# Carrara Studio 3 Tutorial:
# Make a Weeping Willow Tree

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**November 30, 2003**

Carrara Studio 3 has a new Plant Modeler which provides 28 default tree and plant shapes which may be used to add vegetation to a landscape. The default trees may be used as is, or they may be modified to produce a custom tree, or the tree can be produced completely from scratch. The trees are also exportable in a number of different file formats so they can also be used by other 3D programs if you wish. For this month's tutorial, we are going to modify Carrara's default Willow tree to produce the Weeping Willow trees shown in the image above.

A few of the images used in this tutorial are fairly large, specifically the two images of the Advanced Parameters window and the image of the Shader window. To speed up download times, smaller versions of these images are provided in the main body of the tutorial. Clicking on one of these smaller images will open the full sized version in another window. If this larger image doesn't appear at full size, then let your mouse hover over the image and click on the magnification button that appears.

## Strategy for Modifying a Tree

(1) Pick a tree similar in shape or type to the one you want to produce.

(2) In the Plant Modeler, modify the tree's parameters.

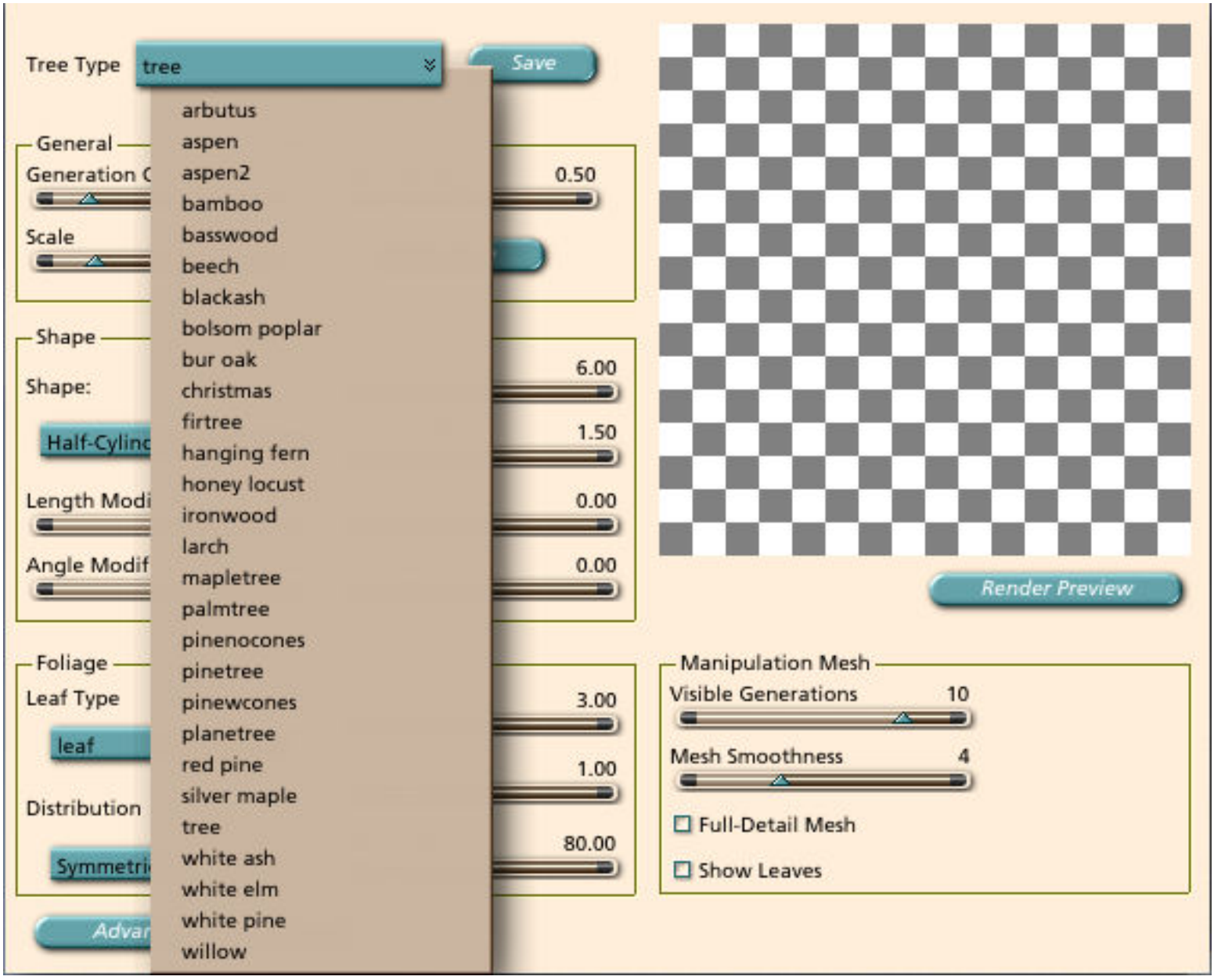
(3) Modify the leaves or create new leaves if needed.

