Conifers for the Deep South
The Arboretum staff has been busy this summer trying to keep the weeds under control, the grass cut, and the gardens clean. I appreciate all their hard work keeping the campus looking good.

- Work continues in the International Garden with construction of an azumaya in the Asian Plaza. An azumaya is a rustic building that serves as a resting place where one can enjoy the garden. Planning has begun for the South American Plaza which will include a water feature modeled after Incan aqueducts.
- Expansion of the Camellia Garden is scheduled to begin this winter to accommodate many new species acquired by the Arboretum. I would like to thank local camellia expert Gene Phillips for his donation of plants for this collection.
- Many of the minor plant collections also continue to grow. We are steadily developing our Podocarpus, Pittosporum, and evergreen Magnolia species collections. I’ll provide more information about these collections in upcoming issues of this newsletter.
- I would also like to thank well known plantsman Tony Avent of Plants Delight Nursery in Raleigh, NC for visiting the Arboretum this past spring and for his words of encouragement.
- Thanks to Stephen Johnston and Scott DeArmey of Bartlett Tree Experts for donating and planting a Juniperus virginiana ‘Brodie’ in the Conifer Garden as part of their 100 Trees in 100 Days celebration.
- Lastly, I would like to thank the Parkersburg Garden Club for their endowment of a scholarship for an AASU student in my name. I am honored by their generous gift.

Late summer and fall are my favorite seasons in the Arboretum. Many perennials are full size and in full bloom. Trees and shrubs are weighed down with new growth thanks to a long hot summer and just enough afternoon thunderstorms. It’s a great time to visit the Arboretum.
HOT CONIFERS

There’re more choices for the steamy South than you may think.

By Philip Schretter

Conifers are the most numerous and widespread of the gymnosperms living today with fifty genera and about 550 species. They grow from the subarctic to the subtropics. Conifers represent many superlatives in the plant kingdom including the world’s tallest, largest, thickest and oldest living things. The tallest is a Coast Redwood (Sequoia sempervirens), with a height of 378 feet. The largest is a Giant Sequoia (Sequoiadendron giganteum), with a volume 52,509 cubic feet. The thickest, or tree with the greatest trunk diameter, is a Montezuma Cypress (Taxodium mucronatum), thirty-seven feet in diameter. The oldest is a Great Basin Bristlecone Pine (Pinus longaeva) nicknamed “Methuselah” believed to be 4,700 years old. Conifers excel at growing in stressful environments. They can survive drought, high winds, searing heat and numbing subzero cold. A wide assortment of conifers can be grown in coastal Georgia and many are on display in the AASU Arboretum Conifer Garden. The Conifer Garden contains over 150 different conifers representing 22 genera. Here is a photographic sampling of the diversity in our collection.
Chamaecyparis obtusa ‘Nana Lutea’ is a slow growing dwarf with lemon-gold, dense growth. Commonly known as Hinoki Falsecypress, our plants have grown to two feet tall in three years with some afternoon shade.

Pseudolarix kaempferi slowly forms a beautiful broad, pyramidal shaped tree with soft, light green foliage. Commonly know as Golden Larch, this deciduous conifer displays attractive orange-yellow fall color. Our twelve foot tall tree is seven years old growing in full sun.

Chamaecyparis pisifera ‘Gold Mop’ forms a large weeping mound with yellow-chartreuse, wiry, thread-like branches. Also known as Japanese Falsecypress, our example of this cultivar has grown to five feet tall and seven feet wide in seven years.
(1) *Thuja occidentalis* ‘Golden Globe’ displays soft, golden yellow foliage arranged on flat sprays. Commonly known as Eastern Arborvitae or American Arborvitae, our globe shaped five year old plants are three feet tall and four feet wide and show no discoloration or browning while growing in full sun.

(2) *Platycladus orientalis* ‘Blue Cone’ forms a compact shaped cone with flat sprays of blue-green foliage. Commonly known as Oriental Arborvitae, our specimen has grown to four feet tall in two years.

(3) *Cryptomeria japonica* ‘Spiraliter Falcata’ develops into a low mound with thin light green branches which twist and curve. Commonly known as Japanese Cedar, our contorted dwarf specimens have slowly grown to two feet tall and three feet wide in three years with afternoon shade.

