

# **Bald Cypress as Bonsai (Part 4)**

## **(Developing Cypress Bonsai from Nursery Stock; Growth for Size Stage)**

**By Randy Bennett**

In the past three articles, we have provided general information about the species as well as possible design options for bonsai and a closer examination of branch structure in mature, flat-top cypress. Now it is time to talk about how best to develop bald cypress bonsai. In this article we will discuss the options you have to make the best use of bald cypress from nursery stock.

### **The Three Developmental Stages of Creating Cypress Bonsai**

In creating any bonsai, there are three developmental stages: the “Growth for Size” stage, the “Growth for Design” stage and the “Growth for Refinement” stage. The “Growth for Size” stage simply involves growing your nursery stock to the desired trunk diameter. The “Growth for Design” stage is where the style of the tree is determined, the front is chosen and the structural branches are chosen. As the name implies, this is where you ‘design’ the tree. The last stage is the “Growth for Refinement” phase. It is in this stage that the secondary and tertiary branches are developed, where one begins to concentrate on developing fine twigging and bud pinching to create ramification and leaf reduction. Of course, this particular developmental stage never ends.

For the purposes of this installment on “Bald Cypress as Bonsai”, we will look at the ‘Growth for Size Stage’ of development as it pertains to nursery stock.

### **Obtaining Bald Cypress Nursery Stock Suitable for Bonsai**

You can obtain your material to start your bald cypress bonsai from any number of local landscape nurseries. Nursery stock will not typically have trees with buttressed or fluted bases, even on larger specimens, but you can see from several of the specimens pictured below, that a huge, fluted, buttressed base is not a prerequisite for creating a beautiful bald cypress bonsai.



Dawn Koetting's Award Winning Bald Cypress





You can obtain bald cypress from just about any landscape nursery in the South. You will typically find them for sale in 3, 5, 7, 15 and 30 gallon pots. And you can expect to pay anywhere from \$10 to \$30 for a 5 gallon bald cypress, \$50 to \$95 for a 15 gallon size and \$100 to \$250 for one in a 30 gallon pot (if you can handle one that size). A cypress in a 5 gallon container will have a trunk diameter of about 1 ½ - 2 inches and will be about 6 to 8 feet in height.

When I quote the lowest prices for bald cypress nursery stock in a particular size pot, for example \$10 for one in a 5 gallon container, I am quoting wholesale prices. However, you don't always need a wholesale license to purchase nursery material from a wholesale nursery. For instance, there are a number of wholesale nurseries in Forest Hill, Louisiana that will sell to retail customers at wholesale prices.



**15 gallon pot size – 2-4 inch diameter trunk size**



**30 gallon container – 4 to 6 inch trunk diameter**

### **Growth for Size Stage**

If you are going to collect a cypress from the swamp, chances are you are going to collect a specimen that already has the trunk diameter you want. In such a case, nature has already completed the “Growth for Size” stage for you. If you are going to purchase a bald cypress, you have a choice to make; buy a tree that is already the diameter you want (where “Growth for Size” has been done for you), or buy a tree and grow it to the diameter you want.

Most people would probably buy a tree from a nursery that is already the size you want to work with, but such is not always the case. If you are going to grow for size, I recommend planting a tree from a 3 to 5 gallon nursery pot in a large wooden grow-box made out of cedar fence boards, or even a mortar tub or “bussing” tub, like the ones used in restaurants. This way, it will be easier to pot it up into a bonsai container when needed. The alternative is to plant the tree in the ground. This is an excellent alternative if you are in a big hurry and don’t mind some digging when it reaches the size you want. If you repot it into a mortar tub or bus-pan, you can drill a couple of holes in the bottom for drainage with a paddle bit or spade bit. My recommendation would be a wooden grow-box. It provides greater ‘breathability’ helps retain moisture and you can construct it to be whatever size you need or can readily handle.

Bald cypress purchased from a nursery will be potted in a medium of ground pine bark mulch with perhaps a little sand thrown in. So when you repot, use a similar mix. A product labeled as “Soil Conditioner” is sold at one of the ‘big box’ home improvement stores and is nothing more

than pine bark that has been ground to a particle size ranging from dust to about half an inch. It also has a little sand thrown in for good measure. This is perfect to use – unless you plan on potting it up in bonsai soil or some other medium.