(4) Apply textures that fit your tree type.

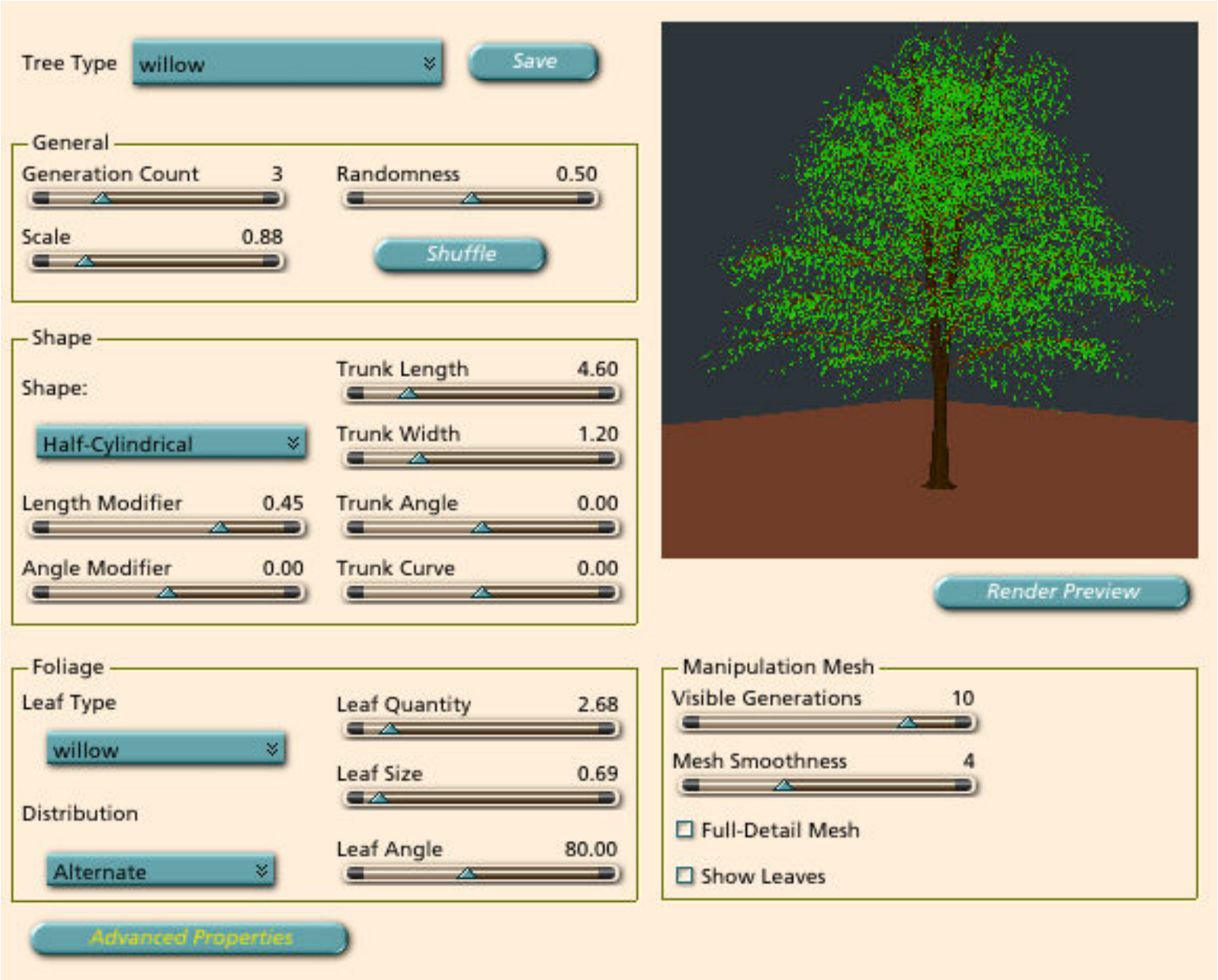
## Start with the Default Willow Tree

To begin, start up Carrara, then go into the Assembly Room and drag the Plant icon into the workspace to enter the Plant Modeler. The Plant icon is the ninth item in the top toolbar as shown below.

