

# Shape and Prune Miniature Trees





PHOTOS BY THE AUTHOR

## Controlling growth of miniature trees

Trees don't come ready-made for our railroad gardens. You can't walk into a nursery and pick up a mature-looking live tree that's in scale with your railroad, like you can a piece of rolling stock or a structure. Trees keep growing until they reach maturity, and it's the rare exception that looks in-scale and realistic when full grown. There are things you can do to slow down that growth and train the tree into a reasonable resemblance of a realistic, full-grown tree.

### Pruning

Much has already been written on the subject of pruning and shaping trees. I'll summarize specific information in the accompanying table for each of the common conifer species, some deciduous trees, and a couple of broad-leafed evergreens.

There are some basic principles of pruning that I should mention first. We typically prune to control the size of our

Two Washington hawthorn trees (*Crataegus phaenopyrum*), on either side of the Farm & Garden store, grow in plastic containers sunk in the ground. These 10-year-old trees are maintained in dwarf form by root pruning, confinement, and top trimming.

trees, but you should also prune to remove dead or dying branches, rubbing or cross-ing branches, or branches that overhang track or touch structures. Pruning during the dormant season is best for most deciduous trees. However, evergreen shrubs and trees respond best to pruning when they are in active growth. Spring is a good time to trim the new growth (called "candles") on spruce, pines, and similar plants. Summer is the season for trimming other evergreen trees and shrubs. Maples, birches, and several other trees have a tendency to "bleed" sap if they are pruned in late winter or early spring. While this isn't harmful, it can be unsightly. Consider summer to mid-winter for pruning these trees. Otherwise, be sure to finish your late-season pruning

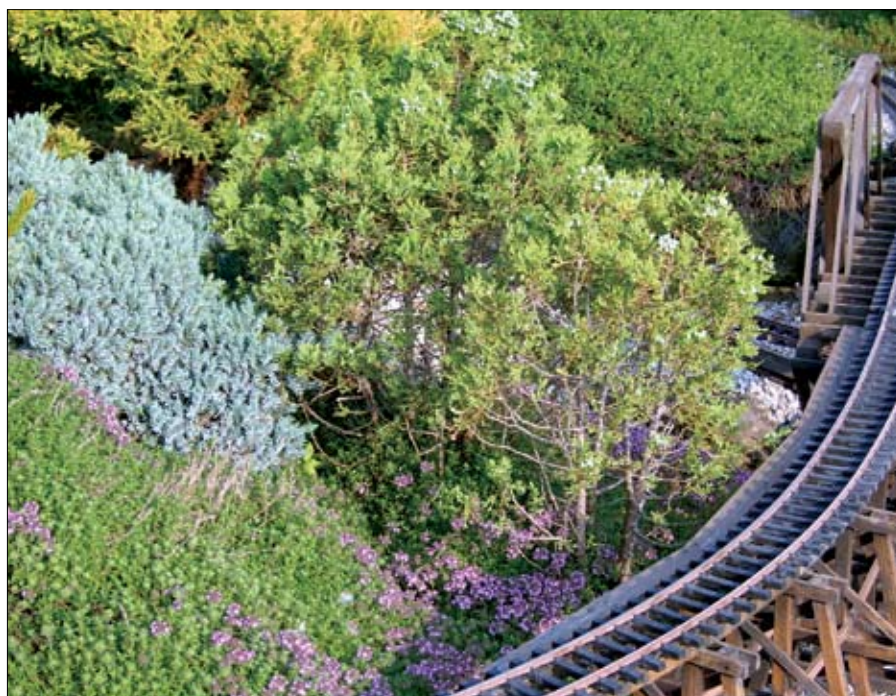
tasks in plenty of time to allow hardening off (becoming adapted to the cold) of any new growth this stimulates. A rule of thumb would be to stop pruning after mid-summer for most trees and shrubs.

