

Coastal Forested Wetland Walk



WILLIAM & MARY
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 **Wetlands** 
Program

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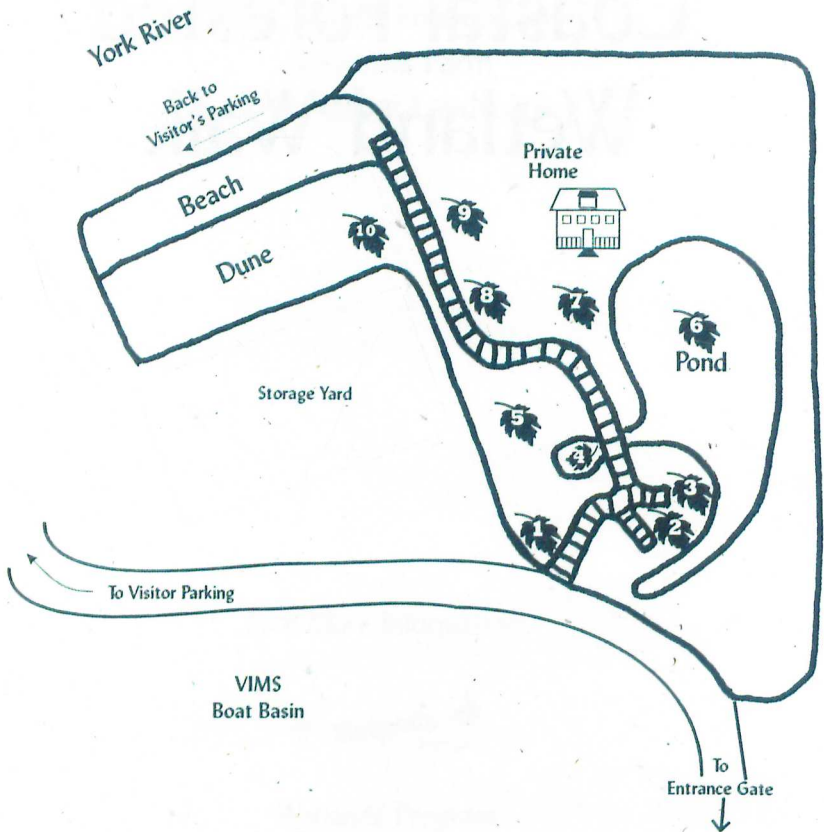


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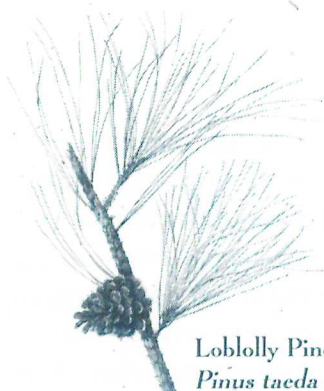
Coastal Forested Wetland Walk

Summer 2000

Viewing Stations



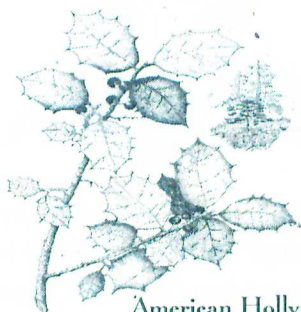
Viewing stations are numbered on the above map. Corresponding numbers in this booklet describe resident trees, plants and animals along the walk.



Loblolly Pine
Pinus taeda L.

This wet coastal plain forest adjacent to the York River was impacted by human activities before the property was part of the VIMS campus. This forest contains both wet and dry areas, wooded and open sections, and includes a mix of fresh and saltwater species.

The canopy trees are also relatively young (approximately 30 years). These characteristics are indicative of a disturbed habitat, probably resulting from clearing and partial filling with dredge material. Several native species of trees, shrubs and flowers have been planted throughout the forest to enhance the natural restoration process and to support wetland and botany educational courses taught by VIMS scientists.



American Holly
Ilex opaca Aiton



Black Cherry
Prunus serotina

The predominant tree is loblolly pine (*Pinus taeda*) which is the principal commercial southern pine. Other species common to wet coastal plain forests are red cedar (*Juniperus virginiana*), red bay (*Persea borbonia*), wax myrtle (*Myrica cerifera*), black cherry (*Prunus serotina*), oaks (*Quercus* spp.), American holly (*Ilex opaca*) and sweet bay (*Magnolia virginiana*).