(4) *Pinus bungeana* grows more slowly than any non-dwarf plant in our collection. This Chinese species, commonly known as Lace Bark Pine, makes a medium sized tree grown for its beautiful exfoliating bark. Our plants have grown less than twelve inches in ten years. Every year in mid-December someone mysteriously decorates this tree with ribbons and ornaments. I think they must pity it as much as Charlie Brown would.
(1) *Chamaecyparis thyoides* ‘Shiva’ exhibits a wide teardrop shaped habit with soft, feathery, blue-green foliage. Our specimen of this Atlantic White Cedar cultivar, despite what most literature indicates, has grown to sixteen feet tall and ten feet wide in six years growing in full sun.

(2) *Thujopsis dolobrata* ‘Nana’ grows happily on campus in the deep shade of live oaks and in the filtered shade of tall pines. Sometimes called Dwarf Japanese Elk Horn Cedar or Hiba False Arborvitae, this unusual conifer grows finger-like bright green sprays of foliage forming a compact, flat, round bun.

(3) *Cunninghamia konishii* ‘Little Leo’ is a dwarf form of the Hayata Tree from Taiwan. Its leaves are a bright green with foliage resembling *Cryptomeria*.

(4) *Cupressus funebris* (also listed as *Chamaecyparis funebris*) makes a medium-sized tree and is native to southwestern and central China. Commonly known as Chinese Weeping Cypress, our tree has grown to twenty feet tall in less than three years with drooping sprays of light green foliage.
Conifer Inventory

A complete list of conifers growing in the AASU Arboretum arranged by family.

Araucariaceae
- Araucaria angustifolia
- Araucaria araucana
- Araucaria bidwillii

Cephalotaxaceae
- Cephalotaxus oliveri
- Cephalotaxus fortunei
- Cephalotaxus harringtonia ‘Fastigiata’
- Cephalotaxus harringtonia ‘Korean Gold’
- Cephalotaxus harringtonia ‘Prostrata’
- Cephalotaxus harringtonia var. drupacea

Cupressaceae
- Calocedrus decurrens
- Calocedrus formosana
- Calocedrus macrolepis
- Chamaecyparis obtusa ‘Blue Feathers’
- Chamaecyparis obtusa ‘Confucius’
- Chamaecyparis obtusa ‘Filocoides Gold’
- Chamaecyparis obtusa ‘Filocoides’
- Chamaecyparis obtusa ‘Golden Pillar’
- Chamaecyparis obtusa ‘Kerdalo’
- Chamaecyparis obtusa ‘Kosteri’
- Chamaecyparis obtusa ‘Lacy’
- Chamaecyparis obtusa ‘Nana Gracilis’
- Chamaecyparis obtusa ‘Nana Lutea’
- Chamaecyparis obtusa ‘Snowkist’
- Chamaecyparis obtusa ‘Tempelhofer’
- Chamaecyparis obtusa ‘Tetragona Aurea’
- Chamaecyparis pisifera ‘Boulevard’
- Chamaecyparis pisifera ‘Devon Cream’
- Chamaecyparis pisifera ‘Gold Mop’
- Chamaecyparis pisifera ‘Silverload’
- Chamaecyparis pisifera ‘Snow’
- Chamaecyparis pisifera ‘Squarrosa Lutea’
- Chamaecyparis pisifera ‘Sunset’
- Chamaecyparis thyoides ‘Glaucia Pendula’
- Chamaecyparis thyoides ‘Pendula’
- Chamaecyparis thyoides ‘Red Star’
- Chamaecyparis thyoides ‘Shiva’
- Chamaecyparis thyoides var. henryae
- Cryptomeria japonica ‘Araucarioides’
- Cryptomeria japonica ‘Barabits Gold’
- Cryptomeria japonica ‘Black Dragon’
- Cryptomeria japonica ‘Compressa’
- Cryptomeria japonica ‘Cristata’
- Cryptomeria japonica ‘Globosa Nana’
- Cryptomeria japonica ‘Gyokuryu’
- Cryptomeria japonica ‘Knaptonensis’
- Cryptomeria japonica ‘Osaka Tama’
- Cryptomeria japonica ‘Rasen’
- Cryptomeria japonica ‘Sekkan Sugi’
- Cryptomeria japonica ‘Spiraliter Falcata’
- Cryptomeria japonica ‘Taisho Tamasugi’
- Cryptomeria japonica ‘Tansu’
- Cryptomeria japonica ‘Yellow Twig’

