Background Trees

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Introduction

Most model railroad layouts need trees – lots of them. In fact, it's almost impossible to have too many trees. It's fairly easy to make the foreground trees. You probably know all about this type; they are the ones close to the front of the layout. They are nicely detailed, placed near the points of interest, and easily seen and admired by the viewer. They may be "store-bought", built up from kits, or even scratch-built. In any case, they are either relatively expensive to obtain or time consuming to make. For these reasons, most modelers try to get by with far fewer trees than would normally be present in a prototype scene.

Photo 1 - Subalpine Fir Forest

Another problem is the forced perspective that most of us use on our layouts to give the impression of greater distance. We cannot use trees further back on the layout that are the same size as our foreground trees or the illusion of distance is ruined. What we need are smaller-sized trees in the middle ground and background areas that complement the illusion. These smaller trees can either be deciduous or conifer, depending on the area being modeled. Since most background scenes are mountains, this article will concentrate on making smaller conifer trees for mountain slopes. These trees can be mass-produced and will work effectively in the middle ground or background areas of the layout.

The smaller trees may be used for various scales (based on normal perspective) in accordance with the following table. If you need to use even greater forced perspective, you can place these trees closer to the front edge of the layout than indicated. And of course, if you have the luxury of unlimited space and a reduced need for forced perspective, you can position them even further back from the front edge than indicated.

SCALE	USE	PLACEMENT
N	Foreground to near-foreground	Front edge of layout to 12" back
HO	Near-foreground to middle ground	12” to 24” back from front edge
S	Middle ground to background	24” to 36” back from front edge
O	Background	36” or further back from front edge

Table 1 – Smaller Tree Utilization

There are five basic requirements for making these smaller conifers. They must be: ***• Quick • Easy • Durable • Cheap • Realistic •***

“Quick” and “Easy” are self-explanatory. We need to be able to make a lot of trees in a hurry without too much effort. “Durable” means we need trees that can be planted and forgotten. We don’t want any maintenance or replacement problems later on, since the trees will be at relatively inaccessible places on the layout. “Cheap” means inexpensive – the lower the cost per tree, the more trees we can make. “Realistic” is a relative term. Of course we don’t expect our smaller trees to look as real as ones in the foreground. In fact, we want our smaller trees to be almost inconspicuous as individual trees and to blend into an overall forested look. You have all heard the saying, “You can’t see the forest for the trees.” Well, it’s true. If the individual trees are recognizable, then the overall impression of a forest is lost. The effect we are after is of a realistic forest, not necessarily of a realistic tree.

Photo 2 - Mixed Subalpine Fie / Spruce Forest

A couple of points to keep in mind about conifer forests are species types and habitats. The major conifer species include the pine, spruce and fir families. Conifers come in all shapes and sizes. Foliage ranges from steely gray-blue, through blue, blue-green, dark green, green, to yellow-green. Trunks, branches, and twigs vary from blackish-brown, through brown, reddish-brown and gray-brown, to gray and whitish-gray. Cones, which may be cylindrical, egg-shaped, or berry-like, vary from brown, through all shades of reddish-brown and yellow-brown to purple, red, and blue. Some conifers are branched all the way to the ground; others show a wide expanse of bare trunk between the lowest branches and the ground. Shapes vary from tall and pointed to round and bushy. Branches may grow out horizontally from the trunk, or may angle downward or upward.

Conifers grow in altitudinal zones – in other words, some conifer species prefer high mountain slopes while others are only found in lowland meadows or along stream banks. Some conifer forests include mixed species; others may be many square miles of seemingly identical trees. One last point about conifer forests – a typical forest will include various trees in different stages of growth and condition. Look closely at Photo 1. Some trees are mature, healthy specimens; others are stunted, diseased, or dying. Don't forget the lightning-struck, wind-swept, bent, broken, fire-damaged, multiple-trunk, dead, and fallen trees either. And of course, new seedlings will be sprouting anywhere the cones fall.

This article will show you how to mass-produce a five-inch tall model of a generic, healthy, mature conifer that can represent a variety of species for multiple scales. It is probably most representative of a subalpine fir, which is ideal for a mountain slope.

Prototype Tree Information

This information is provided for the benefit of modelers who insist on exact prototype details. The scientific name for a subalpine fir is Abies lasiocarpa. On exposed sites near timberline, it is often reduced to a prostrate shrub, but under closed-forest conditions it attains diameters of 12" to 24" and heights of 45' to 100', depending upon site quality and stand density. Trees larger than 30" in diameter and 130' in height are rare.

Subalpine fir is distinguished by a long, narrow conical crown terminating in a conspicuous spire-like point and rows of horizontal branches reaching nearly to the base. Foliage is dark green. The bark is gray and smooth, with resin blisters. Cones are cylindrical and upright on topmost twigs; they are dark purple, 2.25" - 4" long, when they open in mid-August to mid-October.

The subalpine fir is the smallest of eight species of true fir indigenous to the western United States. The species is found throughout the mountainous regions of the west. In the Rocky Mountains, it ranges from as low as 8,000' to

timberline at 12,500', but it is usually on north slopes at 9,500' to 11,000'. It is most typically found in combination with Engelmann spruce and forms a relatively stable mixed fir-spruce forest. It is also found in varying degrees in other mixed conifer type forests.

