



# Genesis*vfx* User's Manual

This document is designed to help you use the Genesis *vfx* version 1.01 demo found on the Positron web site. You will find complete explanations of every function that Genesis offers as well as numerous tutorials to get you started.

Please read the installation instructions on page 4 of this document. Take special note of the fact that this manual provides instruction for using the Windows 95/NT version of Genesis for NewTek's LightWave 3D.

We encourage you to visit our web site ([www.3dgraphics.com](http://www.3dgraphics.com)) often for the latest Genesis information, and if you like the effects you can create with Genesis, you can order the program directly from our web site via a secure financial transaction.

You can also contact us via the following:

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<b>Main Phone</b>	<b>402-330-7011</b>
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<b>World Wide Web</b>	<b>www.3dgraphics.com</b>

# Chapter 1

## Introduction to Genesis

Thank you for your interest in Genesis *vfx*, a revolutionary new special effects plug-in for print graphic artists, advertising agency art directors, web page designers and anyone else who is interested in spicing up their designs with visual effects. With Genesis you will be able to harness the basic properties of light to add spectacular special effects to your images.

By following the simple steps in this manual, you will soon be able to use Genesis to create lens flares, sparkles, glows, heat distortions, 3D particle clouds, gas clouds, explosions and even flowers with complete control over every aspect of the effect.

## System Requirements

Genesis 1.01 for LightWave requires NewTek's LightWave version 5.0 or higher. Genesis has been developed under Microsoft Windows NT 4.0, and it is recommended that you use this operating system. It is not recommended that Genesis be used with Microsoft Windows NT 3.51 because certain features, such as the effect preview, are not available. Genesis is also compatible with Microsoft Windows 95.

It is recommended that your system have 64 MB of RAM to run Genesis. It will work with less memory. However, having less RAM will slow down your work due to extensive memory swapping. If you are working with very large images, you have to make sure to extend your swap file size to at least 250MB.

The minimum required screen resolution is 1024x768, and the video mode of the computer must be at least 15bpp (high-color). You will not be able to run Genesis under 256 color mode. These

video specifications can be achieved by using any video card with 2MB of memory.

## Installation

To install the LightWave version of Genesis follow these instructions:

- 1) Fill out the Genesis demo information form on the Positron web site.
- 2) Select the Genesis for LightWave Intel file. It will download to your hard drive.
- 3) Unzip the GdemoLWIntel(BIG).zip file into a directory on your hard drive.
- 4) Double click on the GLWDEMO.exe file. This launches the installation program.
- 5) Follow the on-screen instructions to select your LightWave\Plugins\Layout directory.
- 6) During installation, a new directory will be created called GFX. This directory will be located in your LightWave\Plugins\Layout directory and contains sample pre-built Genesis effects.

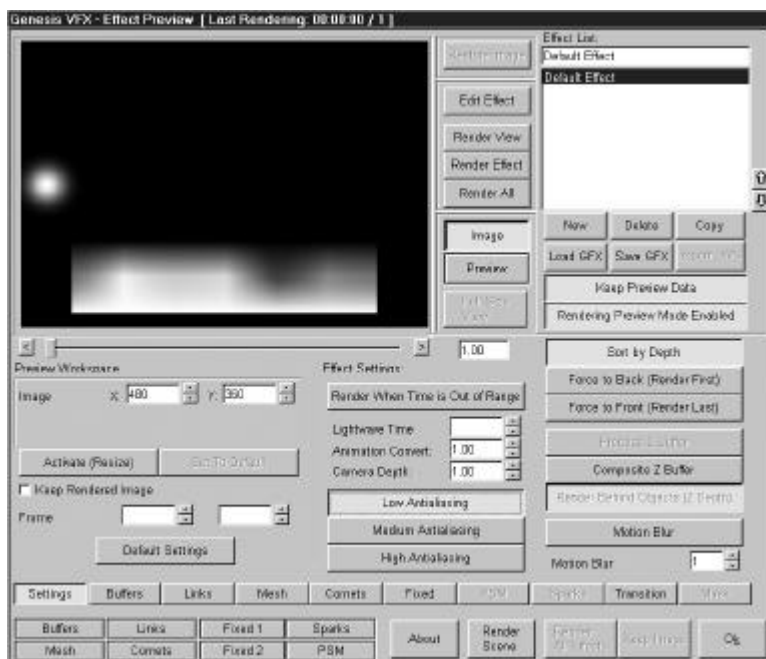
## Terms

To understand Genesis you must be able to distinguish between an effect and an element. An *effect* is an actual Genesis effect that can be linked to LightWave objects, points and particles. An effect also can be distributed along a region of an image to produce a glow.

An *element* is a single effect layer that can be composited with other effect layers to create a desired Genesis effect. Elements are displayed as on-screen shapes with the rendering attributes you have chosen. Additionally, you can apply noise to distort the shape and edit the shape in angular or radial modes. Effects also can be scaled, rotated and clipped or occluded by objects.

# Chapter 2

## Preview Interface



### Preview Interface

The Preview Interface of Genesis *vfx* a set of tools that allows you to setup and preview your effect rendering. It provides a list for usage of multiple effects, real-time viewing of effects by their shape and effect configuration parameters and the ability to work with almost all parameters visually. The Preview Interface allows you to work with both images rendered in LightWave and external images. You also can save images and use the clipboard.

The Genesis for LightWave Preview Interface is a superset of tools that are provided in addition to the Genesis Settings Interface introduced with Genesis 1.0 for Kinetix 3D Studio Max and Adobe Photoshop. It has been designed to be tightly integrated with LightWave and to be fast and efficient for LightWave users when creating special effects.

The Preview Interface can maintain rendering information provided by LightWave in a post-processing filter and allow its usage at any point later when working in LightWave. When started, the Preview Interface is set to a default mode that allows it to work with the scene and external images.

## **Activation**

The Preview Interface can be activated from LightWave in three ways. The first method is the common way to activate LightWave plugins: Using the Options button beside the activated plugin in the Effects/Image Processing panel. The second method is to use Genesis Button at the top right of the screen. Finally, you can use the keyboard keys CTRL+SHIFT+1. Because LightWave sets a limit on the number of filters configurable for simultaneous work, Genesis provides the ability of having multiple effects in one plugin. However, you can still use multiple plugin instances in LightWave. In this case, you also can use CTRL+SHIFT+2...4 to activate other instances. Instances are numbered in the order they have been added. When the scene is loaded, they will be numbered sequentially.

## Interface Areas

**Genesis VFX - Effect Preview [ Last Rendering: 00:00:00 / 1 ]**

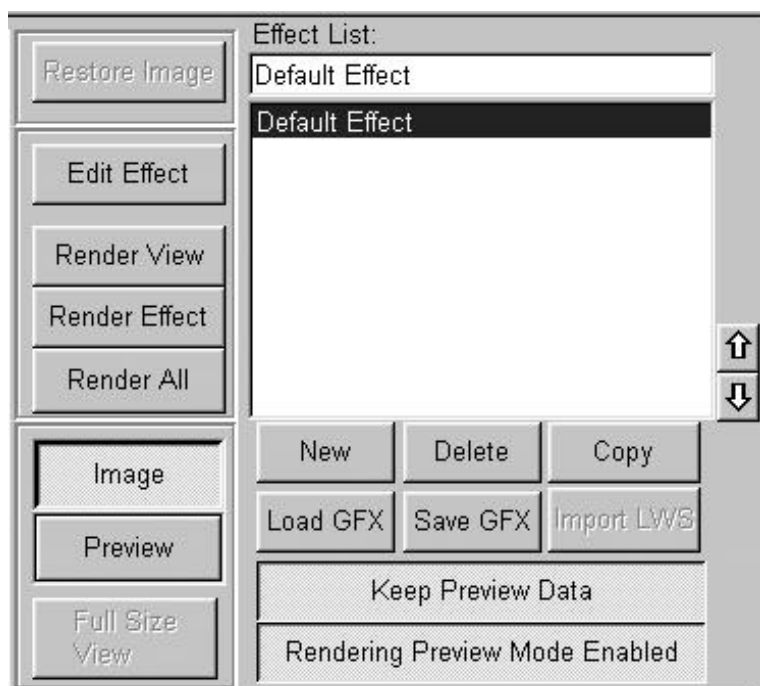
### Dialog Title Bar

The dialog title bar of the Preview Interface displays how long it took for the last rendering and the number of effects that have been rendered.



