

## Secrets of Pine Barrens Plants

### Lichens

Have formed a strange partnership between a fungus and a single celled green algae. All lichens, except wolf lichen, can be boiled as a soup or dried and ground into flour for bread. Favorite food of caribou. Crustose, foliose and fruticose forms.

Wolf Lichen - Letharia vulpina – Poisonous, but only occurs out west. Bright chartreuse.

British Soldier - Cladonia macilenta – fruticose.

### Moss

Contains no vascular tissue, reproduces by alternation of generations with gametes (one a swimming sperm) and spores.

Polytrichum – Hair Cap Moss

Sphagnum - Only true moss of appreciable economic value.

Used as sterile wound dressings as far back as 1014. Also used as disposable diapers, furniture stuffing, fuel, mulch. Filled with tubes – sponge-like – incredible absorptive powers. Also germicidal.

Matchstick fungus or Swamp Beacon - Mitrula paludosa. Often found with Sphagnum moss.

### Ferns

Vascular tissue. Like mosses, have alternation of generations, but fern gametes are in very tiny stage. Spores found on fertile fronds or on the backs of leaves.

Curly Grass Fern - Schizaea Padilla - Tiny in size, easily overlooked. Spores on fertile frond, leaves are curls.

Cinnamon Fern - Osmunda cinnamomea. Have fertile fronds. Cinnamon color evident in spores, and in the leaflets in the fall. Fronds can be boiled and used as a thickener.

Royal Fern - Osmunda regalis. Have spores on fertile fronds.

Sensitive fern - Onoclea sensibilis. Killed very easily by frost. Spores on fertile fronds. Roots and young fronds can be eaten.

Ebony Spleenwort - Asplenium platyneuron. Uncommon in the pines, but often grows near old masonry. Resembles a small Christmas Fern, but not closely related.

Bracken Fern - Pteridium aquilinum. Spores found on the back of leaflets. Young fiddle heads or stalks can be cooked and eaten like asparagus. Roots can be made into flour. Older ferns poisonous – cause internal bleeding.

### Wildflowers

Asters - Asteraceae - Leaves used as cooked greens, like dandelions. Root decoction (mash and boil) poured in ear for infections.

Sweet Goldenrod - Solidago odora - Leaves smell like licorice or anise. Can be used for flavoring or tea. Flowers can be chewed for sore throats, used externally for sprains and stings. Decoctions made from all parts of plant. Used internally for stomach problems, stimulants,

convulsions, etc. Leaves appear to be toxic to sheep. Heavy pollen, so does not cause hay fever (Ragweed does).

Daisy Fleabane - Erigeron annuus – Boiling removes turpentine like oil, cures diarrhea. Smoke from burning herbs drives away fleas and gnats.

Boneset - Eupatorium sp. - Leaves and flowers cooked and reduced to a syrup, used for fevers, colds, pain and stomach aches.

Yarrow - Achillea millefolium (Achilles heel) - Very important medicinal plant. Roots pulverized for poultices on wounds and bruises, or plant was ground and steeped in cold water as an internal stimulant or tonic. Poured in ears for earaches, applied for sore eyes, fumes from leaves on hot stones for headaches. Introduced.

Queen Anne's Lace - Daucus carota – Forerunner of cultivated carrots. Roots cooked for food, seeds for seasoning, tea for diuretics, poultices, colic. Don't confuse with water hemlock. Introduced.

Water Hemlock - Cicuta maculata - Hemlock tea used to poison Socrates (of poison hemlock fame). Blocks nerves, eventually diaphragm and heart muscles paralyzed.

Orange Milkwort - Polygala lutea - Polygala is Greek for "much milk." The common name came from the milky sap and the belief that cattle which grazed on the plants would produce more milk. Also called candy root, as roots were sweet and eaten as candy.

Cross Leaf Milkwort - Polygala cruciata

Goat Rue - Tephrosia virginiana - Pea family, poisonous to livestock as are many peas (locoweed).

Partridge or Sensitive Pea - Chamaecrista fasciculata - Leaves lose turgidity (water) and fold up at night or when touched. Somewhat toxic.

Meadow Beauty - Rhexia virginica – Family Melastomaceae. Also known as Deer Grass. Only one genus of this family in the country. Four petals, long stamen, opposite leaves.