### Pinching and rubbing

Pinching is a quick, labor-saving method of removing soft, spring growth on spruce, pines, and other related evergreens. It is done by grasping the "candle" between thumb and forefinger and breaking the tender growth with a pinch. Sometimes the thumbnail must be used. I always wear a pair of disposable latex gloves when I pinch my pines to avoid getting sticky sap all over my hands. Snapping off one half to one third of each candle on these trees promotes denser new growth with shorter

Plant type	When to prune	How to prune	Special tips
Maples <i>Acer</i> spp.	Fall to mid-winter	Shape to retain strong central leader and well-distributed side branches	Avoid “bleeding” from pruning in late winter to spring
Birches <i>Betula</i> spp.	Summer	Remove crossing or rubbing branches	Same as for maples
Boxwoods <i>Buxus</i> spp.	Late spring (after first flush of growth)	Remove winter-damage & trim for shape; stop pruning by mid-summer	Protect from winter wind to reduce damage
Cotoneasters <i>Cotoneaster</i> spp.	Anytime; late spring best (for good flowering and berry production)	Train for tree shape & cut out dead or damaged branches	Wipe pruner with alcohol between cuts to prevent disease (fire blight)
Junipers <i>Juniperus</i> spp.	During dormant season or as needed during summer	Cut branches where they join trunk or larger branches; avoid leaving stubs	Natural growth gives best shape; trim only to expose trunk or open up dense growth
Pines <i>Pinus</i> spp.	At “candle” stage	Remove by pinching or pruning ½ - ⅔ of the new growth (“candle”)	Yearly pruning will keep tree smaller with shorter needles
Mugo pine <i>Pinus mugo</i>	Same as for other pines	Same as for other pines	
Spruces <i>Picea</i> spp.	Same as for pines	Same as for pines	Preserve central leader to maintain tree shape
American arborvitae <i>Thuja occidentalis</i>	Heavy pruning during dormant season; trimming for shape through growing season	Cut back to trunk or larger branch; don’t leave stubs. Older stems won’t resprout	Choose small cultivars; arborvitae are fast, dense growers
Hemlocks <i>Tsuga</i> spp.	Spring or summer	Trim to shape & cut out dead or damaged limbs	Choose dwarf cultivars; preserve natural look
Elms <i>Ulmus</i> spp.	Late winter or early spring	Thin out limbs (no more than ⅓ at a time) to open up tree for a mature look	<i>Ulmus parvifolia</i> ‘Hokkaido’, ‘Ed Wood’, & ‘Seiju’ are the smallest dwarfs

**Additional notes:** Cutting some shrubs down to within 2-3 inches of the ground in late winter will reduce plant size and produce neater new growth. Spiraea is one plant that responds well to this severe pruning (see “Plant Portraits” in the April 2007 GR). This is not recommended for evergreen and deciduous trees, although hard pruning of boxwood (*Buxus* spp.) back to a basic framework can rejuvenate an overgrown specimen.



These dwarf white cedar trees (*Chamaecyparis thyoides* ‘Little Jamie’) are over 10 years old, have reached their mature size, and have never been trimmed.

needles. When this is combined with thinning out a third of the branches, the resulting effect is to miniaturize the tree. Rubbing refers to rubbing off undesirable buds, such as the little clumps of needles that appear on the trunk and branches of conifers that have been opened up to more light by pruning. You can brush off soft new growth with your fingers, but harder growth may require a fingernail. I wear heavier gloves when I do this, as latex gloves tend to rip on the rough bark.

### Root pruning

Trees maintain a balance between the mass of foliage and mass of roots as they grow. If either of these is reduced, growth slows. Trimming off a third of the branches and leaves not only opens up and shapes the tree to look more mature, but it also slows down the overall growth of the tree. The same holds for reducing the mass of the roots. In bonsai culture, trees are removed from their containers when





A partially trimmed dwarf Scotch pine (*Pinus sylvestris* cultivar). The new growth ("candles"), seen on the right, have been pinched from the limbs on the left.

they are dormant, and one third of the roots are trimmed away. This, combined with continued confinement of the roots plus top trimming, all contributes to keeping the tree miniaturized and very slow growing. It would be nearly impossible to dig up and root prune all of the trees in our railroads. There are two ways I can suggest to add the controlling effects of root pruning to the more common practice of limb and foliage trimming.

