The “late afternoon” image (Figure 25) was the first painting I created in Photoshop 7. My customized brush presets proved very useful, by saving time and by creating the realistic effects that I was looking for.
As I discussed previously, creating foliage is one process that utilizes the new brushes to make your life easier. In Figure 26, you see a close-up of the reflection of the window in the mirror. Note the darker green trees visible in the distance. These trees are created with a single stroke of a brush preset.

I decided to make the trees look like maple trees. With the Pen tool, I created the basic shape of a single maple leaf (Figure 27). It is important to set the Pen tool to Paths and not Shape Layer (see manual). In a separate layer, the path was filled with black. Other colors might not make the brush opaque enough.

**NOTE** Hues other than black might be useful in situations when it is necessary to make the stroke transparent.
The black leaf was then selected with the Rectangular Marquee tool. The Eye icon for the Background layer was turned off. This was necessary to make the area around the leaf transparent. If the Background layer were turned on, the brush would have white behind the brush shape. To create the brush, Define Brush was chosen from the Edit menu (Figure 28a). A dialog box appears that allows you to name the brush (Figure 28b).

The customized brush shape automatically appears in the Brushes palette at the bottom of the list. With the leaf brush selected, I went into the Brushes palette. This is where the magic begins (Figure 29)!
Selecting one of the tools in the Toolbox that utilizes brush shapes activates the functions in the Brushes window. Selecting your newly created brush shape will make it appear in the preview box. You will notice that the look of the brush, as it is passed along a stroke, appears in the preview. At first, the stroke is a series of leaves running along the stroke. I wanted to recreate the randomness of the leaf shapes found along the branches of a tree. In reality, the leaves on a tree are the same shape with slight variations in shapes and sizes. The extreme randomness is the result of the viewing angle. Two identical leaves appear different on a 2D plane as a result of the variation with which they fall in your viewpoint. To illustrate this point, Figure 30 shows the same leaf viewed from two different angles. Performing a non-uniform scale (Edit>Transform>Scale) on the leaf shown on the right—making it thinner—creates the illusion of foreshortening or angled view.

**NOTE** The example shown in Figure 30 is to demonstrate a point and is not part of the brush-making process.

The first thing I needed to do was to separate the leaves from each other in the preview area of the palette to make it easier to see the modifications I was going to make to the brush stroke. At the same time, this also created the fullness of the leaves on the tree. The Scattering section of the palette allows you to play with these controls. Scattering distributed leaves outside or away from the actual stroke (Figure 31). The higher the number, the further the distance they spread. Selecting Both Axes ensures an equal distribution on both sides of the stroke. I set the number to 450%. Keep in mind that these settings worked in this particular instance. One of the advantages of having the preview area is that you can see the results of the settings you choose.

The Count setting lets you increase the number of leaves generated as the stroke is applied. I set the Count to 4. The Count Jitter sets randomness to the count as it is being generated. The Count Jitter was set to 98%. These were the settings I saw fit for what I was creating at the time; they do not signify a formula of any kind. When you make modifications to customized brushes, settings are determined based on what you see in the preview window.
Keep in mind that Photoshop is not a 3D program; thus, any foreshortening caused by depth perception is actually being simulated on a 2D plane. Foreshortening was achieved by playing with the settings under the Shape Dynamics portion of the palette (Figure 32). I increased the Size Jitter so that the brush would change the size of the leaves with the greatest variety, as it was dragged across the canvas. I set the Minimum Diameter to 15%. Lower settings for the brush create leaves that are too small. A leaf as small as 1% of its final size does not appear as a leaf, but rather a clump about to open as a leaf.

I set the Angle Jitter to 100% so that the leaves appear at totally random angles as the stroke travels across the canvas. The Control for both of these settings was set to Pen Pressure. When doing this, the effects were subject to the pressure applied to the stylus on my Wacom tablet as the brush was passed across the canvas.

The Roundness Jitter was where I got the effect of foreshortening. This dramatically altered the shapes of the leaves, giving the illusion of viewing some of them from the side. I increased the Roundness Jitter to 90%, and then I set the Minimum Roundness to 15%. A lower setting has the effect of flattening the leaf shape so that it appears to be a flat line, which is distracting and unrealistic.

Next, I wanted the individual leaves to show color variations. The controls for color transformations for the brush are located in the Color Dynamics section of the palette (see Figure 33). I set the Foreground/Background Jitter to 100%, so that there would be a shift between the foreground and background colors. Setting the two colors to opposing shades of green would add the randomness of color seen on a tree. True, all the leaves on a tree are a similar green; however, when viewing them at different angles, they reflect light and shadow creating the illusion of different colors.

The Hue Jitter was set to a low 12%. This added a slight variation to the colors being used. Large numbers introduce unwanted colors such as reds and blues.

The Saturation Jitter was set to 25% to produce more variety in the colors on the leaves. The Brightness Jitter was set to 10% for similar effects on the color variance.
I chose a bright green for the Foreground color and a dark green for the Background color. The resulting stroke created a branch full of leaves like the one in Figure 34.

With all the parameters set, I saved it as a preset so that I could always call it up again. I saved it by choosing the Save Brush command in the Brushes window drop-down menu. This is also the place where you load other brushes you might have created.

Changing the Diameter in the Brush Tip portion of the palette changes the size of the brush. For instance, the same leaf brush set to 200% yields large leaves—as if you were up close to the tree. A small diameter of about 5% creates tiny leaves that appear far away.

Other forms of foliage are also a snap to reproduce with the custom brush presets. Grass is the perfect example. I used to create grass with polka-dotted brushes that faded out as I stroked across the canvas. This worked, but it created a translucency to the tips of the grass blades. It also required changing the fade-out rate often to get the grass texture to look varied. The new solution to this—you guessed it—Custom Brush Presets!

To reproduce grass, I created a custom brush shape by generating a clump of grass in a three-blade section using the Pen tool (Figure 35).

As in Figure 27, the paths were then filled with black on a separate transparent layer, selected, and then defined as a brush (Edit>Define Brush).
The brush was then given the attributes to make a realistic and believable lawn. The Shape Dynamics were set, as shown in Figure 36. Notice that the Angle Jitter is set at a low percentage. Unlike the previous brush, where the leaves are scattered in various directions, the blades of grass in this picture all need to point up. The low jitter setting produces a slight variation in angle, while remaining basically vertical.
I chose a bright green for the Foreground color and a dark green for the Background color. By dragging the new brush across the screen back and forth, and from top to bottom, I was able to create a lawn that looked believable (Figure 37).

Grass can take on other shapes, such as the long dune grass that grows by the sea. For this type of grass, I created a single long blade of grass (Figure 38). Applying certain attributes gave me a brush that replicated the real thing (Figure 39).

37 Dragging the grass brush across the canvas produces a realistic looking lawn.

38 A single blade of grass is created to form the basis of the grass found growing on sand dunes.

39 Dragging the brush lays down a veil of soft dune grasses.
With this newfound technique for creating grass, I went foliage crazy! I walked around my garden just looking for plants that I could create brush presets for. I created a bush by creating a single leaf cluster and setting the parameters to simulate the growing patterns in nature.

**NOTE**  
I am proud to say that Adobe has included my Maple leaf and Grass brushes as add-ons in the Photoshop 7 package. They can be found in the main Brushes palette. The Bush brush can be found in the Special Effects brushes. These are available through the Brushes window drop-down menu.

To create ivy, I needed to use another of the new functions available to custom brushes—Texture. I defined a pattern to replicate the characteristic bumpy texture of ivy leaves (Figure 41).