Once you are inside the Plant Modeler, click on Tree Type to open the drop-down menu and select Willow from the bottom of the list as shown below.



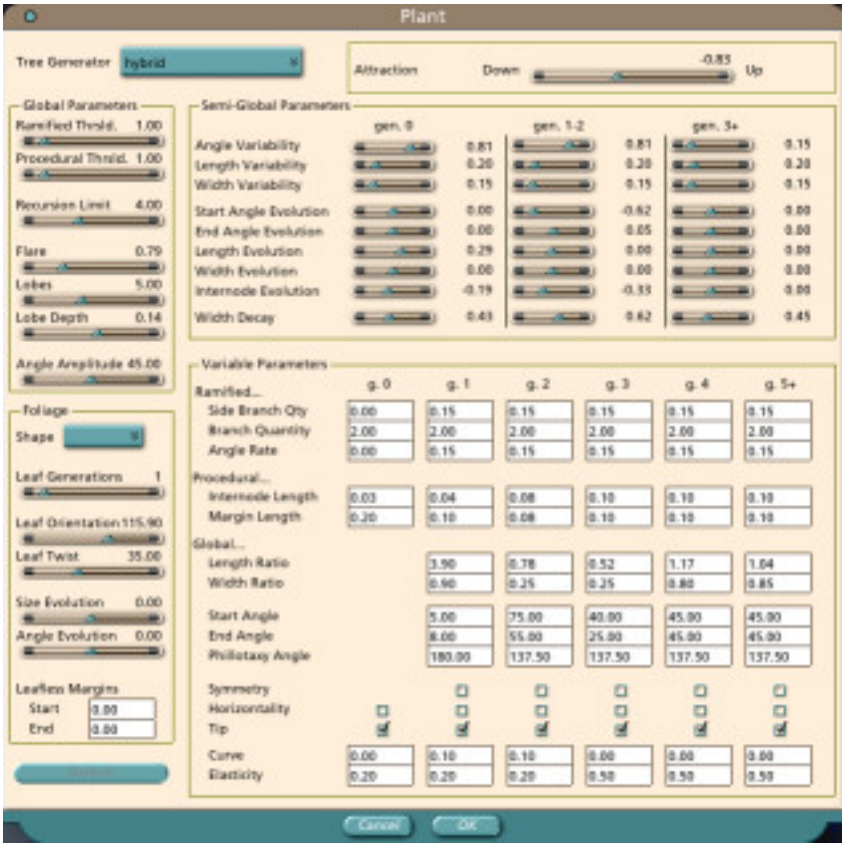

The default Willow tree should appear in the Plant Modeler's preview window as shown.



