polygons "Treeline" and save the object as (surprise!) "Treeline_Unmorphed". Now, grab both points at each slice and move them a little in the Z axis. It doesn't need to be much, just enough to rough up the line as seen in the Top View (Figure 10). Don't move the points on X or Y because that would distort the image map painted on the morph source. Save this object as "Treeline_Morphed1". Move the points around again to create a different rough wall, save it as "Treeline_ Morphed2". Make a variety of these, if you wish.

Now, load Treeline_Unmorphed into a fresh Layout and apply the image maps you created last, both color and transparency just like the single tree, double-sided and luminous. We only need to deal with one axis this time around, Z. This means that we won't have physical depth in the trees, but we'll overcome that by using multiple layers.

Save Treeline_Unmorphed and load Treeline_Morphed1 and Treeline_ Morphed2. Switch to Treeline_ Unmorphed, and Replace Object with Treeline_Unmorphed. Yes, the same object. Now save all objects. Loading the untextured version of the morph targets wiped out the settings we had defined for the line of trees. Since that surface was saved on the Unmorphed version, replacing it brought back the surface values. Saving all objects saved that surface onto all three objects.

Now, set up the morphs (I'm not going to tell you how this time, you should know!) and start Cloning and Moving vast walls of trees around your landscape. Rotate the panels 180 on heading every now and then to get two apparent rows of trees from one map. It may take a few of them, but remember that if you want more, just make *even bigger* treelines. You can't do a helicopter shot over these trees, unfortunately, because it will give away the cardboard cutout style of the trees. But if you need to go whooshing by a heavily wooded area, this can give some really nice parallax scrolling effects. Just remember to always have the polys facing more or less straight at camera and you'll get some great stuff!

This article is running very long, but I wanted to point out one other interesting thing about the final example image, Figure 11. That entire shot is the result of a single tree, rendered from a single angle. Obviously a wider variety of tree maps and group shots would work even better, but in this image I also applied a couple of very soft fractal color layers with world coordinates on the treeline surface. This provides a nice bit of variety in the tree coloring with virtually zero effort.

Anyway, enough! Enjoy your experiments with this technique and don't forget, every concept is a steppingstone to the next brilliant concept.

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Tips & Tricks for WCS5

By R Scott Cherba • Images by the Author

Moving the camera

The way most of us learned to move a camera interactively was by using the Manipulate Camera button. How many times did you forget to deselect it, ending up somewhere you didn't want to go? Ever want to make a quick move like you do in Adobe applications with the space bar? Well, use the space bar! It will put you into the Manipulate Camera mode as long as it is depressed. Whether it's in Move, Rotate, Zoom, or no mode will depend on what you used last. Use the **1**, **2**, and **3** keys to select the Move, Rotate, and Zoom modes, respectively. Having a third hand would also be useful.

While we're doing our 1-2-3s, the same **1**, **2**, and **3** keys come in handy for selecting the Move, Rotate, and Scale modes when manipulating an Active Item when Manipulate Camera is disabled.

Copying textures

Let's say you have a piece of 3D Object ground that you have added to the terrain. You'd like this 3D object's Material to have the same texture as the Ground Effect. The Scene-at-a-Glance (S@G) feature makes it easy to copy textures between Materials. Open the Component with the texture you want to copy in the lower S@G window and expand it until you see the texture you want to copy. Open the Material you want to copy to in the upper S@G window. Click and drag the texture from the lower window's Material and drop it on the upper window's Material.

Here's how it works with the 3D Object example we started with. Since we want to use the Ground Effect texture, expand it in the lower S@G window. Expand the Ground Overlay and, under that, expand the Material. There you'll see the Diffuse Color (Texture) we want. In the 3D Object Task Mode, expand 3D Materials so you can see the Material you want to copy to. Click and drag the Diffuse Color from the Ground Effect in the lower S@G and drop it on the 3D Material in the upper S@G. A box will appear asking you to select the desired copy target. Choose Diffuse Color. Your 3D Object Material now matches the Ground Effect.

Well, not quite. If you open the 3D Material Diffuse Color Texture Editor, you'll notice that the texture has rotated. That's
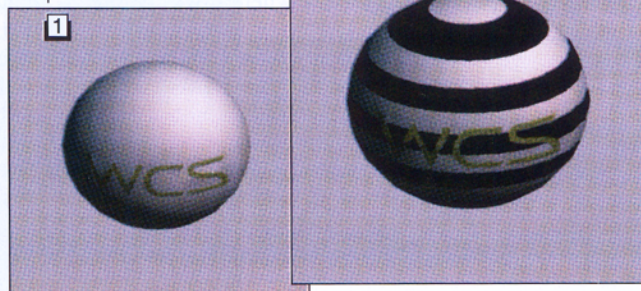
because the original Ground Effect texture was made using terrain XYZ directions, where Z is elevation. In the 3D Object world, Y is elevation. Just remember to switch your Y and Z texture Size values and everything will match. You'll also have to change the Texture Axis if applicable.

Importing textures

You can't save textures as Components. Or can you? Just save the Component with the texture you want to save, bring it into a new project, and copy the texture as just described previously.

3D Material texture scaling

While we're on the subject of 3D Material textures, let's talk about sizing them. 3D Material texture size is relative to the size of the original 3D object imported into WCS. As long as you use 3D objects at the same size they were modeled, you won't have a problem.

But, what if you're in a hurry and don't want to resize the object in the original modeling program? For example, you've chosen to use the 5cm diameter Golf_ball.lwo included with WCS to make a 5m striped ball. You need to increase the size by a factor of 100, so you apply 3D Object Scale X, Y, and Z values of 10,000% (100% x 100). In the Texture Editor you choose Stripes and a Y texture size of 1m. A quick render gives you Figure 1. So where are your stripes?

WCS 3D Materials use the original 3D Object size to apply textures. In our example, the Texture Editor is applying the 1m Y stripes to a 5cm ball. At that texture size, the ball will render with only one of the stripe colors. To get the desired stripe pattern, you have to use XYZ texture size values that make sense for a 5cm, not 5m sphere. A Y texture size of 0.01m will give you the correctly sized striping on the 0.05m ball (Figure 2).

There are two morals to this story. First, model your 3D Objects to their proper size. Second, when you scale an object in WCS use the object size as listed in the 3D Object Editor/Size & Position/ Dimensions box to guide you in sizing your textures.

R Scott Cherba is an independent photographer and animator in Tucson, Arizona. A geologist and naturalist, he documents and creates scenes of the American Southwest and Mexico. In previous issues he has written about creating seashores and golf greens in WCS. His Getting to Know WCS 5, Vol. 1 is now available on CD and video. It takes you through a 90-min. re-creation of a Grand Canyon scene with real world terrain data, reference images, and WCS Components. Visit www.wcs5 .com *for more information.*