### Image Preview

Image preview displays the source image on top of which effects are being rendered. The image is kept by Genesis in its original rendered size, so all effect rendering is happening on the full-sized image. Clicking on the image preview in most cases will hide or reveal the effect shape preview. In fixed rendering mode, clicking on the image will place the effect at the location of the mouse. Right clicking on the image preview activates the Genesis menu.



## Effect List

At the right top of the window is a list of effects. You can add, remove or copy effects in the list. You also can load and save effects using .GFX effect files and import all effects into this list from another scene.

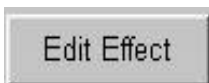
To edit the effect, double click on it or select it and click the Edit Effect button located at the left of the list. On the right side of the image preview display is a set of buttons, described below.





## **Restore Image**

Restores the source to the original image before the effect rendering.



## **Edit Effects**

This button launches the effect editor for the selected effect in the list. You also can launch the editor by double clicking on the effect in the list.



## **Render View**

Renders the current effect in the selected preview mode without taking into account the actual active rendering modes. When the Display All Elements button is enabled, which is located in the top right of the effect configuration area at the bottom of the effect list, all effects in the list will be rendered in the current preview mode.



## **Render Effects**

Renders the current effect in its active rendering modes.



## **Render All**

Renders all the effects and accounts for their active rendering modes.



## **Image/Preview**

These buttons activate and deactivate the preview mode.



## **Full Size Preview**

This allows previewing the source image at full size.



## **Keep Preview Data**

If activated, Genesis will keep the image/buffer data gathered from LightWave after rendering the scene so that you can work on the image later.

Rendering Preview Mode Enabled

## Rendering Preview Mode Enabled

This option instructs Genesis to activate itself automatically when the Image Filter is being executed during the LightWave rendering process. This allows the effect to be adjusted during the rendering process.

**Note Well:** If you are rendering an animation, this option should be disabled, otherwise Genesis will activate itself after every rendered frame.

**Tip:** When LightWave is rendering an animation, you can use the Genesis button on the top left of the LightWave window to activate the Preview Interface and adjust any parameter, thereby allowing you to modify your effect while rendering.

## Menus

Right clicking on the Preview Window title bar or on the image display area activates a menu that provides access to a variety of options, including the saving and loading functions. (See the Preview Menu Parameters section for more information.)

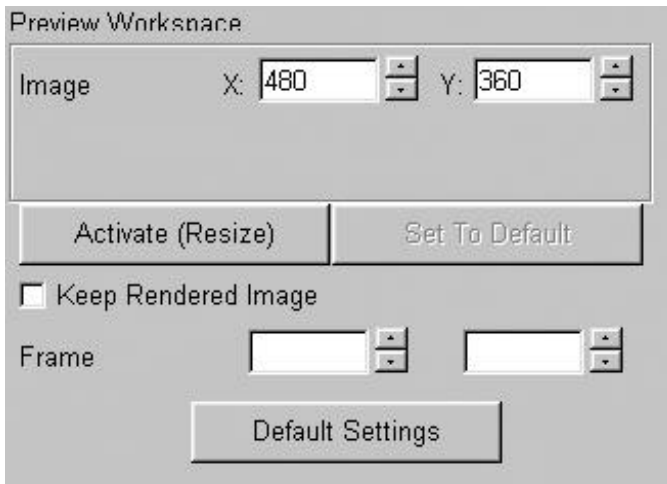
You can also access a Buffer Menu by right clicking on the buffer list in the buffer configuration module.



## Time Slider

In most rendering configuration modes, you will find the time slider at the bottom of the image. This allows you to preview an effect at various times during the animation. The edit control on the right of the slider allows you to edit the frame you want to set manually. You also can use the up/down arrows and page

up/page down keys to jump in time when you are using the edit control.



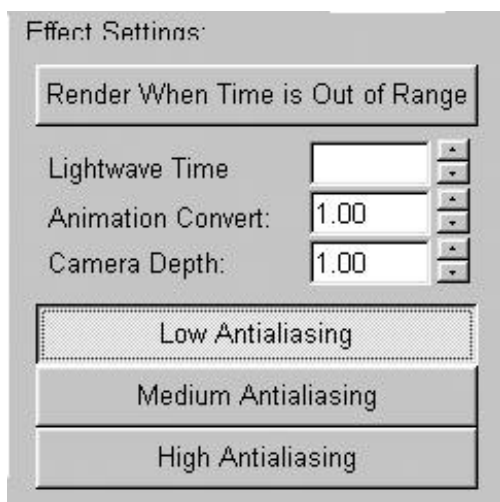
The image shows a software dialog box titled "Preview Workspace". It contains several controls: a label "Image" followed by "X:" and a text input field containing "480", and "Y:" and a text input field containing "360". Each input field has small up/down arrow buttons to its right. Below these are two buttons: "Activate (Resize)" and "Set To Default". Underneath the buttons is a checkbox labeled "Keep Rendered Image", which is currently unchecked. Below the checkbox are two empty text input fields, each with up/down arrow buttons to its right, preceded by the label "Frame". At the bottom of the dialog is a button labeled "Default Settings".

## Preview Workspace Settings

The Preview Workspace Settings function allows you to resize the image in the preview buffer. It also allows you to keep the image while resizing the workspace.

**Note Well:** Any available LightWave buffer will be cleared and become unavailable until the next LightWave rendering.

The System Settings button activates a preview dialog where you can set default settings for the preview.



## Effect Settings

The Effect Settings panels allows you to control the overall effect rendering time relationship between Genesis and LightWave and the level of quality of the rendering.

### Render When Time is Out of Range

This enables the rendering of the effect when Genesis time is shifted forward resulting in LightWave rendering before Genesis frame 0. If enabled, frames before 0 will be rendered at Genesis time set to 0.

### LightWave Time Shift

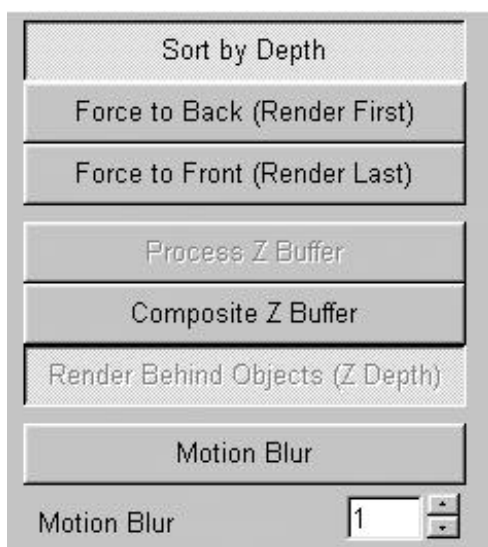
Use this variable to shift Genesis time when rendering.

### Animation Convert

This functions allows you to scale the Genesis time line. For example, if the animation in Genesis has been created using 30 frames per second, fps, and you now need to switch it to 24 fps, you should set this value to 0.8 (80 percent of 30 fps = 24 fps).

## Low, Medium and High Anti-aliasing

This sets the anti-aliasing mode used in Genesis when rendering the effect. Usually low anti-aliasing is satisfactory while working with Genesis and even for production. Enabling Medium or High Anti-aliasing will improve rendering quality but slow down the process.



## Layer Placement

The Layer Placement control panel allows you to control the overall sequencing of effects rendering.

### Sort By Depth

All effects, except for buffer and fixed mode effects, are sorted by depth before they are rendered. However, you can separate effects into three groups and specify whether you would like a particular effect to be rendered first (back), last (front) or in the middle.

Effects with active Buffer and Fixed rendering mode will render before other rendering modes. Therefore, they will be in the back, unless they are forced to the front.

## **Force to Back**

Forces the effect to be rendered first so that it is placed behind all other effects.

## **Force to Front**

Forces the effect to be rendered last, so it is placed over all other effects.

You also can switch the sequence of the Buffer and Fixed effect rendering within these three layers by changing the order of the effects. You can change the effect order by using two buttons (up and down) in the Effect List.

## **Process Z Buffer**

This function enables Z-Buffer processing, which allows effects to be occluded by objects in the scene.

**Tip:** LightWave has the ability to dedicate a certain amount of memory specifically for rendering. The initial amount of memory setup for rendering is 2.2 MB, which is enough to render a 640x480 image in four steps.