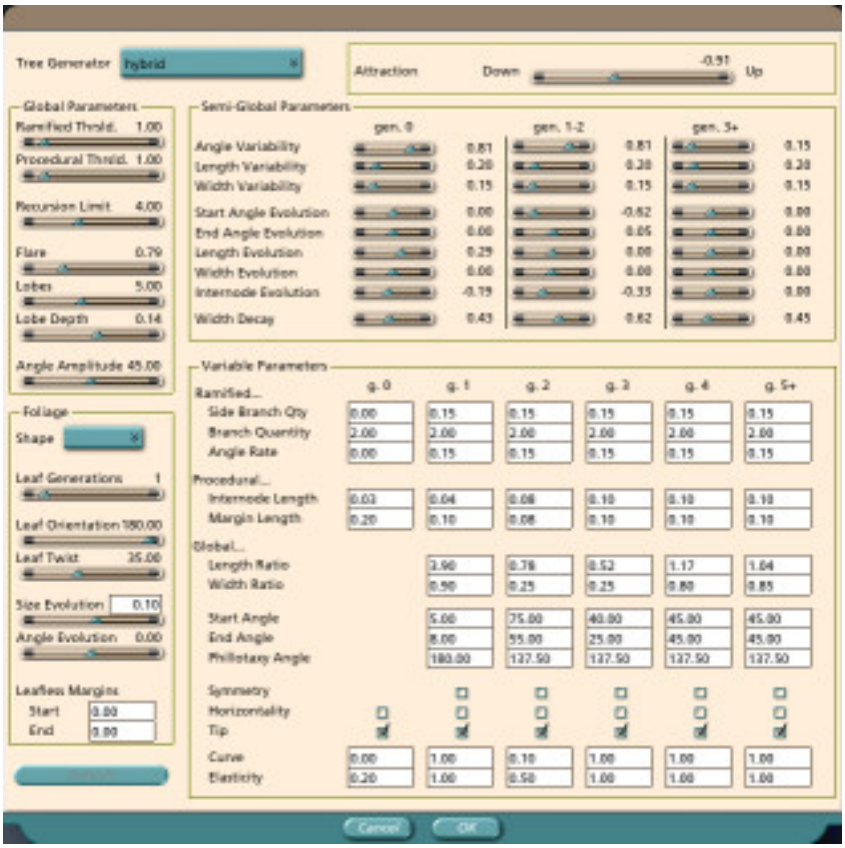

## Modify the Advanced Parameters

We're starting our modifications with the Advanced Parameters because that is where you will find the control for the most characteristic aspect of the Weeping Willow tree, its droop.

From the Plant Modeler's main window, click on the Advanced Parameters button and a window should open as shown below. Click the image to see the full sized version of this screen.



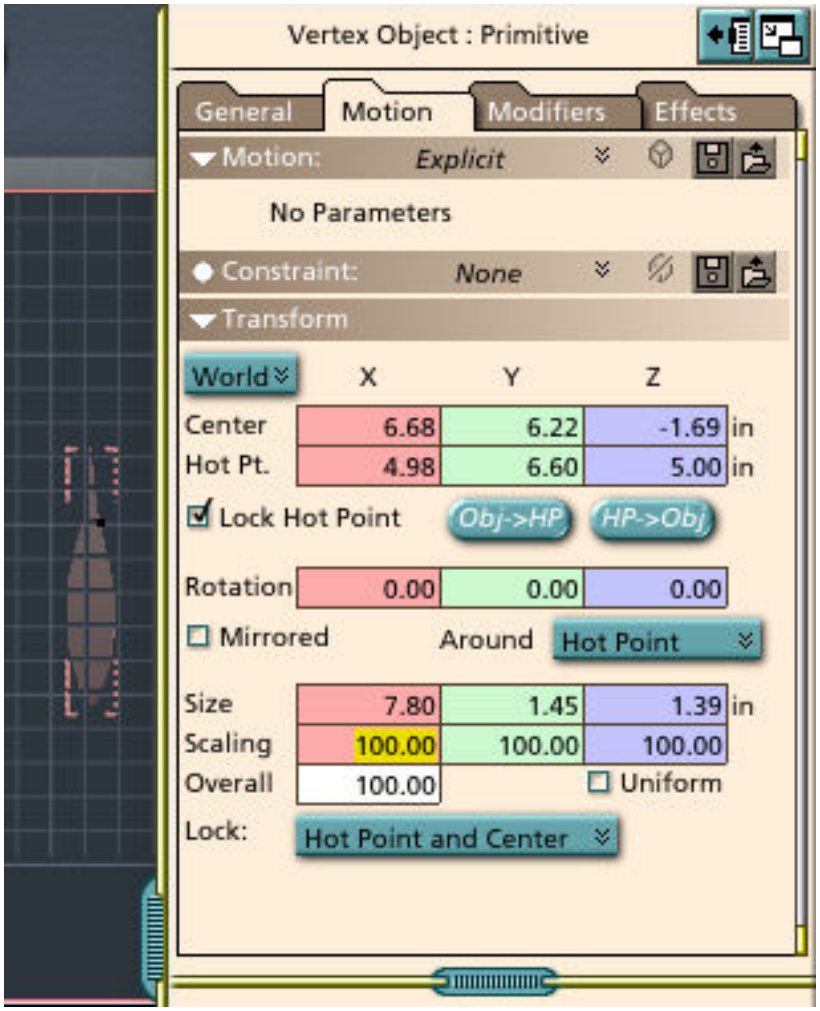

Next, change the settings in the Advanced Parameters window to match those shown below. In the Foliage section, set Leaf Orientation to 180 degrees to make the leaves hang straight down. In the Variable Parameters section, set the Curve and Elasticity values as shown to increase the amount of droop. Also set Attraction to -0.91. Click the image to see the full sized version of this screen.