You can, or course, purchase your tree whenever it is convenient. But do your repotting in January to early February, when the tree is in full dormancy. You can transplant it up to the time the buds begin to swell but do not do so after the tree has leafed out. As an example, let us say that you purchase one in a 5 gallon container. In late January, prepare fresh soil in which you will repot the tree after pruning the roots. Prepare the container in which you are going to pot it.

You want to have a training pot that is larger and deeper than what you would ultimately pot it in as a finished bonsai. This will ensure that the tree has plenty of room to continue growing as you develop the diameter you prefer. An oversized Mica Pot is also a good choice. But if you do not have one that is a suitable size, build a container out of cedar fence boards. If, as used in our example, you purchase a tree in a 5 gallon nursery container, you will be reducing the depth of the rootball by about two-thirds to three-quarters. The grow-box pictured below measures 16" x 16" x 6" deep and was constructed for a 3 gallon tree. I would recommend 20 to 24 inches square and 6 inches deep for a 5 gallon container cypress. In addition, I would avoid creating drainage holes in a cedar grow-box. The space between boards is sufficient to allow for drainage. Remember, cypress like to stay wet. The only drilling that will be helpful are ¼ inch holes through which you can run your tie-down wires.



In all probability, your nursery cypress will not have any branching to speak of on the lower part of the trunk and you will have to cut it back to the desired height, but don't do that until you have repotted the tree into the new container. Sometimes, the best lateral roots are to be found several inches below the soil surface, due to the "potting up" methods used in the nurseries. So do not determine the height of the tree until you know where the lateral roots that form the best nebari are located.

## Repotting Your Cypress

Once you have prepared soil and a suitable container with tie-down wire to anchor the tree after repotting, pull the tree from the nursery pot. Using a chopstick, begin gently raking away soil from the top, beginning at the base of the trunk and working your way outward. . Do not cut through the roots at the bottom in order to reduce the height of the rootball just to get it into a tub. Additional roots sprout higher up on the trunk when the tree is potted too deep. This gives the impression that the roots that are visible at the surface are the ones you want. The reality is that the best flare of the root base may be located further down in the container. If you begin by cutting off roots from the bottom of the root mass, you may be cutting off more roots that the tree needs to survive once you get down to where the best root base is located. Or worse yet, you may cut off the best root base and flare entirely. This has happened to many an overzealous bonsai artist before he or she knew better. So try not to learn the hard way.

Continue until you begin to encounter the thick lateral roots and a pronounced flaring of the base. Don't be concerned about cutting away some of the roots on the surface as you work the soil away to get down to where the basal flare is located. They will not be needed if they are above the flare of the thicker roots further down in the container. As long as you perform this operation at the time of year recommended, the tree will be fine. Once you locate the basal flare and larger roots, begin teasing out the remaining roots that will, most likely, be circling the root mass. Tease out those roots at the bottom as well to untangle them before repotting into a suitable growing container.



Once you have removed the bulk of the old soil and you can see the lateral roots you have chosen to be the nebari, prune back their length so that they comfortably fit in the container you have prepared. If you have a root that will be a part of the nebari that is thicker than the rest, prune it back harder than the others. This will slow down the thickening of the larger root and give the other roots a chance to catch up in terms of size. You will also want to remove any taproot. The

next time you repot (in about three years) you can do more pruning on lateral roots to balance their vigor and size and continue to improve the nebari.

After you have examined the root structure to find the best flare at the base, the next step is to determine the best, current, “front” of the tree. You do this by examining the nebari and rotating the tree. You may have to compromise a little on the root structure in favor of the greatest flare. I refer to having a “best, current’ front of the tree because, after growing for a couple of years, you may find that a better front has presented itself.

As far as soil is concerned, use what you will during this phase of training. The most important factor is to have adequate peat-moss, pine bark or other organic material to ensure that the soil is on the acid side AND that it does not dry out too quickly. I use Miracle-Grow Potting Mix for my cypress. It is rich in organic matter and does not dry out quickly. Remember that cypress grow in the swamp. They like to have their “feet” wet. Once you have repotted your cypress in its new container, wire it in so that the tree does not move in the container.