The first is to grow some of your trees in containers. Plastic pots are used and are set into the ground with their tops hidden by mulch or groundcover plants. Every two-to-three years, lift the pots from the ground (when the tree is dormant), remove the tree with its root ball from the container, and trim off one third of the roots. To keep the roots from sneaking out the drainage holes in the bottom of the pots, you should line the inside of the container with several layers of polypropylene weed barrier (not plastic sheeting). (For more information on growing trees in buried containers, see "Miniscaping" in the February 2005 issue of *GR*).

A second method of root pruning your trees is considerably easier. Using a sharp tool (a garden spade for larger trees or a garden trowel, weeder, or stout knife for



A 10-year-old dwarf white pine (*Pinus strobus* 'Nana') has had regular pinching of its candles to control size and produce smaller needles.

smaller ones), go around the tree half way between the trunk and the drip line (an imaginary line below the farthest extent of the foliage), plunging your tool 4-6" into the ground. Do this repeatedly as you circle the tree to cut all roots at this diameter. This will slow the tree's growth until it can send out more roots to re-establish its balance between leaves and roots. Root pruning in this fashion should be done with each major upper tree trimming.

### Tools and techniques

Good hand pruners are essential for efficient pruning. Choose bypass pruners over anvil-type pruners: the latter tend to crush stems, while the scissor action of the former makes a cleaner cut. Keep the blades of your pruner sharp and wipe them frequently with an alcohol-soaked rag to prevent spreading disease. Hand pruners can cut through branches  $\frac{3}{4}$ " in diameter or smaller. If you have arthritis or find that pruning quickly tires your hand muscles, consider buying a pruner with ratchet-action. For smaller trimming chores, such as leaf and soft-stem trimming, choose a good garden scissors. These often have a serrated notch in the blade near the handle that will allow you to cut stems or limbs up to  $\frac{1}{4}$ " thick. **II**

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# Shaping miniature "trees"

by Jack Verducci | San Mateo, California    Photos by the author

## Haircut method of pruning



In the last installment of this series I talked about using accent trees around structures. This time we'll look at the trimming of a variety of different plants to resemble trees.

In the first series of photos I am trimming a pink snowrose (*Serissa foetida* 'Pink Princess') in preparation for planting (photo 1). I call this the "haircut method." I simply grab a handful of plant with one hand (photo 2), then cut off the parts of the branches that overhang my hand (photo 3). I have big hands, so you may want to grab the plant further up the trunk than I do. After you cut the overhanging branches, let them go and you will have a reasonably shaped, round tree (photo 4). You can go in and touch up your tree with scissors, if you feel it necessary (photo 5). This method works well with several types of leafy plants, including miniature roses.

You may ask, "why do this?" What I try to do is train the plant to grow like a small tree, rather than a small bush. In most cases I will try to develop single-trunk trees by removing extra growth and leaving only one branch to become the tree's main trunk. I also remove all crossing and redundant branches to open

the plant up and make it look more treelike. This is only the first pruning—you will have to repeat this later to obtain and keep the miniature-tree look. Starting out before you even put the plant in the ground helps in your training efforts.

The following pictures show various plants as they (A) come from the nursery and (B) how they look after I trim them, before planting.

