	Chinese Wisteria	1

Invasive Exotic: **Grasses**

<u>Found On BHI</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Rank</u>
X	<i>Miscanthus sinensis</i> & cvs.	Chinese Silver Grass / Maiden Grass	2
	<i>Phragmites australis</i> spp. <i>australis</i>	Common Reed	1
	<i>Phyllostachys</i> spp.	Running/ Exotic Bamboo	2

Invasive Exotic: **Aquatics**

<u>Found On BHI</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Rank</u>
	<i>Eichhornia crassipes</i>	Water-hyacinth	2
	<i>Hydrilla verticillata</i>	Hydrilla	1
	<i>Lythrum salicaria</i>	Purple Loosestrife	2
	<i>Myriophyllum aquaticum</i>	Parrotfeather	1

Invasive Exotic: **Weeds**

<u>Found On BHI</u>	<u>Botanical Name</u>	<u>Common Name</u>	<u>Rank</u>
	<i>Ailanthus altissima</i>	Tree of Heaven	1
	<i>Glechoma hederacea</i>	Gill-over-the-ground/ Ground Ivy	2
	<i>Lamium purpureum</i>	Henbit	2
	<i>Lespedeza bicolor</i>	Bicolor Lespedeza	1
	<i>Lespedeza cuneata</i>	Sericea lespedeza	1
	<i>Lonicera japonica</i> & cvs.	Japanese Honeysuckle	1
	<i>Microstegium vimineum</i>	Japanese Stilt-grass	1
	<i>Paulownia tomentosa</i>	Princess Tree	1
	<i>Persicaria perfoliata</i>	Mile-a-minute Vine	1
	<i>Polygonum cuspidatum</i>	Japanese Knotweed	1
	<i>Pueraria montana</i>	Kudzu	1
	<i>Rosa multiflora</i>	Multiflora Rose	1
	<i>Sorghum halepense</i>	Johnson Grass	2

	<i>Stellia media</i>	Common Chickweed	2
	<i>Veronica hederifolia</i>	Ivyleaf Speedwell	2

Deer-Resistant Plants

No plant is actually deer-proof. When hungry, deer will eat anything to survive. They prefer vegetation that is soft to the touch and high in water content, and they especially relish flower buds and the tender new growth that emerges from plants in the spring.

Deer-resistant does not mean deer-proof. Common characteristics of plants that deer prefer not to eat include:

- Plants with thorny or prickly leaves or stems
- Plants with strong scents and pungent tastes
- Plants that are poisonous or produce thick, latex-like sap
- Plants with hairy leaves

Online Resources for additional information include:

<https://www.ces.ncsu.edu/files/library/71/Deer%20Resistant%20Plants.pdf>