However, if you enable Z-Buffer processing, LightWave will require a continuous segment of memory to process the image. Therefore, if you are rendering 640x480 with the Z-Buffer, you will be able to see how much memory is dedicated for rendering to 8.8 MB (about 8,800,000 bytes). This can be done in the LightWave Camera Panel.

## Composite Z Buffer

This function instructs Genesis to render an effect and then composite its Z-Buffer information into the image so that other rendered effects can be occluded by this effect.

## Render Behind Objects

If the center of the point mode effect is found behind an object, Genesis will not render it unless this option is activated. You can use this option to simulate glows behind objects.

## Motion Blur

This option instructs Genesis to apply motion blur to a selected effect. You can specify the number of samples you would like rendered for the motion blur effect.

**Note Well:** Applying motion blur to the Buffers rendering mode can produce incorrect results if the source region (or object) is moving. This is so because it is not possible to predict a buffer region for the next frame.

## Field Rendering

Field Rendering is not provided as an option and is activated automatically if LightWave field rendering is activated.

**Note Well:** Like Motion Blur, if Field Rendering is used with the Buffer rendering mode, incorrect results may occur because it is impossible to predict the future placement of the source buffer region. The object must be static or move very slowly. You also can try using Mesh rendering mode on the object to replace the glow with a mesh rendering. However, this method will require significant adjustments to your mesh.





## Mode Activation Bar

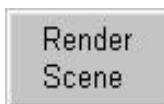
At the bottom left of the Preview Dialog, is a double row of check-buttons. Genesis provides a number of ways effects can be linked to the scene called effect rendering modes. Checking a button activates the desired effect rendering mode.

**Warning:** You must check the desired effect rendering mode button when creating an effect because if the required mode is disabled, Genesis will not render the effect.



## About

Displays Genesis *vfx* development credits, version and contact information.



## Render Scene

This option is available only when you are working outside of LightWave rendering. It will quit the preview dialog and activate LightWave scene rendering (the same as the F9 key in the LightWave window).



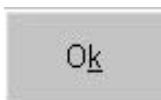
## **Render All Effects**

Only available when Genesis has been activated during LightWave rendering, this function instructs Genesis to reset the image to that which originally was acquired from the LightWave renderer, render all effects and return to LightWave to continue rendering.



## **Keep Image**

This command is available only when Genesis has been activated during LightWave rendering. It instructs Genesis to keep the image generated in the preview module, not to render any effects and to return to LightWave for continuation of rendering.



## **Ok/Cancel**

When working outside of the LightWave rendering mode, this button appears as "Ok" and will close the preview dialog keeping all the data.

When activated during LightWave rendering mode, this button will appear as "Cancel" and will leave LightWave images untouched.



## Effect Configuration Module

The Effect Configuration module is the heart of the Genesis preview interface. Here effect settings are available for all rendering modes. At the bottom of the preview configuration section of the dialog box is a row of buttons used to switch among different mode settings. By selecting to configure a particular rendering mode, the preview of this mode is activated.

**Note well:** If you are configuring a particular rendering mode and it has not been enabled for rendering, both the configuration activation button and rendering mode button for this mode will be outlined in red. Activating the rendering mode will disable this red outline.

## Preview Menu Parameters

### Rendering Modes

Genesis provides a number of ways to integrate effects into a scene.



### Buffers

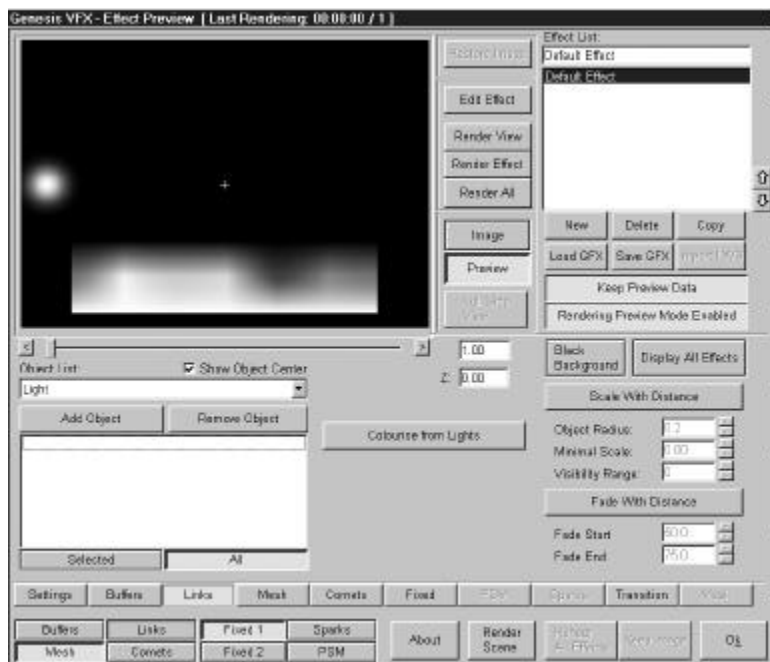
The Buffer rendering mode allows you to create glows around an object or selected area on the screen. The glow is placed around the constructed region, which can be derived from a particular surface or particular color on that surface, as well as from many other properties (LightWave Rendering Buffers). Each surface or image property is represented by a region on the final image. These regions can be merged using Boolean combination to provide Genesis with a particular region.

If a glow has been used with an effect that has secondary reflections, the glow will emit proper secondary reflections in the camera just as if it were a normal lens flare.



## Links

The links rendering mode allows you to link a Genesis effect to the center of an object. The Genesis effect can be a single effect or a lens flare. If the effect is used for a lens flare, distance scaling should not be enabled.



An effect can be used as an object by itself; thus, its distance scaling should be turned on and the effect's world size should be set to the desired size in world units. This also should be set when the effect is used for a distortion of a mesh, except the effect

world size (radius) should be set to match your object. Various other effects can be achieved by using multiple null or mesh objects.

When animating this mode, the Genesis timeline is based on the LightWave timeline.

## Mode Parameters



### Comets

Comets rendering mode allows you to link an effect to an object; however, it also allows sampling the effect in time. You can define the amount of LightWave time the effect will be sampled, how many samples you would like to have and the overall intensity of the effect.

This rendering mode is useful when creating comet-like effects. You also can achieve effects of glowing 3-D splines (paths of objects). Such effects can be used in animations for glowing wire effects and in stills to adjust parts of the image.

When working with comets, the Genesis timeline is defined by the comet age (tail). In this way, you can define the comet's shape. Using the Object element rendering mode when constructing comet effects can be problematic because all effects are rendered by depth. Thus, when the effect makes a curve in front of the camera, its middle elements will be rendered last (close to the camera).

You also can use a set of two effects where one is a comet effect and the second is the flare with secondary reflections. Linked to one object, this can produce an effect where the comet head has secondary reflections.

When using comets, the most useful element rendering mode is Light.

Adjusting parts of the image provides a wide choice of options because Genesis effects can contain Color Additive, Subtractive, Negative, Blurring, Image Transition and Displacement elements.

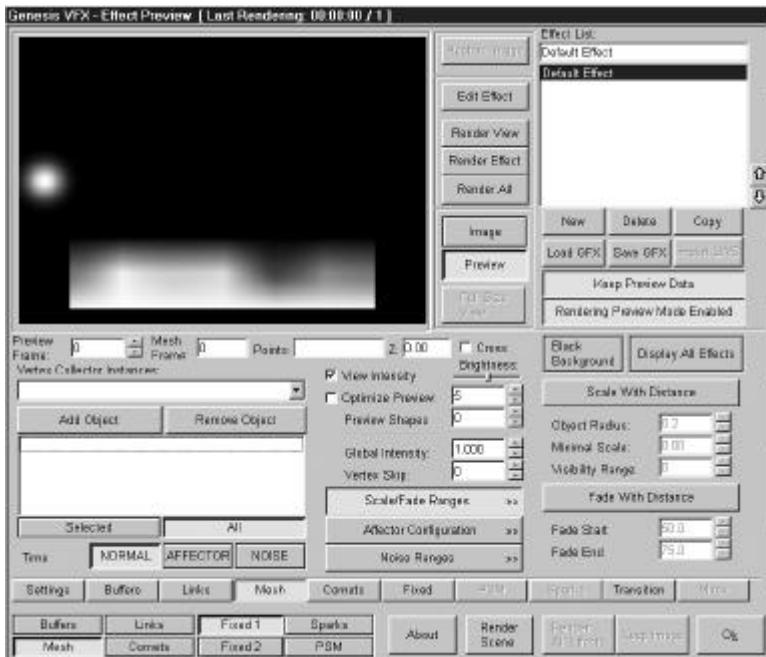


## **Fixed**

The fixed rendering mode allows manual placement of two effects on the screen by specifying parameters in the effect preview. You also can place the effect by pointing to the desired position with a mouse in the preview window.