(continued on page 8)
Cryptomeria japonica var. sinensis
Cunninghamia konishii ‘Little Leo’
Cunninghamia lanceolata
Cunninghamia lanceolata ‘Chason’s Gift’
Cunninghamia lanceolata ‘Glaucan’
Cupressus arizonica ‘Blue Pyramid’
Cupressus arizonica ‘Carolina Sapphire’
Cupressus arizonica ‘Silver Smoke’
Cupressus cashmiriana
Cupressus chengiana var. kansuensis
Cupressus duclouxiana
Cupressus funebris
Cupressus goveniana
Cupressus himalaica
Cupressus jiangeensis
Cupressus lusitanica
Cupressus sempervirens
Cupressus sempervirens ‘Swane’s Golden’
Cupressus torulosa
Fitzroya cupressoides
Glyptostrobus pensilis
Juniperus chinensis
Juniperus chinensis ‘Blue Point’
Juniperus chinensis ‘Blue Vase’
Juniperus chinensis ‘Gold Star’
Juniperus chinensis ‘Grey Owl’
Juniperus chinensis ‘Hetzi Variegata’
Juniperus chinensis ‘Kaizuka’
Juniperus chinensis ‘Old Gold’
Juniperus chinensis ‘Sargentii’
Juniperus chinensis ‘Sea Green’
Juniperus chinensis ‘Spartan’
Juniperus conferta
Juniperus conferta ‘Blue Pacific’
Juniperus conferta ‘Emerald Sea’
Juniperus davurica ‘Expansa Variegata’
Juniperus davurica ‘Expansa’
Juniperus formosana
Juniperus horizontalis ‘Mother Load’
Juniperus horizontalis ‘Plumosa Compacta’
Juniperus horizontalis ‘Prince of Wales’
Juniperus horizontalis ‘Wiltonii’
Juniperus oxycedrus
Juniperus procumbens ‘Nana’
Juniperus recurva
Juniperus scopulorum ‘Wichita Blue’
Juniperus silicicola
Juniperus squamata ‘Blue Star’
Juniperus squamata ‘Chinese Silver’
Juniperus squamata ‘Star Dust’
Juniperus virginiana
Juniperus virginiana ‘Brodie’
Juniperus virginiana ‘Canaertii’
Juniperus virginiana ‘Grey Owl’
Juniperus virginiana ‘Royo’
Juniperus x media ‘Daub’s Frosted’
Metasequoia glyptostroboides
Metasequoia glyptostroboides ‘Jack Frost’
Metasequoia glyptostroboides ‘Ogon’
Metasequoia glyptostroboides ‘White Spot’
Platycladus orientalis ‘Aurea Nana’
Platycladus orientalis ‘Blue Cone’
Platycladus orientalis ‘Fruitlandii’
Taiwania cryptomerioides
Taxodium ascendens
Taxodium distichum
Taxodium distichum ‘Peve Yellow’

The bizarre twisting and spiraling needles of Cryptomeria japonica ‘Rasen’
Taxodium mucronatum
Tetraclinus articulata
Thuja ‘Green Giant’
Thuja occidentalis ‘Columbia’
Thuja occidentalis ‘Degroot’s Spire’
Thuja occidentalis ‘Emerald’
Thuja occidentalis ‘Europe Gold’
Thuja occidentalis ‘Golden Globe’
Thuja occidentalis ‘Holstrup’
Thuja occidentalis ‘Little Giant’
Thuja occidentalis ‘Smaragd’
Thuja occidentalis ‘Teddy’
Thuja occidentalis ‘Woodwardii’
Thuja occidentalis ‘Yellow Ribbon’
Thuja plicata ‘Green Splendor’
Thujopsis dolobrata ‘Nana’
Widdringtonia nodiflora
X Cupressocyparis leylandii
X Cupressocyparis leylandii ‘Contorta’
X Cupressocyparis leylandii ‘Gold Cup’
X Cupressocyparis leylandii ‘Golonconda’
X Cupressocyparis leylandii ‘Harlequin’
X Cupressocyparis ovensii