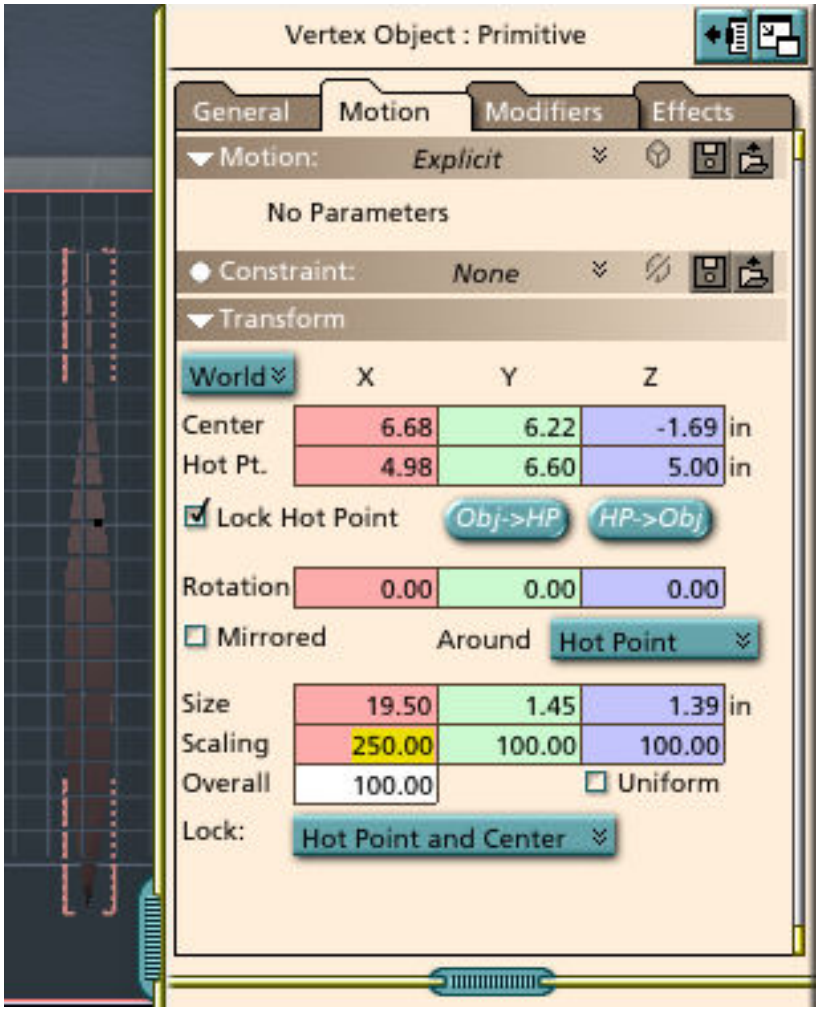

## Making a New Leaf

The leaves of the Weeping Willow are longer than those of the Willow tree. For our tree, we will modify the original Willow leaf and save the changed leaf model under a new name. The new leaf model will then replace the original leaves in the Weeping Willow tree.