Toadflax - Linaria canadensis - Snapdragon family. Flower thought to resemble a little toads, and before flowering to resemble flax. The leaves of the Toadflax also contain an acrid, disagreeable juice, which makes them distasteful to cattle, and an infusion of the leaves was used “against the flowing of the gall in cattell.” A little spur found on flower makes them different from Lobelia.

Lobelia – Lobelia nuttallii – Bluebell family. Somewhat poisonous, used as an emetic. Easily confused with Toadflax.

Fern Leaf False Foxglove - Aureolaria pedicularia - Snapdragon family, fall flower, a favorite of bees and butterflies. They are partially parasitic to Oaks.

Gerardia - Agalinis (Gerardia) purpurea or tenuifolia - Snapdragon family, not Gardia (protozoan in water that causes diarrhea). Fall flower, favorite of bees and butterflies, close relative of last flower. Linear leaves.

Pine Barrens Sandwort - Arenaria caroliniana -Pink family. Related to Carnations.

White Rose Pink - Sabatia angularis albiflora - Gentian family, not pink in family or color.

Pine Barrens Gentian - Gentiana autumnalis – My favorite Pine Barrens flower. Roots steeped – liquid applied externally for backache. Bitter digestive tonic or stimulant. Dates back to the Middle Ages.

### **Monocots – Wetland Plants**

Water Lily - Nymphaea odorata – Water Lily family. Pulverized root used for sore mouth, astringent and demulcent (soothing). Also used as food, boiled or baked, peeled and ground into flour, or seeds roasted and eaten or ground into flour.

Spatterdock - Nuphar variegatum – Water Lily family. Pulverized dry rhizomes – wounds, laxative, tonic, dentifrice, skin diseases. Crushed leaves for boils. Rhizomes used as food, seeds used as popcorn.

Golden Club - Orontium aquaticum - Related to skunk cabbage - Arum family. Called “neverwet” because leaves are water repellent. The rootstocks can be sliced, thoroughly dried and ground into a flour that is said to be tasty and nutritious. The nutlike seeds also can be thoroughly dried and ground into flour or boiled and eaten like beans. Like skunk cabbage, all parts of golden club contain calcium oxalate crystals which cause an intense burning sensation in the mouth if eaten raw. Boiling does not eliminate this acrid characteristic, but thorough drying does.

Red Root - Lachnanthes caroliana – Only member here of Bloodwort family – Also called *Goldencrest*. Woolly leaves and flowers. Root used as dye or paint – reputed to be toxic. Poisons light colored or albino pigs or sheep, but does not affect dark individuals. Once used medicinally as a stimulant and expectorant.

Bog Asphodel - Narthecium ossifragum – Lily family - Latin name of ossifragum, means 'bone breaker'. A lack of calcium in bog plants as a whole would have led to nutrient deficiencies in those cattle that grazed there. Slightly toxic when heavily grazed upon.

Turkeybeard - Xerophyllum asphodeloides – Lily family. Grasses used for weaving by Native Americans. Xerophyllum means “dry leaved.” Called Bear Grass in the west because bears eat the roots – an important wildlife food. The flowers' nectar is flavorful and makes delicious wine. It is fire-adapted and only reproduces widely after fire.

Arrowhead - Sagittaria latifolia – Water Plantain family. Also known as Indian Potato, Wild Potato or Wapatoo. Tubers can be eaten raw or cooked for 15 to 20 minutes. The taste is similar to potatoes and chestnuts, and can be prepared in the same fashions: roasting, frying, boiling, and so on. They can also be sliced and dried to prepare a flour. Other edible parts include buds and fruits. Medicinally - Root steeped for indigestion.

Pickerel Weed - Pontederia cordata – Water Hyacinth family - Young Pickerel hide among its stems. Young leafstalks can be eaten raw in salads or boiled as a potherb. Fruits also contain a single solid seed that is edible raw or dried and ground like grain.

Wild Flag - Iris setosa – Iris family. Root boiled in water, pounded between stones, applied externally as a poultice for wounds and swelling. Used in US drugs to induce vomiting (emetic). The fresh Iris is quite acrid and if employed internally produces nausea, vomiting, purging and colicky pains. The dried root is less acrid and is employed as an emetic, diuretic and cathartic.

The oleoresin in the root is purgative to the liver, and useful in bilious sickness in small doses. Poisonous as a food.

## **Orchids**

Lady Slippers - *Cypripedium acaule* - Powdered root - sedative, nervine, antispasmodic, promoting sleep, for toothaches. Steeped root – indigestion.