Pinaceae
Abies fabri
Abies firma
Cedrus deodara
Cedrus deodara ‘Crystal Falls’
Cedrus deodara ‘Divinely Blue’
Cedrus deodara ‘Gold Cone’
Keteleeria davidiana
Keteleeria evelyniana
Keteleeria fortunei
Picea glauca ‘Conica’
Pinus bungeana
Pinus elliottii
Pinus glabra
Pinus palustris
Pinus patula
Pinus pinaster
Pinus strobus
Pinus taeda
Pinus taiwanesensis
Pinus thunbergii
Pseudolarix kaempferi
Tsuga canadensis

Podocarpaceae
Podocarpus acutifolius
Podocarpus alpinus ‘County Park Fire’
Podocarpus chinensis
Podocarpus elogatus ‘Blue Chip’
Podocarpus falcatus
Podocarpus hallii
Podocarpus henkelii
Podocarpus lawrencii
Podocarpus macrophyllus
Podocarpus macrophyllus ‘Dwarf Pringles’
Podocarpus macrophyllus ‘Variegata’
Podocarpus matudae
Podocarpus nagi
Podocarpus nivalis
Podocarpus salignus
Podocarpus totara

Podocarpaceae
Podocarpus acutifolius
Podocarpus alpinus ‘County Park Fire’
Podocarpus chinensis
Podocarpus elogatus ‘Blue Chip’
Podocarpus falcatus
Podocarpus hallii
Podocarpus henkelii
Podocarpus lawrencii
Podocarpus macrophyllus
Podocarpus macrophyllus ‘Dwarf Pringles’
Podocarpus macrophyllus ‘Variegata’
Podocarpus matudae
Podocarpus nagi
Podocarpus nivalis
Podocarpus salignus
Podocarpus totara

Sciadopityaceae
Sciadopitys verticillata ‘Wintergreen’

Taxaceae
Pseudotaxus chienii
Taxus chinensis
Taxus chinensis var. hupehensis
Taxus floridana
Taxus globosa
Taxus mairei
Torreya grandis

The fused and crested new growth of Cryptomeria japonica ‘Cristata’
Drive down any rural highway in the coastal plains region of the southeastern United States and you’ll probably see pine trees. In some places, there will be acres and acres of pine trees. More specifically, the blurred rows of neatly spaced trunks you’re probably seeing are loblolly pines (*Pinus taeda*). Imagine you could go back in time 300 years ago to the same spot. What do you think you would see? You would still see acres and acres of pine trees, but something is different. Almost all the trees are longleaf pine (*Pinus palustris*). You could repeat this almost anywhere from Virginia to Texas along the Atlantic and Gulf coasts and the results would be the same. Longleaf pine covered an estimated 92 million acres before the arrival of Europeans in North America and now covers less than 3 million acres. Loblolly pine was once scattered over less than 5 million acres in pre-colonial times but now grows on over 52 million acres. How did a marginal pioneer species like loblolly pine replace longleaf pine which made up one of the most extensive forest ecosystems in North America?

A warming climate at the end of the last ice age 10,000 years ago allowed many species of southern pines to migrate northward and eastward from their refuges in southern Texas, southern Florida, and northern Mexico. Longleaf pine was one of the species that made its way into the lower coastal plain 8,000 years ago and over the next 4,000 years spread throughout the southeast. The warming climate also created the sticky, humid, subtropical summer weather of the South that produces large numbers of lightning storms. The numerous fires sparked by these storms and the large, uninterrupted expanses of pine forests with abundant fuel in the form of resinous pine needles allowed fires to spread over vast areas.

The spread of longleaf pine during this time also coincides with a growing Native American population throughout the region and their use of fire to manipulate the environment. Fires were used by Indians to encourage new growth for browsing deer and other animals and to open up the forest to make hunting easier. As the southeastern Indians developed into an agricultural based society around 800 AD, fires were set to open new crop areas and to maintain old fields.

Widespread burning caused by the combination of lightning ignited and Indian set fires presented an adaptive challenge for plants and animals in this fire rich environment. Longleaf pine developed traits that enabled it to not just survive fire, but thrive with it and actually depend on it for survival.