Fixed effects are not sorted by depth. You can specify the size and rotation angle with which you would like the effect to render.

The fixed rendering mode will render before other rendering modes. Therefore fixed effects will be behind all other effects unless they are forced in front (see the discussion in Settings.)



## Point Rendering, Particle Shading Modes

Any point rendering mode can be used for a variety of purposes, from simple particle shading to produce smoke-like effects and partial image adjustments to amazing transitions where you can see the source image transferred onto the rendering image in place of each particle point.



## Mesh Rendering

The Mesh rendering mode allows a Genesis effect to be locked onto every Nth point of an object. This can be used to distort an object with displacements. If the object material is transparent or there are no polygons but only points, this rendering mode also can be used to create nebula and other gas-like effects distributed in world space.

Unlike direct particle support, mesh rendering mode does not support point aging. Therefore, by default the Genesis timeline is based on the LightWave timeline. However, the mesh rendering mode provides two additional time modes.



## Affector

The *affector* time mode allows any object to affect points of the effect with distance. In this case, the Genesis timeline of each point in the effect is based on the distance from each affector. Lights also can be used as effectors, in which case you can force light to colorise effects around it. Light colorization is helpful when you want to create an animation of the effects color.

**Tip:** To achieve dimming effects in various parts of your mesh object, you should use the null object effectors and set the intensity of all elements in the effect to a value of 0.0 at frame 0 and a value of 1.0 at the desired frame (because frame = distance). Then effects will be dimmed as they get closer to these null objects.

This method also can be useful when the object is passing an area of the mesh and you want points to be dimmed as the object



passes them. If elements in the effect are displacements, displacements in the area of the object will be dimmed.



## Noise

The *noise* time mode allows each effect to be represented by its own, random value on the Genesis timeline. The frequency of the effect noise can be defined to allow smoother or fast random changes of the effect. Noise parameters allow you to randomly animate not only the timeline of the effect but also its size and rotation angle. This time mode is helpful to remove the sampling effect where each shaded point looks the same.

To use the mesh rendering mode, place an Object Displacement plugin called Genesis VFX Vertex Collector on the object. The object becomes available to the Genesis VFX Image Filter. Other object displacement plugins can be placed in front of the Vertex Collector to provide the Vertex Collector with data that already has been displaced by other plugins. This also allows you to use Genesis with any particle system. However, particle systems provide vital age information which will not be taken into account in the mesh rendering mode.



## Particle Storm and Sparks

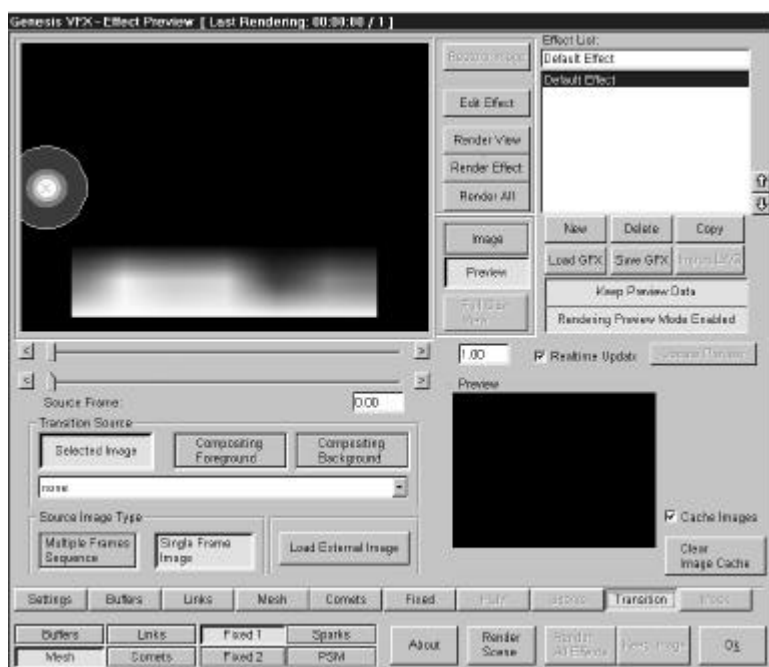
Genesis supports both Dynamic Realities Particle Storm and MetroGrafx Sparks particle animation systems. Genesis has the ability to lock an effect onto every point in a particle system and to use the Genesis timeline as particles age. This allows effects to be animated over the life of the particle. Using multiple particle systems you can achieve fascinating effects.

**Tip:** Using displacement effects with particles can produce various heat distortions.

## Transition

### Transition

Effects in the rendering modes described above can be used with transition images. Effects that contain a transition element will transfer the defined source image during the rendering and do so only in its place and with its intensity.



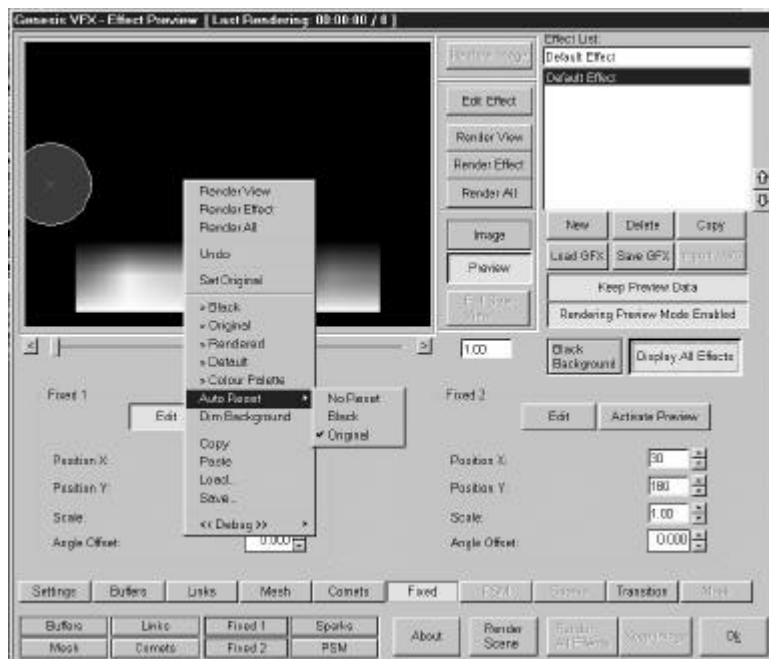
### Transition Modes

Transition modes allow the transfer of the image in three ways. Regular transitions will transfer the image by the intensity of the effect; an RGB transition will transfer from the image colors that

are present in the transition element color; and a Transition + Resize transition will rescale the source image to the size of the transition element and only then transfer the image.

## Masking

Masking allows Genesis to mask parts of the rendered image with the original or an external image/animation. You can mask images using a Buffer combiner to create a mask with the object's alpha channels, color values or a geometric object parameters.




## Preview Menu

To activate Preview Rendering options, right mouse click on the preview window. A pull-down menu appears that presents a number of choices, including:

A rectangular button with a light gray background and a thin gray border. The text "Render View" is centered in a dark gray, sans-serif font.


## Render View

Renders the current effect in the selected preview mode without taking into account the actual active rendering modes. When the Display All Elements button is enabled (top right of the effect configuration area, bottom of the effect list), all effects in the list will be rendered in the current preview mode.

A rectangular button with a light gray background and a thin gray border. The text "Render Effect" is centered in a dark gray, sans-serif font.

## Render Effects

Renders the current effect in its active rendering modes.

A rectangular button with a light gray background and a thin gray border. The text "Render All" is centered in a dark gray, sans-serif font.


## Render All

Renders all effects accounting for their active rendering modes.

A rectangular button with a light gray background and a thin gray border. The text "Undo" is centered in a dark gray, sans-serif font.

## Undo

Undoes the last operation on the image, such as rendering, loading, pasting or resetting to another image.