### **Fertilizing Your Cypress During the ‘Growth for Size Stage’**

Your cypress will begin to leaf out in February. Some people may recommend to begin fertilizing right away. In my opinion, this is a waste of time and fertilizer. Trees store their starches and complex carbohydrates in the branches, trunk and roots over the winter months. When they begin to leaf out in spring, they are going to use all of these stored “foods” before they can begin breaking down and utilizing any fertilizers you give. Therefore, the best time to begin fertilizing is when new foliage has begun hardening off, or about the beginning of March. When new foliage has hardened off, the leaves are ready to begin actively utilizing nutrients in the soil and begin the process of photosynthesis to replace the starches that were stored over the winter months. It is only then that trees can begin making use of fertilizers given them.

Fertilize your cypress beginning in March and cease fertilizing in June. The soil temperatures get so warm during July and August that root functions slow down considerably. If you continue to fertilize during the heat of summer, the fertilizer salts build up in the soil and can actually damage root structures. In September you can begin fertilizing again, but you should use a type of fertilizer with little to no nitrogen.

If you repot your cypress in bonsai soil, you must remember that it has less nutritive qualities than regular garden soil, your bonsai are more dependent on you for the elements necessary for food production in the plant. There are three main components to most fertilizers: nitrogen, phosphorous and potassium. Below is an explanation of their function in plants.

**NITROGEN:** This element promotes vegetative growth and is an essential component of the green color in leaves in the form of chlorophyll. It is necessary for the development of leaves and shoots. Too much nitrogen, especially when associated with a lack of phosphorous and potassium, will result in excessive vegetative growth that has weak cell walls. The growth will be flimsy and becomes highly susceptible to damage. Too little nitrogen will result in leaves having



a pale or yellowish color. This is unhealthy for the plant and will be evident by little or no growth. Nitrogen is the easiest for microbial action in the soil to make ready for plant use. Therefore, it is the first element depleted from fertilizer applications.

**PHOSPHOROUS:** This element affects flowering and the development of fruits and seeds. It also promotes strong root development. Strong root development is essential for flowering and fruiting plants and trees. This is because it takes so much food and energy to produce flowers, fruit and seeds. Consequently, it is why we typically have deeper pots for bonsai that flower or fruit. Fertilizers for fruiting and flowering trees will typically have a higher middle number, indicating that there is a higher concentration of phosphorous present.

**POTASSIUM:** This element, like phosphorous, lends a stiffening influence on stems and some evidence indicates that it helps prevent diseases in plants. This element is essential for strong root development and the creation of woody tissue. Potassium also helps plants to withstand very hot and cold weather. It aids in photosynthesis and the uptake of trace elements or micronutrients. Potassium works along with nitrogen, so if you add nitrogen to the soil, it is important to add potassium as well.

When you begin your fall fertilizing regimen, you want to make sure that the middle and last numbers of the fertilizer you use are high. Many bonsai artists who grow bald cypress often experience minor twig die-back over the winter months. Using a fertilizer with high middle and, in particular, a high last number will help ensure strong twigs and less likelihood of die-back over the winter.

In addition to the three main elements, all trees need, to some degree, **TRACE ELEMENTS** or **MICRONUTRIENTS** to stay healthy. All plants need 10 trace elements to maintain their health and vigor. The amount needed will depend entirely upon the species of plant. All fertilizers contain some trace elements and in varying amounts. Each manufacturer of fertilizer has their own formulas and so each brand of fertilizer has varying trace elements. For this reason, a good bonsai grower will use several types of fertilizers and from different sources. This is to help ensure that their bonsai are getting all the trace elements they need.

Below is a list of each trace element and their function in bonsai.

**CALCIUM:** important for general plant vigor. It promotes good growth in young roots and shoots. It also helps to build strong cell walls.

**MAGNESIUM:** helps regulate the uptake of other foods and aids in seed formation. As it is contained in chlorophyll, it is also important in the dark green color in leaves and for the ability of the plant to manufacture sugars from sunlight.

**SULPHUR:** helps to maintain a dark green color in leaves while encouraging more vigorous plant growth. Sulphur is need to manufacture chlorophyll.

**BORON:** aids in cell development and helps regulate plant metabolism.

CHLORINE: involved in photosynthesis.

COPPER: helps the plant metabolize nitrogen.

IRON: assists in the manufacture of chlorophyll and other biological processes.