Golden Rod
Solidago sempervirens

enough for trees to become established. More trees were planted here, including sweet bay (*Magnolia virginiana*), black



Reed Grass
Phragmites australis

This is a remnant of the original marsh that existed here over 50 years ago. Marsh species observed include saltmeadow hay (*Spartina patens*), smooth cordgrass (*Spartina alterniflora*), seaside goldenrod (*Solidago sempervirens*) and salt bushes (*Iva frutescens* & *Baccharis halimifolia*). A line of wax myrtles (*Myrica cerifera*) indicates the edge of fill that raised the elevation

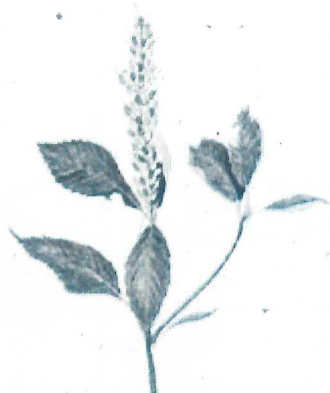


Black Gum
Nyssa sylvatica

gum (*Nyssa sylvatica*) and sweet pepperbush (*Clethra alnifolia*).

This marsh also illustrates the impacts of an invasive species, the common reed grass (*Phragmites australis*). *Phragmites* is an opportunistic pioneer species that quickly grows in disturbed sites. Unfortunately, it will exclude more desirable native species once established or will invade established areas and eventually shade out

the existing species and replace them. This isolated area of *Phragmites* will be closely monitored and prevented from spreading into the rest of the marsh.



Sweetpepper Bush
Clethra alnifolia L.



Sweet Bay
Magnolia virginiana



Red Bay
Persea borbonia (L.) Sprengel

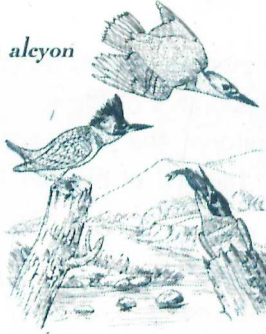


Groundsel Tree
Baccharis halimifolia



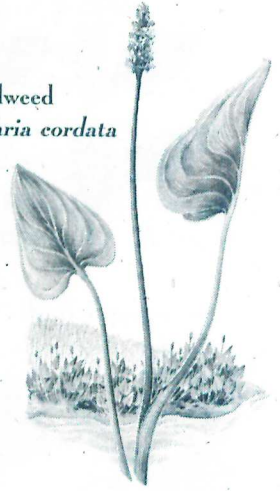
Marsh Elder
Iva frutescens L.

Belted Kingfisher
Megasceryle alcyon alcyon

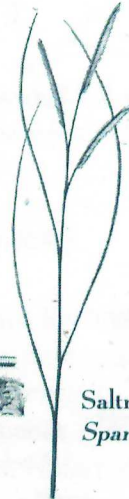


The source of water for this shallow pond is rainfall and runoff from the surrounding upland. This wetland contains small hummocks of saltmeadow hay (*Spartina patens*). This combination of open water and marsh grass provides good waterfowl habitat. Waterfowl eat algae and invertebrates inhabiting the algal masses. Fishing birds like the belted kingfisher hunt using the surrounding trees for perches.

Pickerselweed
Pontedaria cordata



Arrow Arum
Peltandra virginica



Saltmeadow Hay
Spartina patens



This is a wetland bog area that has been planted with native plants common to the area, including cardinal flower (*Lobelia cardinalis*), sneezeweed (*Helenium autumnale*), blue flag (*Iris virginica*), saltmarsh fleabane (*Pluchea purpurascens*) and ironweed (*Vernonia noveboracensis*). These flowering plants are well adapted to wet, saturated conditions. In this case, they also tolerate an environment high in mineral salts due to evaporation, low pH due to tannic acid from the surrounding pines and low oxygen levels due to stagnation and the presence of organic material.



Cardinal Flower
Lobelia cardinalis



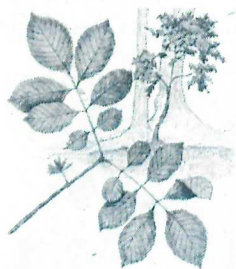
Sneezeweed
Helenium autumnale L.