Ladies Tresses - *Spiranthes sp.* - Bees occasionally visit the flowers for nectar. The foliage eaten by various herbivores, including rabbits, groundhogs, and deer, while the fleshy roots are eaten by pocket gophers when individual plants stray into drier areas. White Fringed Orchid - *Platanthera blephariglottis* – Most common Pine Barrens Orchid. Mammalian herbivores will readily consume this plant if they encounter it.

Calopogon - *Calopogon tuberosus* - Also called *Grass Pink*. The brush of hairs on the lip apparently serves as a "pseudopollen" lure, attracting naive, recently emerged bumblebees. The bees, expecting a reward of nectar and/or pollen, land on the hairs. At this point, the hinged labellum swings down under the weight of the bee and positions the bee on the column, where pollen can be placed on its back.

Rose Pogonia - *Pogonia ophioglossoides* – Also called *Snake Mouth*. Attractive flowers also provide no reward to the visiting bees for pollination services rendered.

Arethusa - *Arethusa bulbosa* – Also called *Dragon Mouth*. The flowers of *Arethusa* offer little or no nectar reward to their pollinators, even though they are attractively colored and sweetly scented. The bees quickly learn to avoid the flowers, so pollination is dependent on an adequate supply of recently-emerged inexperienced bumblebees. Incidentally, *Vanilla* is from another species of orchid

## **Carnivorous Plants**

Bladderworts - *Utricularia sp.* – Despite their small size, the traps are extremely sophisticated. Water is actively pumped out of each bladder until they are flat. Then, when protozoans or insect larvae brush against trigger hairs connected to the trapdoor, it opens and nearby water plus the unfortunate prey is sucked in and the bladder swells. Once the bladder is full of water, the door closes again, the whole process taking only a fraction of a second. Certain species can consume larger prey such as young tadpoles and mosquito larvae by catching them by the tail, and ingesting them bit by bit.

Spatulate Leaf Sundew - *Drosera intermedia* - Droplets of sugary water attract insects. The plants then react to touch, lose Turgidity (water) on one side, curl toward insect, further securing it. Enzymes digest, and nutrients are absorbed. Carnivorous plants are usually found in nitrogen poor soils, and the trapped insects provide needed nitrogen.

Dewthread - *Drosera filiformis*. Thread-like form.

Pitcher Plant - *Sarracenia purpurea* - Modified leaves fill with rainwater, secreted sugar added to attract insects. Leaves also secrete enzymes and absorb nutrients. Hairs point downward in throat of pitcher that keeps trapped animals from escaping. In flower, wide stigma catches pollen in readiness for insect visitation. Looks like blank face of watch (dumb watch). Root infusion used for immunity, to shorten disease or prevent the “pits” of small pox. In 1861, British surgeon saw Indians saved. Tried later, did not work.

## **Shrubs, Vines, and Ground Cover**

Catbrier or Greenbrier - Smilax sp. - Viciously thorned member of the Lily family. Large, deep root nodule can be used in cooling drinks, jellies, or used as a thickener, or can be dried and ground for flour (starchy). Like potatoes, they are white but turn reddish when exposed to the air. Shoots and tendrils edible as a snack or in salads. Tea made from leaves and stems used to treat rheumatism or stomach problems. Parched and powdered leaves used as dressings on burns and scalds. Wilted leaves used as poultice on boils. Tea made from roots used for expelling afterbirth. Roots reputed to contain testosterone precursors.

Coral berry Greenbrier - Smilax walteri – Red berries, no thorns.

American Holly - Ilex opaca - Berries are somewhat toxic although eaten by birds. Used as an emetic. One species called Ilex vomitoria. Hollies are separate sexes (Dioecious). Only females have berries. Many holly species propagated by Elizabeth White.

Winterberry Holly - Ilex verticillata - The only holly that loses its leaves in the winter (deciduous). Red berries grow along stem. Leaves used for tea but no caffeine. Matta, the national drink of South America, is a caffeineated holly.

Inkberry Holly - Ilex glabra – Black berried holly, can be used as ink or dye. Leaves contain caffeine, so good for tea.

Chokeberry - Pyrus arbutifolia – Rose family. Red fruits astringent, can be used in jellies, high in pectin. Bloom in early spring.