A rectangular button with a light gray background and a thin gray border. The text "Set Original" is centered in a dark gray, sans-serif font.


## Set Original

When Genesis renders effects, it keeps the original image. Therefore, you can reset your current image to the original. By

default, the original image is the image retrieved from the rendering. This option copies the current image into the original image. It is useful to transfer rendered effects onto the original image to work with buffers of the current image.


## Reset Methods

Reset Methods are marked with the >> marker. This allows the source image to be reset in a number of ways, including:

A rectangular button with a light gray background and a thin dark border. It contains the text "» Black" in a dark gray, monospaced font.

### Black

Resets the current image to black.

A rectangular button with a light gray background and a thin dark border. It contains the text "» Original" in a dark gray, monospaced font.

### Original

Resets the current image to the image stored as an original image.

A rectangular button with a light gray background and a thin dark border. It contains the text "» Rendered" in a dark gray, monospaced font.

### Rendered

Resets the last image acquired from LightWave

A rectangular button with a light gray background and a thin dark border. It contains the text "» Default" in a dark gray, monospaced font.

### Default

Resets both the current and the original image to the black image with the HSV color map bar at the bottom.

## Color Palette

Resets both the current and original image with the HSV color map.

Both the default and color palette reset methods are useful for testing the behavior of an effect over certain colors or to edit and test the range of the effect buffer.

A dark rectangular button with the text "Auto Reset" in a light, monospace-style font. A small white right-pointing triangle is located at the end of the button.

## Auto Reset

The Auto Reset option instructs Genesis to reset the image using a particular method at the beginning of each rendering.

## No Reset

This option disables the automatic reset. It is useful for rendering overlapping effects while working in the preview mode.

## Black

This option always resets the image background to black before rendering.

## Original (Default)

Selecting this option resets the image to the original. This option is useful when you are adjusting the effect over a particular image. This image will be restored each time before rendering so that there will not be any overlapping of effects.

A rectangular button with a light gray background and the text "Dim Background" in a dark gray, sans-serif font.

## **Dim Background**

When working with bright images, the effect preview may not be visible. For this reason, this option dims the source image in the preview. When the preview mode is disabled, the image is no longer dimmed.

A rectangular button with a light gray background and the text "Copy" in a dark gray, sans-serif font.

## **Copy**

Copies the selected image to the clipboard.

A rectangular button with a light gray background and the text "Paste" in a dark gray, sans-serif font.

## **Paste**

Pastes the selected image from the clipboard. If the image size does not match the current rendering size, the image will be scaled to fit.

A rectangular button with a light gray background and the text "Load..." in a dark gray, sans-serif font.

## **Load**

Loads external images into the preview module. Genesis uses LightWave for the retrieval of images; therefore, you can access any image format you can normally access from LightWave.

A rectangular button with a light gray background and the text "Save..." in a dark gray, sans-serif font.

## **Save**

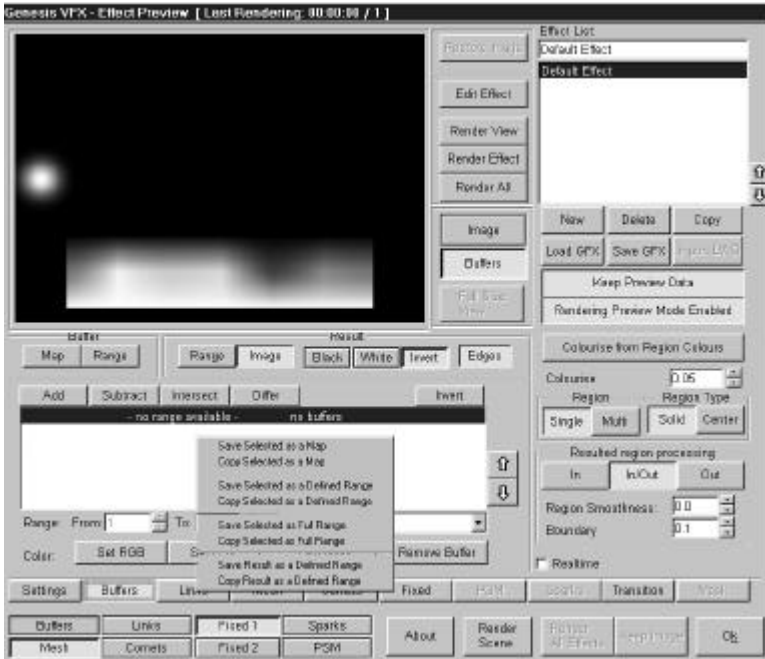
Currently, Genesis allows you to save images in 24-bit TARGA (TGA) and 24-bit Windows Bitmap File (BMP) formats.

**Tip:** When saving images you can use the + key in the Save dialog box to increase the file name number and save the image. This also applies to saving effects. If your image file name does not contain a number at the end, Genesis will add a number, for example file.tga file01.tga file02.... This is useful when you want to save rendered images as you progress with your work and you wish to get back to any previous stage of work.



# Chapter 3

## Using Buffers



### Buffer Menu

By right clicking on the buffer list in buffer rendering preview, you can activate a menu that allows you to copy to the clipboard or to save each buffer or buffer combination.

You can acquire buffers for saving or copying in one of the following ways:

Save Selected as a Map

## **Selected as Map**

Genesis provides the gray-scale intensity map of the buffer with white indicating full intensity.

Save Selected as a Defined Range

## **Selected as Defined Range**


Genesis provides a region map of this buffer within specified range values.

The image of this and the buffers outlined below will contain only black and white colors with white covering the region of the buffer.

A Buffer is a gray-scale map. Using the defined range, you can lock onto a color range, such as light gray to gray which is analogous to low to medium intensity.

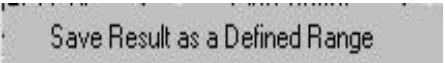
This function saves the defined range, where areas of the image that fall inside the region will be white and places that do not fall inside of the region will be black. So, if you have various shades of green and you lock onto the Green Buffer at 0.7 - >1.0, the buffer will represent the area containing a lot of green. When the map is saved, these image areas will be tagged with white.

Another way to look at using this function is to allow a transparent surface with various levels of transparency to be locked to 0.7 - >1.0. This range would create a region of the object where the surface is more transparent.

A rectangular button with a light gray background and a thin black border. The text "Save Selected as Full Range" is centered in a black, sans-serif font.

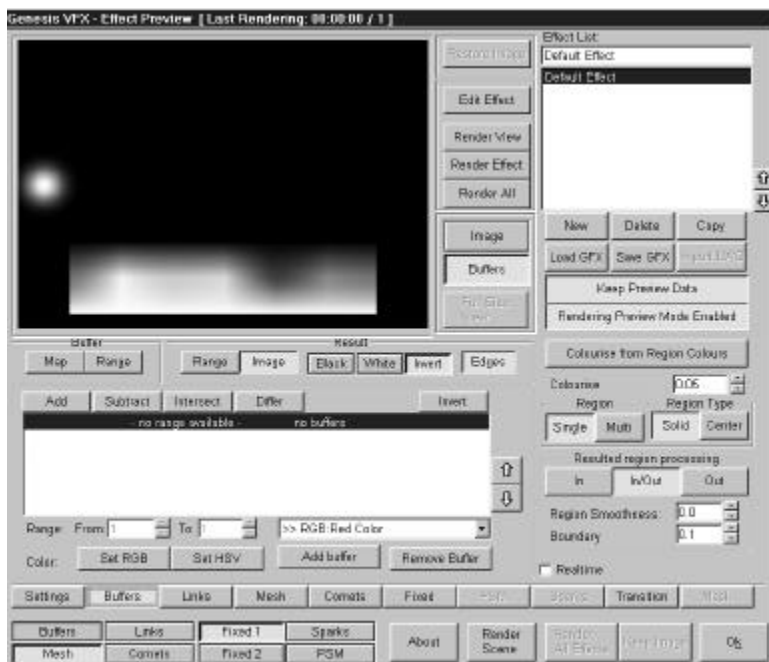
## **Selected as Full Range**

Genesis will provide a region of the buffer that does not take into account the range values as if they were set at 0.0 to 1.0. This can be described as a buffer presence map.

A rectangular button with a light gray background and a thin black border. The text "Save Result as a Defined Range" is centered in a black, sans-serif font.