Longleaf pine’s thick, corky bark insulates its tender cambium from high temperatures. Its large, heavy seeds contain abundant moisture and nutrients allowing it to germinate immediately during seed drop in the fall. By ripening and dispersing in the fall, seeds land directly on bare soil burned clean by summer fires. The germinating seeds quickly begin growing an impressive taproot that allows it to reach water below the dry sandy soil. During the first few years of its life known as the grass stage, longleaf pine looks more like a clump of grass than a tree. The young longleaf pine’s terminal bud is protected by a bushy sheath of needles which may burn off during a fire but will quickly grow back. Longleaf pines can remain in the grass stage for ten years or more, but most begin to grow out of it within a few years.

![Savannah City Plan, 1734 by Paul Fourdrinier. Note the sea of longleaf pines surrounding the city.](image)
They bolt quickly using food saved in their taproots to elevate their growing point above most fires.

A couple of interesting theories have been suggested about longleaf pine and its relationship with fire. Some ecologists believe that the plants living in the longleaf pine wiregrass community may actually be encouraging fire. In 1970, a U.S. Forest Service forester named Robert Mutch suggested that natural selection might favor plants with flammable oils and resins that increase the possibility of fire to reduce competition with plants less resistant to fire. Longleaf pine, with its flammable resinous wood and long needles, fits this profile. Even more intriguing is the suggestion that longleaf forests are man-made. Some researchers estimate the longleaf ecosystem is no more than 5,000 years old and has most likely never existed without human presence. Native Americans were living in the coastal plain region while the system was taking shape, and their land use practices may have shaped the forest into what the Europeans found thousands of years later.

Longleaf pine has been extensively exploited as a resource ever since colonial times. The earliest settlers harvested trees in coastal areas for building materials and to clear land for crops, but the first major impact on the longleaf pine forest came from the naval stores industry.

Naval stores are products created from the resin of pine trees. The term lingers from a time when these products were essential in the construction and repair of wooden sailing ships. A reliable and consistent source of naval stores was crucial to seafaring nations from ancient times to the end of the wooden ship era, and early English explorers recognized immediately the value and importance of the extensive pine forests of the South in maintaining the superiority of their navy and merchant fleet. Naval stores such as tar and pitch are manufactured from dead trees, while products such as rosin and turpentine are derived from live trees. Tar is created by slowly burning pine wood in a kiln and collecting the hot liquid that sweats and drips off. Pitch is created by collecting the oily vapor created from boiling tar in large containers. Tar combined with fibers forming long ropes of caulk were driven into the seams between wooden planks to make ships watertight. The outside of ship hulls were coated with tar to waterproof them and protect them from damaging, wood-boring mollusks. A coating of tar was also used to help preserve the miles of ropes found on early sailing ships. Turpentine is a fluid obtained by distilling the resin collected from live pine trees. Rosin is the by-product remaining after the distillation process.

The labor intensive process of turpentining changed over time with technological advancements but until the early twentieth century went something like this. Work usually

(continued on page 12)
began in winter with the chopping of triangular pockets called boxes into the base of pine trees. In the spring, shallow v-shaped streaks were cut above each box causing resin to flow into the cavity. Each week, two new steaks were cut above the previous cut creating a chevron effect on the side of the tree. Once every week or two, the resin accumulating in the box was collected in barrels and taken to the turpentine still. Resin collected from the first few cuts on a tree yielded the highest quality turpentine and commanded the most money. As the chip went further up the tree, resin would darken before making it to the box and be worth less. Therefore, turpentine operators began abandoning forests after a few years to purchase or lease a seemingly inexhaustible supply of more profitable virgin forests elsewhere.

The pace of abandonment accelerated in the second half of the nineteenth century leaving behind large numbers of wounded trees. The act of boxing trees correctly didn’t necessarily kill them, so old turpentine trees can still be found living today, but carelessness and greed by the industry certainly contributed to the destruction of many trees. Boxes cut too deep, chips cut too wide, and multiple boxes on trunks were too much for trees to overcome. These actions either killed them outright or made them susceptible to insect invasion or vulnerable to damage from storms.