Chokecherry - Prunus sp. - Rose family. Tea made from young thin bark or inner bark steeped in warm water. Most popular ingredient for coughs and colds. Exerts a sedative affect on nerves and respiration. Tonic, astringent, coughs, colds, diarrhea. Fruit a common food item. Tea made from cherries with warm water stop bleeding in childbirth. Used as a tonic tea. Berries fermented for diarrhea. Inner bark used as a dye. Leaves and pits contain cyanide. Hydrocyanic acid destroyed by boiling.

Juneberry - Amelanchier canadensis - Rose family. Decoction made from roots and inner bark used for dysentery and cramps. Blooms early in spring. Berries soft and sweet. Ripen in June – first berries. Ripe when Shad run on the Delaware.

Blackberry - Rubus hispidus – Rose family - Leaves of 3, stems bristly, not thorny. Roots and stems peeled for tea to stop vomiting (astringent liquid), to stop diarrhea and for lung trouble.

Tasty fruits.Arrowwood – Viburnum dentatum - Honeysuckle family (opposite leaves). Stalks used for arrows by Native Americans. Decoction from inner bark used for stomach cramps and as an emetic. Berries eaten by birds, but not humans. Genus of Highbush Cranberry.

Wild Raisin - Viburnum nudum – Honeysuckel family - Berries edible, best in jellies.

Twin Flower - Linnaea borealis - Honeysuckle family. Not a native.

Partridge Berry - Mitchella repens - True “twin flowers” joined at base. Madder family. Berries taste like dried apples – have two blossom ends. Leaves boiled in water used for tonic, astringent and diuretic. Insomnia cure, speeds up childbirth.

Flowering Dogwood - *Cornus florida* - bark and roots mildly astringent. Boiled inner bark reduces fevers. Red berries in bunches. Miniature dogwood called Bunchberry. Laplanders made a pudding of whey and crushed *Cornus* berries. Not recommended.

Swamp Magnolia - *Magnolia virginiana* – also called Sweet Bay. Our only native Magnolia. Tulip Tree is also a magnolia. Distinctive red seeds. Back of leaves like felt. Native Americans use berries for fever, dysentery, and joint problems. Mexican herbalists treat scorpion stings with a local magnolia.

Franklinia - *Franklinia alatamaha* - From Georgia. Extinct in the wild since 1790. Member of the Tea (Theaceae) family in which is found the Camellia. Brought to Whitesbog by Elizabeth White, easily located in front of Whitesbog store.

Bayberry - *Myrica pennsylvanica* - Myrtle Family - Fruit a waxy berry. Leaves fragrant, used as seasoning. Nitrogen fixing bacteria in roots. Boiled leaves and stems for tea – astringent and tonic properties, stops fevers. Wax also used for dysentery. 12 quarts of berries provide enough wax for 1 candle. Usually only used for scent. scented candles.

Sweet Fern - *Comptonia peregrina* - Myrtle Family - Leaves and flower tips steeped for tea – used as tonic, astringent, diarrhea. Externally, a cooling wash for poison ivy.

Dwarf Sumac - *Rhus capallina* – Non poisonous. Roots chewed for mouth sores. Dried and pulverized for dysentery. Tea from berries for sore throat or mouth gargle for mouth sores. Dried ripe fruit astringent, poultice for irritated skin. Flower decoctions used for stomach aches. Also used for dye (berries). Young peeled shoots a starvation food. Tea or drink made from berries reminiscent of lemonade.

Poison Ivy - *Toxicodendron radicans* - Sumac family (also the family of Cashew nut). Flowers and berries food for birds. All parts produce a rash in susceptible individuals. Not native to the Pine Barrens.

Virginia Creeper - *Parthenocissus quinquefolia* – Often mistaken for Poison Ivy, but has 5 leaflets. Grape family. Climbs with sticky tendrils, so does not harm siding. Fruit eaten by squirrels and birds but somewhat poisonous to us – Oxalic Acid forms needlelike crystals that can cause internal bleeding.

## **Heaths**

Pine Barrens Heather - *Hudsonia ericoides* and *tomentosa* – Not a true Heath.

High Bush Blueberries - *Vaccinium corymbosum* – Forerunner of cultivated blueberries, berries known as a health food. Fruits contain many soft seeds, as in cranberries. Fumes from dried flowers placed on hot stones was supposed to treat “craziness.”

Dangleberry – *Gaylussacia frondosa*. Classified as huckleberries. Contains hard seeds.