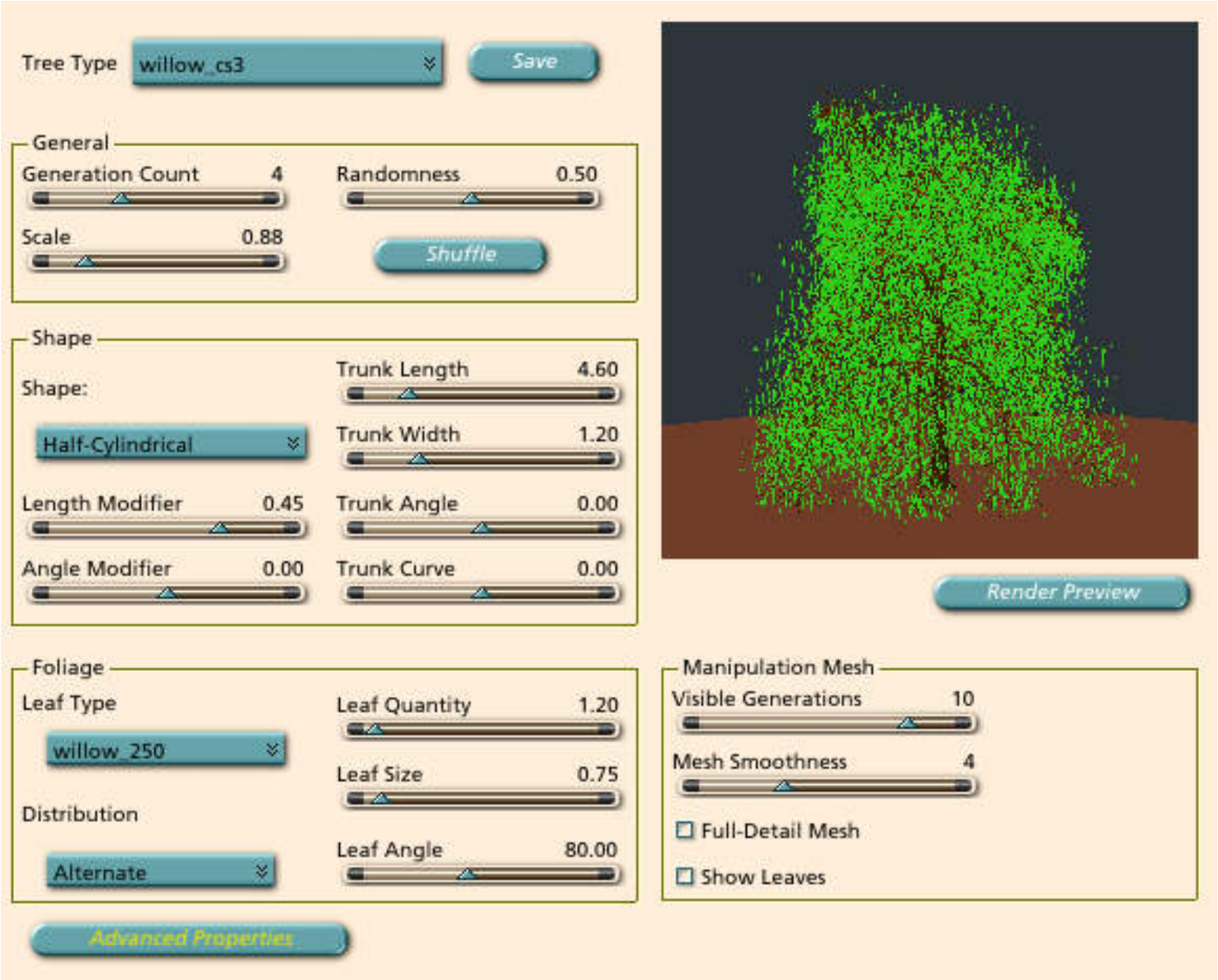
Return to the Assembly Room and press CTRL+O to open a new file. In the browser that opens up, go to the folder where you installed Carrara and go into the Plants folder inside the Data folder. Select the file "willow.car" and press Enter to open it. You should see something like the image below.




Change the scaling in the X direction from 100% to 250% as shown below to stretch the leaf, then save the file as "willow_250.car" in the same folder as the original leaf file.