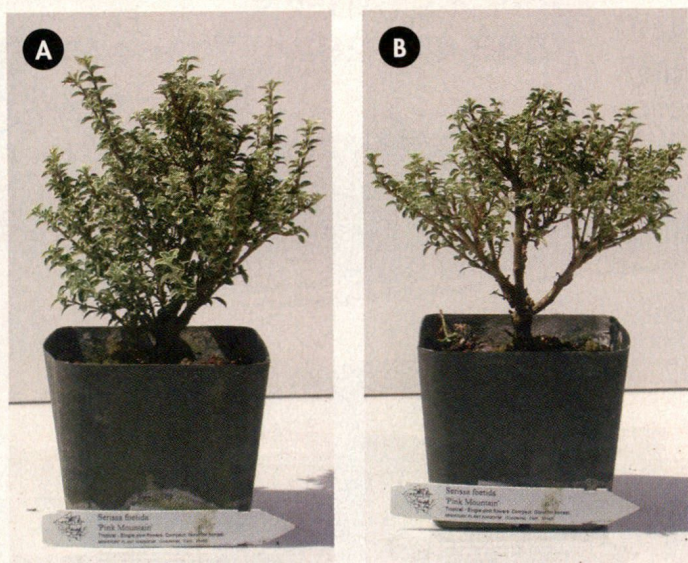


## Okinawa Holly (*Ilex dimorphophylla*)

This tropical plant, USDA Hardiness Zones 8-10, is great for bonsai and can be made into a fine little tree. You may not want to use the haircut method on this one, though. Its leaves are hard and sharp. Nevertheless, it should still be trimmed in the same way as discussed in my last article. That is, shaping the tree, then removing crossing and redundant branches.



### Pink snowrose (*Serissa foetida* 'Pink Mountain')



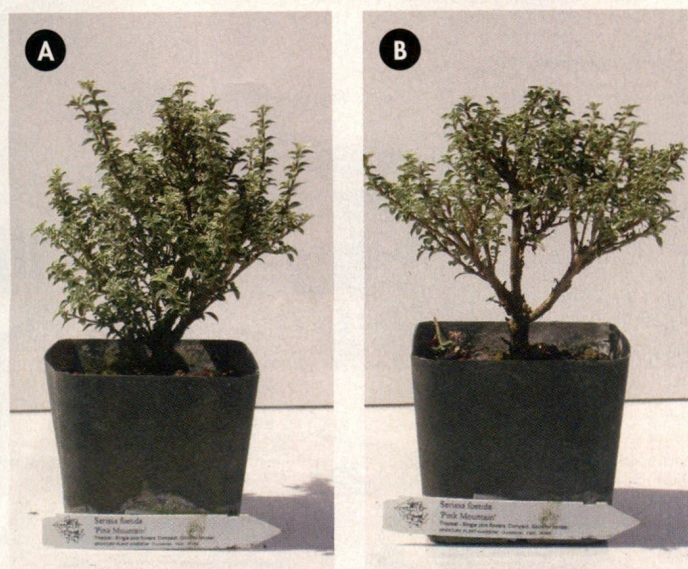
Pink snowrose (*Serissa foetida* 'Pink Mountain', Zones 9-10), is a tropical plant with single, pink flowers. It is compact and good for bonsai. This is another great little plant that can be made into a garden-railway tree.

### *Ulmus parvifolia* 'Seiju'



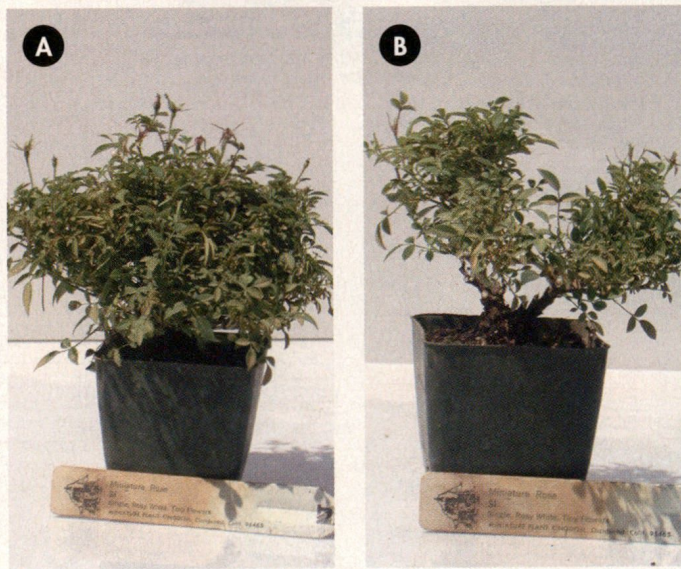
The Seiju elm (Zones 5-9) makes an excellent little tree. A near cousin, the Hokkaido elm (*Ulmus parvifolia* 'Hokkaido', Zones 5-9), is another good candidate. The Hokkaido elm has a gnarlier trunk than the Seiju, but is more fragile. Both can be trimmed in the same manner.