Cranberries - *Vaccinium macrocarpon* – First Native American fruit. Used for sauce, juice, dried. Cranberries used to treat urinary track infections. Recurved petals are actually sepals. Bell-like flowers. Looked like a Crane’s head – thus, cranberry.

Bearberries - *Arctostaphylos uva-ursi* – Tea from steeped leaves strengthens bladder and kidneys (like cranberries). Also a diuretic. Leaves dried and pulverized used for tobacco (Kinnikinnick) and headache. The small, leathery leaves also yield a medicinal astringent and a dye. Smoked

leaves and cooked berries used to flavor meat. Ancient medicine – collected and sold to apothecaries for urinary problems.

Swamp Azalea - Rhododendron viscosum – Very sweet smelling flowers, sometimes referred to as swamp honeysuckle. Leaves poisonous to livestock.

Mountain Laurel - Kalmia latifolia – Stamens imbedded in petals, spring out when touched by insects to insure pollination. Leaves poisonous to livestock.

Sheep Laurel, Lambkill - Kalmia angustifolia – Often poisons livestock as leaves are tender. Like preceding plant, stamen attached to petals spring out when bees visit.

Staggerbush - Lyonia mariana – Leaves poisonous to livestock, waxy white bell-like flowers, dry fruit.

Privet Andromeda - Lyonia ligustrina – large clusters of tiny white bells, dry fruit. Also called Maleberry because fruit don't develop, leaves poisonous to livestock (Andromeda).

Fetterbush - Leucothae racemosa – Blossoms in feather arrangement. Also called Swamp Sweet Bells. Leaves poisonous to livestock. Dry fruit.

Leatherleaf, Cassandra - Chamaedaphne calyculata – Leathery leaves, deer browse.

Sand Myrtle - Leiophyllum buxifolium - Non-poisonous, dry fruit, good ground cover.

Trailing Arbutus - Epigaea repens – Also called Mayflower. Harbinger of spring.

Wintergreen or Teaberry - Gaultheria procumbens – Leaves aromatic, astringent, stimulant, diuretic, anti-rheumatic, cured aches and pains both internally and externally – closely related to aspirin. Collected in autumn and dried, used for oil (Oil of Wintergreen) and flavoring. Berries and leaves very tasty – eaten raw, in tea or as flavoring. Used to flavor teaberry gum.

Spotted Wintergreen - Chimaphila maculata - More striped than spotted. Leaves astringent with tissue drying properties. For blisters, steep in warm water or pulverize fresh, apply externally. Tea used to induce sweating. Root decoction for sore eyes.

Indian Pipe - Monotropa uniflora - Saprophyte - all of the monotropes are parasitic on fungi! These fungi are mycorrhizal with photosynthetic trees, and thus the energy ultimately comes from photosynthesis of the tree, passing through the mycorrhizal fungus on the way to the *Monotropa*. Juices used for eye irritations. Root has been traditionally used as a sedative and for various nervous conditions. It was also used externally for inflamed eyes, bunions and warts. Possibly toxic as it contains several glycosides.

Pixie (Moss) - Pyxidantha barbulata - Not a moss because it flowers. In Heath Order.

Sweet Pepperbush, Soapblossom - Clethra alnifolia – (Heath Order). Fragrant blossoms in spring – a favorite of bees and butterflies. Will lather and can be used as soap.

Sourwood - Oxydendrum arboretum - Only tree in the East that's a member of the Heath family. Great source of honey for bees. Fruit a dry seed. Beautiful red leaves in the fall. Not a native, but one is located near Elizabeth White's home at Suningive.

## **Trees**

Swamp Red Maple - *Acer rubrum trilobum* - Something red every season. Sap can be used for maple syrup before buds emerge, which is early in red. Silver, Box Elder and Norway can also be used for syrup. 40 gal. of sap makes 1 gallon of syrup. In Asia, sap is collected and drunk fresh. Bark pounded and sifted for flour. Helicopter Seeds boiled and eaten hot (not the wings), seedlings can be eaten fresh or dried. Leaves when dead or wilted highly toxic to horses; destroys red blood cells (hemolysis). 1.5 lb. toxic, 3 lbs. lethal. Little pollen, as pollinated by insects. Flowers can be male, female or perfect. Female flowers darker red. Separate sexes on different branches. Tannin used for dyes and ink. Wood soft, used for small items such as hangars, clothespins and veneers.