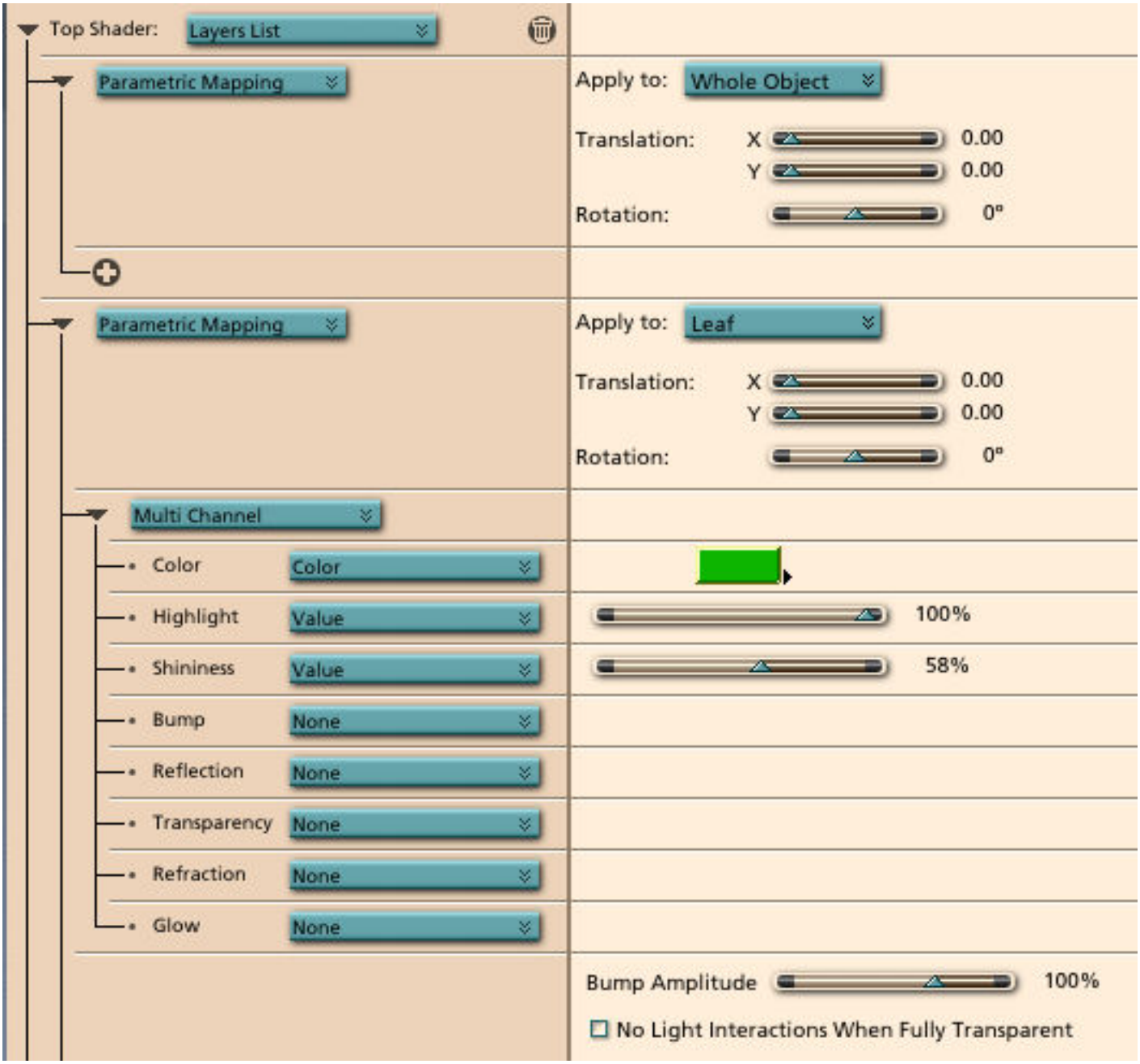



Next, return to the main Plant Modeler window to add the new leaf to the tree and make the final adjustments by entering the values shown in the screen below. In the Foliage section, change Leaf Type to willow_250, change Leaf Quantity to 1.20, and change Leaf Size to 0.75. In the General section, change Generation Count to 4. This was saved for last because adding generations to a tree can greatly increase the number of computations required. If your machine has a slow processor, you can still get very acceptable results just using 3 generations. When you are satisfied with the appearance of the tree, click the Save button next the Tree Type drop down menu, and save out your tree under a new name to add it to the default tree Library.




## Applying the Shaders

The default shader for the trees made in the Plant Modeler may be modified in the Texture Room. Each tree model has four different parts which may be textured independently. These are the Trunk, Branch1, Branch2, and the Leaf. The first section of the texture I used for the Weeping Willow tree is shown in the screenshot below. The boxes for Tile and Seamlessly were left unchecked in this particular shader, though for most cases you would want to use these features. Click on the image to see the complete shader in a separate window, and be sure to use the magnification button to get the full sized image. This image is large so you will need to use your scroll bar to see it in it's entirety.




The images of tree bark used for the color and bump maps of the Trunk and Branches were free downloads from The3dStudio. There are also Tree shaders for Carrara available commercially from Shaders3d. The Internet addresses are listed in the Related Links section of this tutorial.

## The Rest of the Picture

Three copies of the Weeping Willow tree model were used in The Red Canoe image. The Shuffle button in the Plant Modeler was pressed to change the random seeds used to generate each tree so they did not come out looking like virtual clones. The canoe was built in Carrara's Vertex and Spline modelers. The landscape was a terrain textured with an image map, and water and boulders were added in. The sky was made up of a Bi-Gradient backdrop with one large sparse volume cloud.

Well that's all there is to it, I hope you enjoy your Weeping Willow tree. Give it enough disk space to grow in and plenty of water, and it should last for years to come.

## Related Links

Eovia, home of Carrara

The3dStudio

Shaders3D for Carrara