On gentle slopes below timberline, subalpine fir, Engelmann spruce, and occasionally lodgepole pine grow in north-south strips 30' to 165' wide and several hundred yards long approximately at right angles to the direction of prevailing winds. These strips are separated by moist subalpine meadows 80' to 250' wide where deep snow drifts accumulate.

Photo 3 - Subalpine Fir Bark

Two varieties of subalpine fir are recognized: the typical variety and corkbark fir. the latter, readily distinguished by its peculiar, whitish, corky bark, is restricted to the Rocky Mountains of southern Colorado and the Southwest. Other common names for the typical variety include balsam, white balsam, alpine fir, western balsam fir, balsam fir, Rocky Mountain fir, white fir, and pino real blanco de las sierras.

Materials Needed:

- Plastic tree armatures – see text for source
- Round toothpicks – one half toothpick per tree
- Adhesive – for gluing toothpicks to plastic armatures (I used Elmer's Carpenters Yellow Wood Glue)
- Flat light gray primer spray paint – for painting armatures (optional, see text)
- Floral wire, 26 gauge, green – to straighten armatures if required (optional, see text)
- Woodland Scenics Green Blend T49 Blended Turf – for foliage
- Hairspray – to attach foliage to armatures (unscented, extra-hold)
- Styrofoam block – to hold trees

Making the Model Trees

The key element for our model trees is the armature. We need something that is readily available, relatively inexpensive, easy to work with, and resembles the basic shape of the tree. I found these plastic floral arrangements at Garden Ridge, a home decorating store in Fort Worth, Texas. They are item number 789112230771 and are called ASST PLASTIC GREEN. They were $0.68 each. I found two slightly different types with the same part number. Both types are shown in photo 4 and either type is usable. They are about fourteen inches from tip to bottom of stem. This kind of plastic floral material is probably available at most home decorating or craft stores.

Photo 4 - Plastic Floral Arrangements

Photo 5 - Adding the Toothpicks

Each floral arrangement consists of a brown stem with nine green, tree-like armatures. Each green armature is about five inches tall. Start by pulling off the armatures from the brown stem. Discard the stems and cut enough toothpicks in half so that you have one piece of toothpick per armature. Glue the cut end of a toothpick into the hole in the bottom of an armature with any general purpose adhesive.

If the plastic armature is twisted or bent, it can be usually be straightened by soaking in hot water. If a curved trunk cannot be straightened by the hot water method, you can wrap the trunk with 26 gauge floral wire in a “barber pole” fashion in order to make a perfectly straight, erect tree.

Photo 6 - Tree Making Process

Stick the toothpick-mounted armatures into a piece of Styrofoam. If desired, spray some of the armatures with a flat gray primer. In photo 6, some of the armatures are shown at the center of the photo with the gray paint. At the right of photo 6, about half of the finished trees were made from gray armatures; the remainder were made with unpainted ones. Trees using the gray armatures will end up slightly darker in color. The use of the gray armatures is really only noticeable if you flock the trees lightly and let some of the bare branches show through the foliage. For general purpose background trees, painting the armatures is not really worth the effort. Also, about half of the trees were made from each type of floral material.

To flock the tree, hold an armature by the toothpick and rotate it while spraying it with hair spray. Hold the armature over an empty container and sprinkle with green foam material. Shake off excess foam back into the container for reuse. Repeat the hair spray and foam application if more coverage is desired. Place the completed tree back into Styrofoam block until ready to plant on the layout.

To plant, drill a small hole into the scenic base about the diameter of the toothpick. Put a dab of glue on the toothpick and stick it into the hole. For those of you not into narrow gauge, just remember – green side up. ☺

Summary

I usually make about six-dozen trees at a time in a "batch". The actual time required to add the foam foliage material is only about ten seconds per tree. It's hard to figure the total time required on a per tree basis, but I would estimate it to be less than thirty seconds total per tree. Photo 7 shows a close-up, ground-level view of the same complete trees shown at the right of photo 6.

Photo 7 - Completed Background Trees

But even better than the short time required is the low cost. The total cost of all materials – including armatures, glue, toothpicks, hairspray, and foam – works out to less than ten cents per tree. Not bad for a fairly good-looking representation of a conifer. Now … that's a few hundred done – and only a few thousand more to go!

References:

Silvics of North America; United States Department of Agriculture (USDA) Forest Service, Agriculture Handbook 654; available online at: http://www.na.fs.fed.us/spfo/pubs/silvics_manual/table_of_contents.htm

Forestry Images: The Source for Forest Health, Natural Resources and Silviculture Images; A joint project between Bugwood Network and the United States Department of Agriculture (USDA) Forest Service; available online at: http://www.forestryimages.org/

PLANTS Database; United Stated Department of Agriculture (USDA) National Resource Conservation Service; available online at: http://plants.usda.gov

Sn3nut's Home Page; My personal home page containing other model railroading articles, clinics, photos, links and assorted information; available online at: http://members.cox.net/sn3nut/

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