Saltmarsh Fleabane
Camphorweed
Pluchea purpurascens



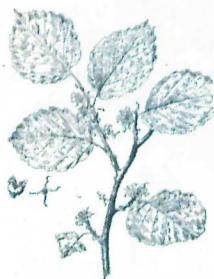
Ironweed
Vernonia noveboracensis



Green Ash
Fraxinus pennsylvanica



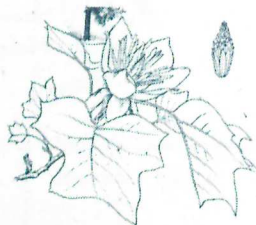
Sweetgum
Liquidambar styraciflua



Witch Hazel
Hamamelis virginiana



Persimmon
Diospyros virginiana



Tulip Poplar
Liriodendron tulipifera

Several species of trees and shrubs, commonly found in wet coastal plain forests, were planted beyond the bog in the open area. These include red bay (*Persea borbonia*), black cherry (*Prunus serotina*), blackjack oak (*Quercus marilandica*), persimmon (*Diospyros virginiana*), green ash (*Fraxinus pennsylvanica*), mockernut hickory (*Carya tomentosa*), red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), American holly (*Ilex opaca*), black gum (*Nyssa sylvatica*), tulip poplar (*Liriodendron tulipifera*), shadbush (*Amelanchier arborea*), and witch hazel (*Hamamelis virginiana*).

Shadbush is so named because it blooms in the spring during the annual shad spawning migrations. Witch hazel is a common native plant and is the only species to bloom during the winter. The other species provide a variety of fruits and nuts for wildlife as well as colorful flowers and fall leaves.



Dragonfly (common skimmer)
Libellulidae



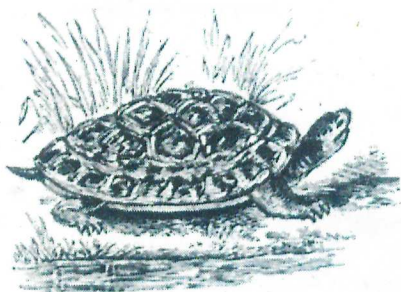
Redwinged Blackbird
Agelaius phoeniceus



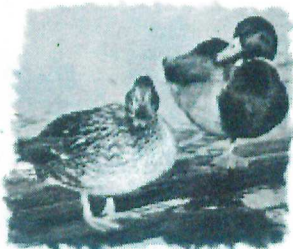
Great Blue Heron
Ardea herodias



Many animals inhabit or feed in the pond and the forest around it. Song birds, waterfowl, wading birds, kingfishers, snakes, turtles, fish, frogs, invertebrates and insects have all been observed from the boardwalk.



Snapping Turtle
Chelydra serpentina

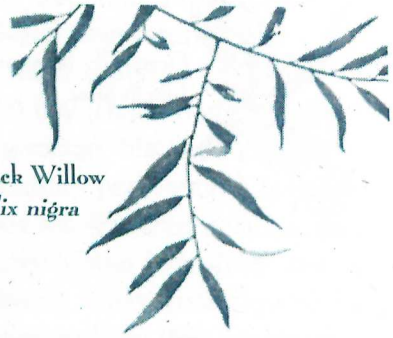


Mallard
Anas platyrhynchos

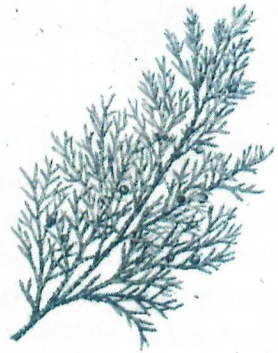


This area behind a private residence was opened up when several large trees were blown down in storms. New trees were planted including black willow (*Salix nigra*), black cherry (*Prunus serotina*), and red cedar (*Juniperus virginiana*). Several hybrid oak trees, resulting from cross-species pollination, are growing along the other side of the boardwalk.

Black Willow
Salix nigra



Red Cedar
Juniperus virginiana



Black Cherry
Prunus serotina



Native vines will grow in thick tangles up tree trunks along forest edges , where there is enough sunlight, such as poison ivy (*Toxicodendron radicans*) and greenbrier (*Smilax bona-nox*, *S. rotundifolia*, *S. glabra*). Japanese honeysuckle (*Lonicera japonica*) is another common vine but is an invasive species that is being carefully monitored and controlled in this forest. Other tree species prefer sunny forest edges, like yaupon (*Ilex vomitoria*) and wax myrtle (*Myrica cerifera*). Native grasses along this edge include switch grass (*Panicum virgatum*) and saltmeadow hay (*Spartina patens*).