Even more destructive were the infernos created when fire raced through abandoned groves where flammable resin coated much of the ground and all of the trees. The demand for tar, pitch, turpentine and resin created a lucrative industry in the South in the eighteenth and nineteenth centuries, but careless and destructive practices greatly contributed to the demise of the longleaf pine forest.

A second factor contributing to the demise of the longleaf pine was the timber industry. For most of the 19th century, waterways provided the major routes of transportation of timber so trees were usually cut where they could easily be moved to water. The introduction of the railroad to logging near the end of the nineteenth century had a devastating effect on the forests of the South. Previously inaccessible interior forests became accessible. Longleaf pine provided some of the most sought after timber trees in the country because of its great strength created by slow growth. Cutting progressed form the Atlantic states west through the Gulf Coast region to Louisiana and Texas. Intense logging from 1880 to 1920 resulted in the loss of virtually all remaining old-growth forest in the southeast and came to an end with the Great Depression and the near depletion of marketable trees to cut.

The forests grew back after the logging era, including some natural second-growth longleaf pine forests, but longleaf pine struggled to reestablish itself in many of its original sites. Loblolly pine quickly displaced the longleaf pine and most of the blame can be placed on the exclusion of fires and the rise of the pulp and paper industry.

As pointed out earlier, forest fires were a common event in the coastal plain in the pre-colonial period. With few natural firebreaks in an uninterrupted expanse of forest, fire could travel great distances. Fires were ignited naturally by lightning or were set by Native Americans. As the Native American population dwindled due to disease and displacement by migrating Europeans, so did the role these original inhabitants played in maintaining the longleaf ecosystem with fire. Fortunately, some of the early European settlers in North America brought their traditions of using fire to clear fields and to improve forage for free ranging livestock and continued to burn the forests in the same manner as the original inhabitants.
But as roads, plowed fields, and other man-made firebreaks became more common, the ability of fires to spread was diminished.

In the late nineteenth century, widespread soil erosion due to poor agricultural practices and clearcut logging forced the federal government to take action by encouraging a major reforestation effort in the Southeast. A main component of their reforestation effort was the active suppression of both natural and man-made fires. Without fire, longleaf pine seedlings now had to compete with invading broadleaf species and seeds could no longer reach bare mineral soil to germinate. The exclusion of fire also made it easy for the fast growing loblolly pine to become the dominant species on disturbed sites.

Loblolly pine occurs naturally from Delaware southward to Florida and westward to Texas, but was a minor species in the pre-colonial forests of the South. Historically, loblolly pine grew in low areas around steams, swamps, savannas, or hammocks. They preferred good quality loamy and peaty soils that seldom flooded and had a water table five to eight feet below the surface. In the coastal plain, frequent fires limited loblolly pine’s ability to compete with fire resistant longleaf pine on well-drained soils. Loblolly pine’s best chance at survival in the coastal plain was mixed with hardwoods along stream margins and around swamps in areas protected from excessive flooding or serious fires. Loblolly pine rarely produced many natural, large, pure stands of trees. Natural disasters such as hurricanes and land clearing by Native Americans created openings in the canopy that did allow loblolly pine to become established, only to be eventually killed by fire and replaced by longleaf pine.

A series of events changed this significantly after the Revolutionary War. Sea Island cotton was grown successfully along the Georgia coast in the 1780s but cotton didn’t change the South’s landscape in a major way until the late eighteenth century when the westward movement of settlers from coastal areas coincided with the invention of the cotton gin and the beginning of Indian removal from the Piedmont. Forests were cleared and the rich soil planted in cotton. In 1840, an estimated 87 percent of the Piedmont was in cultivation. Cotton thrived until post-Civil War reforms, erosion, soil depletion, and ultimately the boll weevil made as much as half of the Piedmont a wasteland of abandoned fields by the end of the nineteenth century.

Loblolly pine’s greatest adaptation is its ability to rapidly colonize disturbed areas where the soil has been exposed and competing trees removed. It seeds profusely and its light seeds can travel long distances. Its seedlings develop rapidly and it regenerates easily. Loblolly pine quickly formed pure stands in these abandoned fields and were considered worthless until a discovery in the 1930s changed everything.