## **Result as Defined Range**

Saves the resulting buffer list combination taking in account all ranges and all Boolean settings. You also can save certain buffers using the LW\_SpecialBuffer plugin that comes with LightWave.



## Buffers Rendering Mode

Rendering buffers are 2D on-screen areas with a particular property. Here Buffers are also referred to as Regions.

For instance, each surface in LightWave can be assigned a Special ID. After rendering, LightWave will provide a "Special Surface Buffer" that contains the image with a map of surface IDs. By locking on the particular ID of the surface, you can make the surface with this ID glow.

Genesis provides more than 20 buffers for use in rendering mode. Some are buffers provided by LightWave, some are extracted from the source image and others are procedural.

Desired buffers are placed in the list and then each is assigned a Boolean composition flag. These flags are Addition, Subtraction, Intersection, Difference and Inversion.

A rectangular button with a light gray gradient and a thin black border. The word "Add" is centered in a black, sans-serif font.


## Addition

The buffer with an addition flag will merge its area with the previously resulting area.

A rectangular button with a light gray gradient and a thin black border. The word "Subtract" is centered in a black, sans-serif font.

## Subtraction

Subtraction will subtract the buffer with this flag from the previously area. The result will be the area containing regions that were the result of previous processing and were not within the area of this buffer.

A rectangular button with a light gray gradient and a thin black border. The word "Intersect" is centered in a black, sans-serif font.

## Intersection

Intersection will composite the previous result with the current buffer leaving only regions that are common to both.

A rectangular button with a light gray gradient and a thin black border. The word "Differ" is centered in a black, sans-serif font.

## Difference

Difference will composite the previous result with the current buffer leaving only regions that were not common to both.

A rectangular button with a light gray gradient and a thin black border. The word "Invert" is centered in a black, sans-serif font.

## Inversion

Inversion will invert the current buffer before processing it in the Boolean combiner.

Procedural buffers, such as Buffer Edges, do not have merge parameters and will perform a particular function on the previous resulting buffer.

You can disable all of the combining modes to disable the buffer, but leave it in the list so that it can be retrieved from LightWave before previewing.

## **Limiting Buffers**

Some buffers also can be viewed as Intensity images that display the intensity of the particular property of the surface or the image. For example, you can view Saturation of the image as a gray-scale map. This gray-scale map is in essence an intensity map. The intensity of this map ranges from 0.0 to 1.0, where 0.0 is no intensity and 1.0 is full intensity. You can limit the range of the intensity accounted for by the buffer processor. If you set the range to be from 0.5 to 1.0, then only the half to full intensity parts of the image will be taken into account. In that way, the resulting buffer will cover only the areas of the image that are highly saturated.

The Hue buffer provides the ability to lock onto the hue of the image. The range in this case is a clockwise color spectrum from 0.0 to 1.0. By locking on the 0.2 to 0.5 range, you will limit the buffer's region to the green colors on the image.

You can then combine the two described buffers (saturation and hue) in the Intersection mode so that the resulting region will only be present in the highly saturated green areas of the image.

By intersecting this result with the particular surface ID in the Special Surface Buffer, you can limit the region to appear only in high-saturated green areas on the selected surface only.

The Special Surface Buffer provides a range locking as well, except each number represents a special surface ID. To lock onto the ID, you should set the range from and to parameters of the buffer to this particular ID. You also can use this range to lock onto multiple IDs at once.

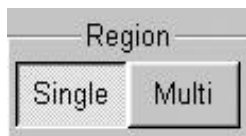
## Accessing Buffers / Buffer List

Color extraction buffers are always available to you because they are based on the source image. However, LightWave buffers are provided by LightWave only after rendering. Then they are kept by Genesis.

If you add a LightWave buffer when working in Genesis, this buffer will be unavailable and will not be accounted for by Genesis. When you render the scene, Genesis will request this buffer from LightWave. Once LightWave provides this buffer, it becomes available to Genesis, and Genesis will store it for later use.

Available buffers are marked with the >> marker and unavailable buffers are marked with the \*\*\* marker. The title is enclosed in brackets.

## Buffer Rendering Mode Options



### Region Single

Renders the selected region as if it were one large region. This option is a default option and should be used with simple glows.

## Region Multi

Renders disjointed regions separately. This option produces better results with effects that have streaks. However, rendering with this option enabled is much slower.

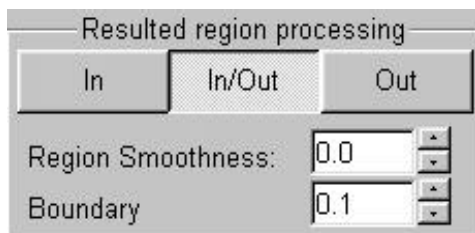


## Region Type Solid

Uses the region as a source for the effect.

## Region Type Center

Replaces each region with a point source located at its center.



## Resulted Region Processing

Use this panel to control where effects will be processed.

### In

Allows the effect to be processed only within the resulting region.

### In/Out

Processes the effect inside and outside of the resulting region.

### Out

This permits the effect to be processed only outside the resulting region



## Region Smoothness

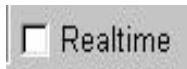
This setting defines how tightly the effect is wrapped around the resulting region. It is especially important that the source has sharp corners.

A value of 0.0 wraps the effect around the region tightly keeping the sharp region angles. A value of 1.0 wraps the effect around the region loosely smoothing all sharp angles of the source shape.

## Region Boundary Smoothness

This determines how sharp the boundary between the inside and outside of a selected region is. This can be used very effectively to simulate gas clouds.

A value of 0.0 makes the boundary sharp. A value of 1.0 makes the boundary smooth.



## Real-time

This option enables a real-time preview when editing buffers. The buffer preview will be updated in real-time as you modify range parameters. This option should only be used with fast machines because the preview update in buffer mode can be slow.

Performance also depends on the type of the buffer used and how many buffers are in the combination list.

## Available Rendering Buffers

**Tip:** To preview color buffers and how they behave, right click on the preview window, activate Color Palette, add a color buffer in the buffer list and see how changing the range reflects upon them. You also can view a buffer map by pressing the Map button at the left bottom of the preview image.



## **RGB: Red, Green and Blue Color Buffers**

This buffer will extract the desired color from the image and create a region buffer with it. Remember that the RGB compositing model mixes all three colors as the color gets whiter, so each of these three buffers usually takes bright areas on the image. For precise color locking, it is better to use HSV Buffers or VFX Color Distance Buffer.

## **HSV: Hue, Saturation and Value Buffers**

These buffers allow locking on the Hue, Saturation or Value of an image. These buffers can be combined to lock onto a desired color in the image better than RGB buffers because the Hue buffer allows more precise color locking than RGB buffers.

You can use all of the above buffers in combination to lock onto a specific color or property of the image. Genesis *vfx* also provides an additional buffer to assist color locking called Color Distance.

## **VFX: Color Distance Buffer**

The Color Distance Buffer allows you to lock onto the particular color by its hue and specifies the distance from this color to be included in the buffer. For example, setting the range from value to 0.330 and the to value to 0.400 will lock the buffer to green colors. Extending the range to value will include the closest neighboring colors as well.

## **LW: Alpha Channel**

Allows you to lock onto the Alpha Channel of the rendered image.

## **VFX: Buffer Edges**

Buffer Edges are a procedural buffer that will operate on the previously resulting region. Applying Buffer Edges will result in an outline of a previously resulting region. Such an outline can be used to add a glow to the contour of an object.

For example, if you have an image with a few large letters on it in a blue color, you can lock onto the blue color of the image and apply the Buffer Edges. This will produce the outline of your letters and when the glow is applied, it will create a neon-type of outline.

This buffer is useful only when you want to create an area with an internal glow that is similar to the surrounding glow because rendering in Genesis allows you to specify rendering inside, outside or inside and outside of the region. (See the rendering parameters in the section on the buffer rendering mode for more information.)

## **LW: Special Surfaces**

This buffer will include different IDs for surfaces set in the special surface ID (Surfaces Panel). You can set each surface ID to one of the 255 values. As mentioned previously in the Buffer Locking section, when locking the buffer to this particular surface both from and to parameters should be set to the desired buffer ID. You can also lock on a range of IDs.