### Miniature rose 'Little Pinkie'



Miniature rose 'Little Pinkie' (Zones 3-10) has double, pink flowers. In general, miniature roses are fun to work with and you can do a lot with them. Even if you mess up while pruning it, the plant can usually recover. I have even accidentally cut the entire plant off at the base and it still recovered! Flowers of miniature roses can be quite small; not quite small enough to be in scale, but they are not too big.

### Miniature rose 'Si'



Miniature rose 'Si' (Zones 3-10) is another rose that has been trimmed into a tree form. With tiny leaves and flower buds, 'Si' is the smallest rose of all. It's classified as a "microminiature" and stays under 10" tall, even when mature. Compare the finished product with 'Little Pinkie'. **II**





Photos by the author

## A pruning primer

I learned the scientific theories of pruning in a college class called “Landscape maintenance techniques,” but I learned the art of pruning from Larry Watson, a nurseryman I worked for, who’d been pruning trees for more than half his life. About once a month he’d take a group of us out to the fields, choosing a different type of tree each time. We’d talk about how each species of tree grew naturally and then discuss its response to pruning. After demonstrating on a couple of trees, he’d let us each try our hand at it. We did this for a couple of years, learning the differences between pruning oaks, maples, pines, spruce, and ash trees. Over time we were able to see the results of our efforts, learning what worked best for each tree species. Larry, like all good teachers, knew this was the best way to learn—first by understanding, next by doing, and then by observing our results.

You don’t need to go to these lengths to learn how to prune plants on your outdoor railroad, however, because pruning plants is pretty easy once you understand a few basic plant concepts. First, plants are living things and respond to pruning

in fairly predictable ways. The second rule is that no matter how much you know about pruning, plants are living things and often respond to pruning in very unpredictable ways. But not to worry; the two great things about pruning are that it’s hard to actually kill a plant by pruning it (at least in moderation) and even the worst mistakes can often be corrected.

This is what happens when you cut a stem or branch of a tree. Normally, most of the plant’s energy is directed to the tip of the stem (a process officially called “terminal growth”). Removing the tip (or terminal) of the branch diverts the energy back along the stem to its side (“lateral”) buds. Don’t worry if you can’t see these side buds—they’re usually either very small or invisible (“latent”) to the human eye. In essence, removing the tips of branches actually creates bushier, denser plants because it re-directs all the energy that would have gone to a few tip buds to the side buds instead.

Pruning also allows you to control the direction of new growth. If you’ve ever grown hybrid tea roses, you know that the normal rule is to keep the center of the

Judicious pruning turns a miniature lemon-scented geranium into a colorful shade tree along the Rio Verde Western Railway of Larry and Tanya Rose in La Mesa, California.

bush relatively open to discourage insects and diseases. This is achieved by pruning to what’s called an “outside bud,” meaning that you need to find a bud pointing to the outside (rather than the inside) of

### Pruning terms to remember

**Candle.** The new growth of a pine, just before the needles elongate

**Lateral bud.** Bud growing along the side of the branch, usually at the base of a leaf or a needle

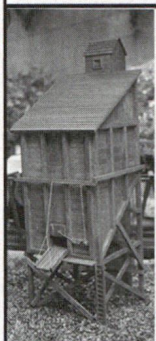
**Latent bud.** Dormant or inactive bud, often invisible to the eye

**Pinching.** Removing unwanted, soft new growth with your fingertips

**Terminal growth.** The plant process in which most of the plant’s energy is directed toward the (terminal) buds at the tip of the branch



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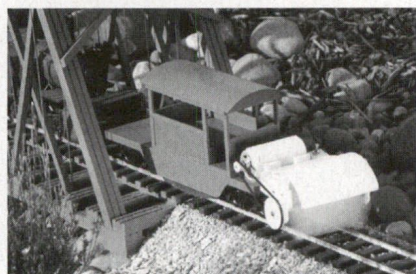
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## PATHWAYS CONTINUED

the plant and prune the stem just above that bud. This redirects the energy to this "outside" bud, resulting in a new branch that will grow outward.

