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# Thoughts from the Developers

This page exists as a place to put general, informal tips about using SpeedTree with UE4. These tips are gathered from our own experience and from common issues we've run across in the community.

## Lightmap Density

The lightmap UVs on our samples and store models are tuned so that shadows that fall on the trunk and low branches/roots have no visible artifacts. In order to do this at low lightmap resolutions, lightmap density in the leaves had to suffer (this is why our trunks are green and leaves are blue on most models). If this doesn't work in your setting, up the lightmap scale on the leaves until it matches what you're looking for.

## Leaf Map Maker Files

If you've purchased one of our [store models](#) you may have noticed the leaf/needle map maker files. These are tree models designed to help make the leaf/needle maps for all of the versions of that model. These files let you quickly try different leaf densities, sizes, and color variations without going into Photoshop. The basic idea is to do the following:

1. Model the branches and leaves/needles of a small portion of the tree

2. Use the '[Screenshot Safe Frame](#)' window properties to make sure the images won't be cropped
3. Use the '[Screenshot Assist](#)' window properties to vary the hue, saturation, value, and normals of the leaves
4. Use '[File->Export material...](#)' to quickly create diffuse, normal, and specular maps

Many of our models have these time saving files and them and they can easily be repurposed for other tree models.

## Make Better Atlases

When you save a model SpeedTree will automatically create the texture and billboard atlases used by Unreal. These atlases use the texture maps at exactly the same resolution that they are in the Modeler. This is often too high and usually results in wasted space in the atlas. You can run the SpeedTree Compiler directly (like you could in UDK) and often create better packing and resolutions than the automatically generated atlases. The automatic ones are good for ease of use and prototyping, but when it comes down to production you might consider compiling several trees into one atlas for better performance and memory usage.

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