Switch Grass
Panicum virgatum



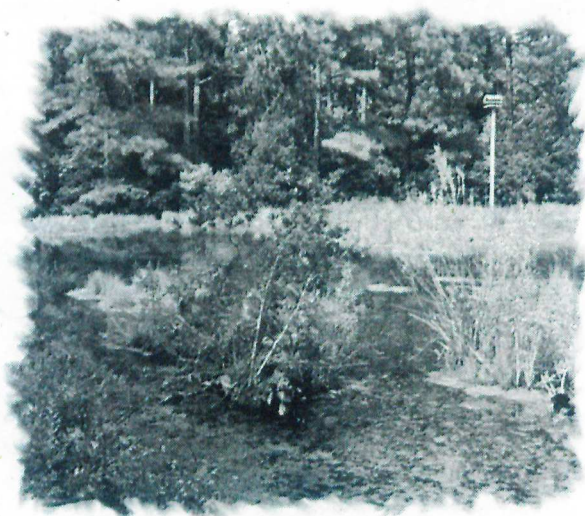
Greenbrier
Smilax bona-nox



Yaupon
Ilex vomitoria



Fallen tree trunks indicate that these sandy soils have very little to bind them together around the roots and consequently any type of windy disturbance will uproot the trees. Combined with a high water table that prevents the roots from growing deep, blowdowns are common in wet coastal plain forests.



This is an overwashed sand dune system adjacent to the York River beach. This community is characterized by poor, sandy soils and contains vegetation typically found in coastal dune systems. The trees visible from the end of the boardwalk include black cherry (*Prunus serotina*), loblolly pine (*Pinus taeda*), persimmon (*Diospyros virginiana*), red cedar (*Juniperus virginiana*) and wax myrtle (*Myrica cerifera*). A group of black locust trees (*Robinia pseudoacacia*) is growing in the dune further down the beach.

Several dune grasses are growing under these trees, including American beach grass (*Ammophila breviligulata*), beach panic grass (*Panicum amarum*), switch grass (*Panicum virgatum*), saltmeadow hay (*Spartina patens*), and broomsedge (*Andropogon virginica*). An area of secondary dunes behind the primary dune is inhabited by prickly pear (*Opuntia compressa*), greenbriar (*Smilax* spp.) and other plants adapted to dry, sandy soils with salty conditions.

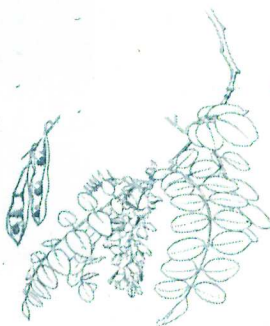
Prickly Pear
Opuntia compressa



Wax Myrtle
Myrica cerifera







Locust
Robinia pseudoacacia



A short walk along the beach will take you to a dune crossover connected to the Visitor's Parking area.



Important Lessons of the Coastal Forested Wetland Walk

-  Coastal forested wetlands provide habitat for a wide variety of plants, insects, birds and animals.
-  Trees and plants growing in coastal forested wetlands are adapted to stressful conditions, such as saturation, shading, acidic soils, and high mineral content.
-  Natural habitats can recover from human disturbances. Invasive plants, such as reed grass (*Phragmites*) and Japanese honeysuckle, must sometimes be controlled during the recovery process.
-  Coastal forested wetlands can store and filter upland stormwater runoff reducing flood potential and pollution of coastal waterways.

Recommended Literature

Duncan, Wilbur H. and Marion B. Duncan. 1987. *The Smithsonian Guide to Seaside Plants of the Gulf and Atlantic Coasts*. Smithsonian Institution Press. 409 pp.

Gupton, Oscar W. and Fred C. Swope. 1993. *Trees and Shrubs of Virginia*. University Press of Virginia. 205 pp.

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Swanson, Robert E. 1994. *A Field Guide to the Trees and Shrubs of the Southern Appalachians*. The Johns Hopkins University Press. 399 pp.

Notes