## **LW: Diffuse Shading**

This buffer represents a gray-scale diffuse shading of the rendered image. It is useful to lock on the geometry parts oriented toward the light or away from it as well as the brightest and darkest parts of the object. This buffer does not take texture mapping into account and is based on the pure geometry in the scene and its lighting.

**Tip:** It is useful to view this buffer as a Map in the preview before starting to work. Place an object on the scene, add Diffuse Shading and render your scene. Then in the preview dialog, activate the Buffer Map viewing mode.

## **LW: Shadows/Illumination**

This buffer represents the shadow map of the image. It indicates where shadows are falling on the image. It also can be viewed as an Illumination map indicating where geometry will be visible to the light.

## **LW: Geometry - Facing Surfaces**

This buffer is based on the dot-product of the surface normal and the camera vector. When the buffer value is 1.0, the underlying surface faces directly towards the camera. When the value is 0.0, the underlying surface is edge-on to the camera.

## **LW: Mirror Surfaces**

The Mirror Surfaces buffer represents the area on the image occupied by surfaces that have reflective properties. A higher value indicates greater reflectivity.

**Tip:** You can use the Mirror Surfaces buffer with Inside Only region rendering and the Blur effect element to achieve blurred reflections. You also can adjust reflection brightness, tint and other parameters by using proper elements in effects. Other images can be composited in reflections by using Transition elements.

## **LW: Luminous Surfaces**

The Luminous Surfaces buffer represents the area on the image occupied by surfaces that have luminous properties.

## LW: Diffuse Surfaces

The Diffuse Surfaces buffer represents the diffuse area of the surface. It also takes into account the object surface texture.

## LW: Specular Surfaces

The Specular Surfaces buffer represents surfaces with specularity.

## LW: Transparency Surfaces

The Transparency Surfaces buffer represents surfaces that are transparent. Higher values indicate greater transparency.

**Tip:** Like the reflections buffer, this buffer can be helpful in adjusting various properties of an underlying image or compositing another image.

## LW: Raw Red, Raw Green, Raw Blue

These buffers represent raw surface colors before LightWave shading.



## Viewing Buffers In the Preview Window

When working in the buffer rendering mode preview, which is found under the preview window, you will find a set of controls allowing various previews of buffers.

### Buffer Map

This displays the gray-scale intensity map of the buffer.

### Buffer Range

This displays the locked range of the selected buffer.



## Result Range

The result range displays the result of the buffer combination.

## Result Image

This displays the result of the buffer combination on the image. The result image has three options for displaying buffers: Black, which displays the resulted region in the black color; White, which displays the resulted region in the white color; and Invert inverts the underlying region colors.

You can view the outline of the region by enabling the Edges option.

# Chapter 4

## Common Options

The version of Genesis for LightWave has been designed to share certain function interfaces from one rendering mode to the next. This chapter describes those common interface functions and options.

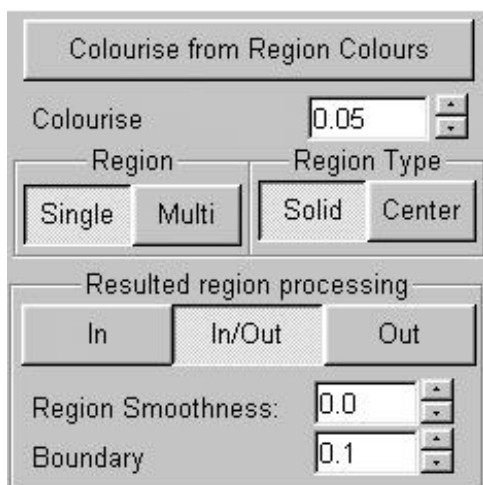


### Colorize From...

This option is common to all rendering modes. In point rendering modes, such as links and comets, the attached object must be a light for this option to work. The color of the light is used for colorization. If the color of the light is animated, the effect's color will be animated automatically.

In particle rendering mode, this option colorizes effects from particles. Thus, if particle colors are animated, effect colors will be animated accordingly.

In buffer rendering mode, this option allows colorization of the effect from source region colors. This lets you create glows that inherit the colors of the area from which they are glowing.



## Buffer Rendering Mode Only: Colorize Smoothness

When Colorize from Region Colors is enabled, this option specifies how smooth or sharp effect colors will be.

A value of 0.00 will not smooth the colors of the effect, leaving them sharp and distinct.

**Tip:** Usually when used with bright colors and low smoothness settings, such as 0.01, this option allows you to create beautiful glowing surfaces that look like they are emitting light.

The 1.00 value will smooth the entire effect after colorization, thus creating a much smoother glow. This glow has the color of the overall surface/buffer region.



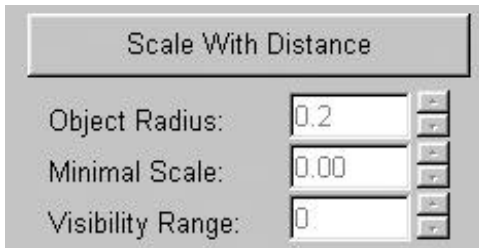
Colourise from Lights	
Age (LW Frames):	10
Samples:	10
Life (Genesis Frames):	20.0
Shift Influence:	-0.00
Global Intensity:	1.000

## Global Intensity

The Global Intensity option sets the intensity of all effects in a particular point rendering mode (Mesh, Comet, Particle).

## Value Settings

At a value setting of 1.000, each effect is at its full intensity, which is useful for producing oversaturated effects. With a value of 0.000, the intensity of effect is a fractional portion of the intensity of a single effect. When effects are equally distributed, the entire area occupied by the effects will have an overall intensity of a single effect. If the effects are not equally distributed, they will have a higher intensity in dense parts of the point system due to more frequent point overlapping. A -1.000 value causes the intensity of the effect to be set to 0 so that it is not visible.



## Scale With Distance

In the Links, Comet and Meshes rendering control panels, you can control the size of an effect.

### Object Radius

This function specifies in world units the radius of an effect. If you would like the effect to fully overlay a meshed object, set the radius of the "bounding sphere" of the object.

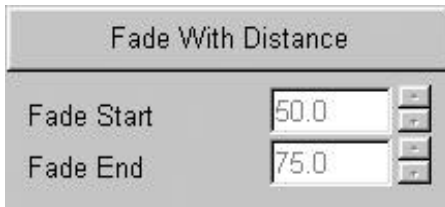
You can render the desired object in your scene and then use Preview to set the proper size of the effect while the object image is in the background.

### Minimal Scale

This specifies the minimal scale of the object, which is useful for making an effect visible at a distance farther than it normally would be visible with normal distance scaling.

### Visibility Range

This specifies a boundary from the camera beyond which an object will not be rendered. If you are using minimal scale, this setting might be useful for hiding an object when it gets too far from the camera.



Fade With Distance	
Fade Start	50.0
Fade End	75.0

## Fade With Distance

In the Links, Comet and Meshes rendering control panels, you can control the fade of an effect.

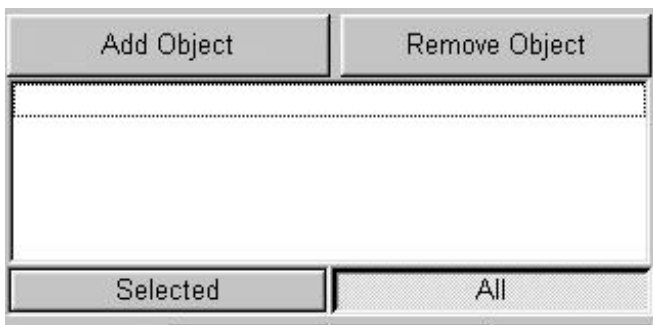
### Fade Start Distance

This specifies the distance from the camera at which an effect will begin to fade.

### Fade End Distance

This specifies the distance from the camera at which an effect will end fading and will no longer be visible.

**Note Well:** If the start distance is closer to the camera than the end distance, the effect will fade as it moves away from the camera. If the Start distance is farther from the camera than the End distance, the effect will begin to fade as it gets closer to the camera.



## Source Object Lists

The Object List contains the drop down combo box with available objects and lights. The selected object in this list is usually tagged on the screen with a little green cross. You can drag the time slider and see this object move.

You can add objects from this list to the attached object list below it.