Thinning a tree or shrub to make it look more natural in the railroad landscape is a slightly different matter. As branches grow older, their latent buds become less active and less able to kick into action when the terminal buds are removed. This explains how you can cut a larger branch all the way back to a main tree trunk and not end up with mass of new growth at the pruning site, though this does happen on occasion.

Pruning conifers is just a bit more complicated than pruning deciduous shrubs. Spruce trees, such as Alberta spruce, are generally easy to shape through pruning because they have very active lateral buds.

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Sharp pruners, such as these by Felco, make pruning jobs go smoothly. By setting the newly purchased plant up high, it's easier to see exactly where to cut on this dwarf yaupon holly (*Ilex vomitoria* 'Beehive').

Chamaecyparis (false cypress), junipers, and yews also have active lateral buds.

Pines react differently to pruning because their buds are much less active than those of spruce. In fact, once the needles have dropped from a pine branch, it's unlikely you'll get the tree to sprout on that branch again. It's best to control pines when they're actively growing, at what's called the "candle" stage. A candle is the new tip growth of the pine, just before the needles start to stretch out. If you want to control the size of a pine, simply pinch out the tip

## Pruning Q&A

**Q: When's the best time to prune trees in the garden railroad?**

**A:** Every time you make a cut on a plant, you're actually encouraging latent buds to grow. With that in mind, it's best not to encourage new growth in late summer or fall in areas with cold winters. Most plants can be pruned in the winter, spring or early summer and recover quite nicely. If you want blossoms on your spring-blooming shrubs and trees (such as dwarf lilacs or spireas), it's best to prune them right after they bloom. If you prune spring-blooming plants in the summer, you're likely to prune off buds for next year's flowers. In warmer climates you can prune plants just about any time they're actively growing.

**Q: Every winter my Alberta spruce burn on the south side. Should I prune out the dead parts?**

**A:** In some parts of the country (particularly in the southwest, where there's bright sunshine, lots of wind, and low moisture in winter), many conifers, including Alberta spruce, will often show signs of "sunburn." It's best to wait until later in the spring to do any pruning on these trees. In many cases, the latent buds will soon leaf out and fill in the dead-looking areas. If those areas fail to leaf out, use this as an opportunity to create more open, natural-looking forest trees.





Pines, such as this dwarf mugo (*Pinus mugo* 'Mops') should be "pinched" while in the springtime "candle" stage. The candles can be shortened to any desired height, and should be pinched just before the needles elongate.

of the candle, leaving as much or as little of the new growth as you want to remain on the tree. You can even remove the entire candle if you don't want the pine to grow at all that year. It's also better to "pinch" pine candles instead of pruning them with cutters, because metal tools can easily injure new pine needles and may result in burning or die-back on those needles.

After all is said and done, pruning is as much an art as it is a science. And, like any form of art, it takes lots of practice. Start with some inexpensive plants before

you tackle bigger or more costly projects. Have specific goals in mind and experiment with different techniques. And just as professional woodworkers follow the adage "measure twice, cut once," make doubly sure to remove only the branches you mean to. **11**

**Q: Every summer spider mites practically defoliate my Alberta spruce. Should I prune out the dead-looking parts?**

**A:** Spider mites are a serious problem on Alberta spruce in hot climates because rising temperatures increase the mites' rate of reproduction! Keeping your trees and the areas around them clean of dead needles is perhaps the best solution to reducing the mites' effects until the temperatures start to drop again. (This physically removes many of the mites and their eggs from the site.) Alberta spruce recover fairly quickly from needle loss, so wait to see what's really dead on the tree (as opposed to what just looks dead) before taking your pruners to them.

**Q: What type of pruners should I use to trim my trees?**

**A:** Any tool that you choose should be sharp—that's the first rule for making clean cuts that won't damage your plants. My advice is to buy one pair of really good pruners that you can use for all your pruning needs, from G-scale trees to normal-sized landscape plants. I use Felco pruners because they're high-quality tools that can be taken apart for cleaning and sharpening. Felco pruners come in several styles, including lighter weight models for women, a model with rotating handles, and even a version for left-handed people. I also like the idea of just one pair of pruners to handle every job in the garden—much easier to keep track of than several specialized tools.

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