Using wood pulp to make paper began in this country in the 1860s. Most of the paper made in the United States until the early twentieth century was produced from spruce harvested in New England and New York. As these forests became logged out, pulpwood had to be imported. By 1930, more than half the pulp used in American paper mills was imported. Attempts to make paper from old growth southern pine species in the late nineteenth century yielded little success because their high resin content gummed up pulp making machinery.

As the last of the old growth southern pines made their way to sawmills in the 1920s, researchers began experimenting making pulp out of young ten to twenty year old loblolly pines. They discovered that these young trees had very low resin content and could be used to create good quality paper. Suddenly, the acres and acres of successional loblolly pines that were thought to be worthless weeds were attracting the attention of the paper industry. Land managers realized they could harvest pulpwood in as little as ten years. By 1940, twenty pulp and paper mills were under construction in the South and timber companies were purchasing millions of acres of forest land. Between 1930 and 1945, two billion loblolly and slash pine seedlings were planted on logged-
over land in the South, much of it as part of reforestation programs. With the decline of the pulp and paper industry over the last decade due to cheaper imports and demand fluctuations, there has been an effort to restore longleaf habitat. Unfortunately, lack of incentive by private landowners and the unique management requirements needed by longleaf pine has made restoration a tough sell.

You would have to go back in time to see what a longleaf pine forest looked like 300 years ago because there are not any stands left that have not undergone some form of selective logging. There are however, some examples of uneven aged old-growth longleaf pines remaining, but not much. Of the over 90 million acres of longleaf pine forest that once covered the South, less than 10,000 acres of old-growth remain. You won’t find any in Virginia, Texas, Louisiana, or South Carolina. About 500 acres of old-growth remains in North Carolina, about 300 acres in Alabama, and only 200 acres remain in Mississippi. The greatest numbers survive in Georgia and Florida. About 3,000 acres of old-growth remain in Georgia, and Florida has a 5,000 acre virgin longleaf forest belonging to Eglin Air Force Base located east of Pensacola.

Bibliography


The AASU Arboretum staff won first place in the 2007 Savannah Garden and Antiques Exposition exhibition garden competition. Their exhibit also received “Most Creative” and “Best Water Feature” awards. The Savannah Garden & Antiques Exposition raises funds for the Isaiah Davenport House Museum and Historic Savannah Foundation. The exhibition garden competition featured landscape, nursery, and gardening professionals competing for certificates of distinction in several categories as they interpreted Marc Chagall’s quote, “Art is the unceasing effort to compete with the beauty of flower - and never succeeding.” To interpret this theme, groundskeeper Janice Nease decided to use flowering plants as art by creating an outdoor art gallery with framed “pictures” of live flowering plants. A piece called Spiked Punch contained a spiny agave surrounded with a raspberry colored trailing petunia. Another painting, titled White Rain, contained a collection of white flowering plants arranged behind a curtain of dripping water. Each exhibit was labeled so viewers could identify the types of plants used. Also contributing to the success of the exhibit were groundskeepers Andrew Fidler, Kim Monroe, Dennis Moore, Donna Rigdon, and carpenter Bernard MacDougall. This is the third year the Arboretum has participated in the Garden Expo.
The Granddaddy of Southern Conifers

It would be difficult to discuss conifers grown in the South without including junipers. These tough evergreen plants have been used and overused for groundcovers, hedges, screens, foundation plants, Christmas trees, specimen trees, windbreaks, and topiary. Known commonly as juniper, cedar, and redcedar, the genus Juniperus contains about 70 species of evergreen shrubs and trees occurring primarily in the northern hemisphere. In some semiarid regions of its range, like the western United States, northern Mexico, and central and southwest Asia, it makes up the dominant forest cover on large sections of the landscape. Not being particularly tasteful to goats and cattle, junipers withstand browsing by livestock and provide people living in these areas an important source of fuel and wood for construction. Many native cultures also use the aromatic foliage and resins for medicinal or religious purposes. Gin is flavored with the oil extracted from the berries of Juniperus communis, a species native to temperate Eurasia and North America. Junipers have round, fleshy, berry-like seed cones with hard shelled seeds inside and are resinous and bitter tasting. Seeds are dispersed by birds, which swallow the cones whole, digest the fleshy scales and deposit the undamaged hard-shelled seeds along fence rows everywhere. The bitter taste of many species may be an adaptation to discourage mammals from eating the seeds.