MANGANESE: is needed for chlorophyll production.

MOLYBDENUM: helps the plant to use nitrogen.

ZINC: is used in the development of hormones and enzymes. It is also used by the leaves and needed to produce seeds.

**NOTE:** Some manufacturers of fertilizer will list the trace elements on the package. Some do not. This is the reason I recommend repeatedly changing the types and brand of fertilizer you apply to your bonsai. Most trace elements are readily available to plants with the possible exception of iron. When plants have a deficiency in iron, it is called chlorosis. It is important to know the difference between nitrogen deficiency and chlorosis. A nitrogen deficiency results in the entire leaf being pale or yellowish in color. A deficiency in iron will result in the leaf being a pale yellow, while the veins in the leaf remain green. Iron is necessary in the production of chlorophyll, which gives the rich green color to leaves. To treat an iron deficiency, apply CHELATED IRON to the leaves and soil.

There are two basic types of fertilizer: organic and inorganic. Which type you use is often a matter of personal preference. The important thing to KNOW is what your tree needs at its' specific stage of development and according to the species of tree. The important to do is to fertilize your tree regularly and during the months it needs feeding.

**ORGANIC:** Organic fertilizers are just what the name implies; they are all organic, with no artificial ingredients or chemicals. They are composed of natural plant or animal products. Organic fertilizers must be converted, by micro-organisms in the soil, into simpler forms that the roots can more easily absorb and use. They are slow to be taken in by the tree but last a long time. Their N-P-K numbers (nitrogen, phosphorous, potassium) tend to be low. For example, the N-P-K numbers for Alaska brand fish emulsion are 5-1-1. The N-P-K numbers for Biogold organic fertilizer pellets are 5.5-6.5-3.5. The numbers will always be listed on the package.

**INORGANIC:** Inorganic fertilizers are man-made. They are "pre-digested" and are ready and available for immediate consumption by the tree. Some are so completely broken down that they can be immediately absorbed through the leaf. Inorganic fertilizers are short-lived and must be applied more frequently – usually weekly. Their N-P-K numbers are always much higher. For example, the N-P-K numbers for Miracid by MiracleGro are 30-10-10. Osmocote fertilizer granules have an N-P-K of 14-14-14.

Which type of fertilizer you use will depend on a number of factors. For example: if you go into the swamp and collect a Bald Cypress stump, you are starting with just that – a stump – no branches and a greatly reduced root-ball. You will probably want to use chemical fertilizers in

order to obtain as much growth as possible. After several years of development, when you have grown your basic branch structure and are beginning to develop secondary and tertiary branches, you would switch to organic fertilizers, to avoid excessive, unwanted growth and long intermodal spacing.

As a second example: let's say that you go to your local nursery and purchase a one gallon juniper. You style the tree by pruning and wiring the trunk and branches and pot it in a bonsai container. The design of your bonsai is essentially there. You simply want to maintain it and finish developing pads of foliage. In this case, you would avoid chemical fertilizers altogether and use organic food.

The only thing I do not like about chemical fertilizers is that they have a tendency to build up salts in the soil over a period of time. This can harm the roots of your tree by burning them and drying out feeder roots. In addition, chemical fertilizers do not contribute to the development of microbes in the soil. Remember, it is microbial action that makes the elements ready and available for use by the plant. Organic fertilizers promote and feed microbes, enabling them to develop.

Remember this as well: plants and trees, like animals and humans, have immune systems. In plants they help fight off disease and insect infestations. Microbial action helps to create a balance in the plants immune systems. When we use chemical fertilizers that stimulate rapid growth in the leaf structures, but do not enable microbes to keep up with the pace of growth, you will begin to experience a greater risk of disease and insect damage due to a weaker immune system.

### **Completion of the "Growth for Size Stage"**

While you are growing your cypress to obtain a desired size, you should do no further pruning. Any pruning you do will deprive the tree of resources (foliage), which it uses to produce food and, therefore, growth. If you started with a 5 gallon nursery container and a trunk diameter of 1 ½ to 2 inches, it may only take a year or two to obtain a trunk diameter of 3 inches. The length of time to get a tree to the diameter you desire will depend on: the amount of water you provide, proper fertilization and the amount of sunlight available.

When your tree reaches the desired diameter, it is time for phase 2: the "Growth for Design Stage".