Oaks - *Quercus sp.* – Beech family. Inner bark – tannic acid, astringent, antiseptic. Tea made for diarrhea, lung trouble. Poultice of root - Circulatory system and heart. Used as dye and for tanning. Acorns used as food by bears. **Black oak**, needle tips on leaves, acorns bitter, bark dark. Acorns soaked in water before or after grinding for flour to remove bitterness from tannins. **White oak**, no needle tips. Lighter bark, acorns not as bitter, used as flour. Catkins are male flowers. Female flowers in leaf axles, develop into acorns. The leaves and acorns of the Oak are poisonous to horses in large amounts, due to tannic acid and causes kidney damage and gastroenteritis. Horses also develop a taste for oaks and acorns and seek them out, so they should be kept away from oak trees. Symptoms of poisoning include lack of appetite, depression, constipation or bloody diarrhea, blood in urine and colic.

Black or Sour Gum - *Nyssa sylvatica* – *Nyssa* means wood nymph. Sour or Black gum, also called Tupelo or Pepperidge (as in Pepperidge Farms). Spicy berries. Horizontal branches. Leaves first to turn red in the fall, somewhat translucent. Strong, hard wood once used for oxen yokes. Now used for rollers in glass factories, pistol grips, railroad ties, etc. Has separate male, female and perfect flowers. Male and female never on same tree (polygamodioecious).

Sweet Gum - *Liquidambar styraciflua* – Sap has healing properties – animals rub against it when wounded. Leaves or roots boiled and used as an astringent or antiseptic. Gum from sap reputed to help sciatica, weakness of nerves, and was mixed with tobacco for smoking by Mexican Emperors. Used as a perfume for clothing in France. Sap can also be used as chewing gum. Male and female flowers on different branches of the same tree. Introduced.

Sassafras - *Sassafras albidum* – Laurel family. Three leaf patterns. Yellow flowers are separate sexes and are on different trees (Dioecious). Very important in the past. Root, bark, flowers and berries all used for tea or tonic to treat high blood pressure, promote perspiration, as a painkiller, an antiseptic, and to bring out rash of measles. Oil can cause narcotic poisoning. Natives used infusions to kill parasitic worms, to treat syphilis, colds, measles, reduce fever, control diarrhea and relieve constipation. Used as a drink, a flavoring and as a seasoning in root beer. Leaves dried and ground for file or gumbo powder. Oil used in perfume and soap. Now considered carcinogenic (liver cancer) and illegal to use in food. Orange wood used in barrels, buckets, posts and furniture.

Gray Birch - *Betula populifolia* - Non-peeling bark. Male flowers drooping catkins containing pollen. Female flower upright, but droops as a cone when fertilized, with tiny winged seeds. Wood usually used as pulpwood or fuel. Short lived tree. Sap and bark can also be used for sugar or syrup.



Pussy Willow - Salix sp. - Inner bark, catkins contain acetosalicylic acid (aspirin). Natives used it for relieving pain, lowering fever, aiding indigestion, promoting sweating, externally for baths. Steeped roots for dysentery. The wood cells ground for flour. Shoots peeled and eaten. Introduced.

Atlantic White cedar - Chamaecyparis thyoides – actually a Cypress.

Eastern Red Cedar - Juniperus virginiana - actually a Juniper. Berries used to flavor gin. Wood is aromatic, rot resistant and insect resistant. Valuable wood for many uses – fence posts, closet lining, deck furniture, etc.

Pine family – Pinus. Inner bark or resin used in tea or in commercial cough syrup for coughs, expulsion of phlegm. 10 % tannic acid and other acids. Also used as poultices on wounds. Sap can be used as a laxative or for sugar. Tea from needles helps sore throats. All Pine seeds edible. Inner bark provides emergency food and needles can be boiled for tea. Our pines are fire adapted. Cones only open after intense heat. When burned, will also sprout back from the roots. However, the tap root dies, causing new growth to be stunted (natural Bonsai). This causes the **Pygmy Pine** forests.

Pitch Pine - Pinus rigida - Three needles per bundle, this is our most common Pine. Not valuable for timber, but used in pulp and for turpentine production.

Short Leaf Pine - Pinus echinata –Two to three needles per bundle, 3-5” in length – not short except as compared to a longleaf pine. Also known as yellow pine, a valuable timber tree.

Scrub Pine - Pinus virginiana – Two needles per bundle, short, twisted needles. Not valuable for timber.

White Pine – Pinus strobus - 5 needles per bundle. Our only soft pine, a valuable timber tree. Not a Pine Barrens native.

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