## Display All Links / Display Selected Links

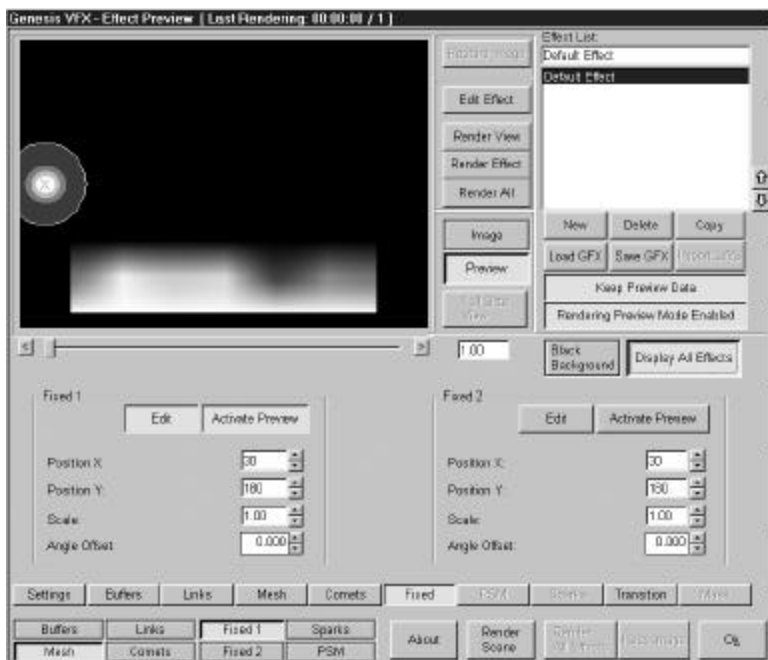
When working with the attached object list, you may view it in two modes: All or Selected. When viewed in the all mode, shapes for all attached objects will be displayed. When viewed in the selected mode, the only effect linked to the selected object is visible in the preview.

## Display All Effects

If Display All Effects, which is located at the top right of the preview section, is enabled, every effect in this rendering mode linked to every object will be displayed in the preview. Display All and Selected will be deactivated.

# Chapter 5

## Fixed Rendering Mode



### Fixed

The Fixed rendering mode lets you place two effects on the screen manually by specifying parameters in the effect preview. You also can place these effects by pointing to the desired position with the mouse in the preview window.

Fixed effects are not sorted by depth. You can specify the size and rotation angle with which you would like to render effects.

The Fixed rendering mode will render before other rendering modes. Therefore, fixed effects will be behind all other effects

unless they are forced to the front (see the description of how to do so in the Effects Setting section of the Preview Interface chapter in this manual.)

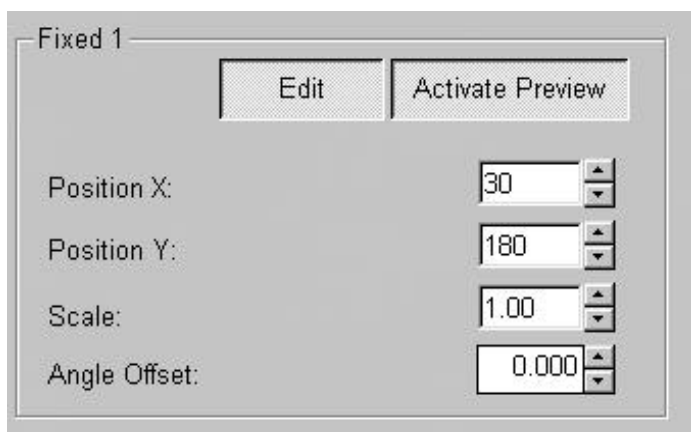
When both Fixed 1 and Fixed 2 preview modes are active, the active effect is identified with the red cross.

When Display All Effects is enabled, the edited effect is identified with a red cross, and its opposite component (Fixed 2 if Fixed 1 is edited, and Fixed 1 if Fixed 2 is edited) is identified with a blue cross.

When in Links or Comets mode, the selected attached object is identified with a blue cross. An unattached object in the LightWave object list is identified with a green cross. This is useful for allowing the user to see the movement or path of the object before an effect is attached to it.

## **Fixed 1 and Fixed 2**

There is no functional difference between Fixed 1 and Fixed 2. Both are provided to let you place two identical effects on the screen at once. Having both also is useful if you wish to create a dual effect, especially with flares that have low intensity secondary reflections.



## Edit

In Fixed mode, you can place effects and flares on an image interactively by clicking on the preview screen with the mouse. Doing so places the effect at the position of the mouse pointer. You also can hold down the mouse button and drag the mouse to see the effect or flare in a different place. This is useful when you wish to set up secondary reflections.

Editing in Fixed 1 activates the mouse clicking interface to allow you to place the Fixed 1 effect, and in Fixed 2 it activates placing the Fixed 2 effect.

## Activate Preview

You can activate a preview of the Fixed 1 or Fixed 2 elements when editing their placement.

## Position X

Displays the X (horizontal) position of the effect in image coordinates.

## **Position Y**

Shows the Y (vertical) position of the effect in the image coordinates.

## **Scale**

Scales each element in the effect individually.

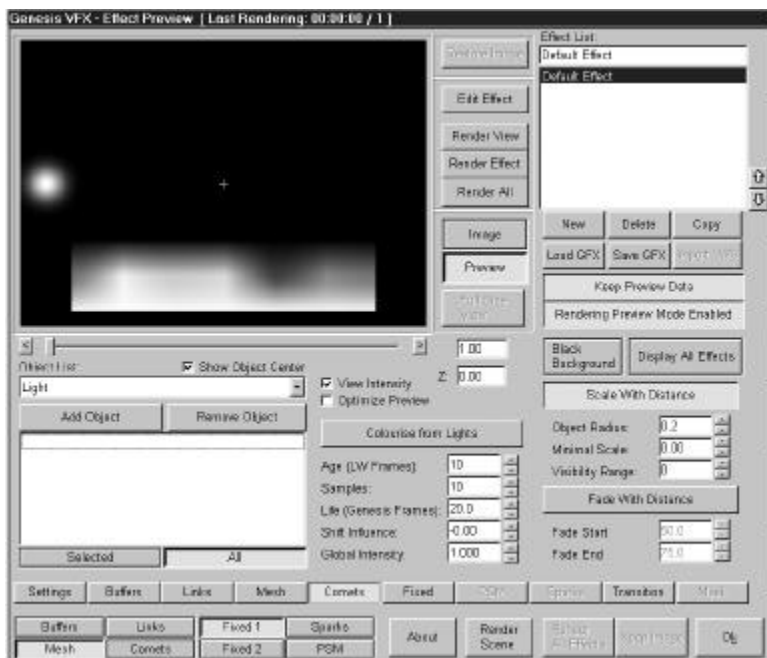
## **Angle Offset**

Adjusts the rotational offset of the effect and provides for individual rotation of each element in the effect.



# Chapter 6

## Understanding Comets



### Comet Rendering Mode

Comets are similar to links except a Genesis effect can be distributed in time along the path of an object providing the tail. Comets also can be used for glowing paths of objects.

☒ View Intensity      Z: 0.00  
☐ Optimize Preview

Colourise from Lights

Age (LW Frames): 10  
Samples: 10  
Life (Genesis Frames): 20.0  
Shift Influence: -0.00  
Global Intensity: 1.000

## View Intensity

This function allows you to disable the view of the intensity in the preview if your intensity is too low and not visible in the preview. Light and other effect element compositing modes produce stronger results when overlapped, so they are visible in the rendering.

## Optimize Preview

Displays only 10 shapes in the preview window regardless of how many samples there are.

**Note Well:** If you are using effects with a lot of elements or your number of samples is high, you must keep this option activated to avoid long redrawing times.

# Configuration Options

## Age (LW Frames)

The age of the comet or length in time of the comet tail.

## Samples

The amount of effect samples distributed over the comet's age.

## Life (Genesis Frames)

The amount of time in Genesis frames within the age of the comet.

## Shift Influence

Low sampling of effects in short comets can cause undersampling of the comet at the end when the size of the tail is smaller. Effects at the head of the comet will look fine because they are large and overlap each other. However, smaller effects are too far apart from each other to overlap. Shift Influence allows a shift of effects toward the end or toward the head of the comet.

## Global Intensity

The Global Intensity option sets the intensity of all effects in a particular point rendering mode. See the Common Options chapter for detailed information on this option.

Scale With Distance	
Object Radius:	<input type="text" value="0.2"/>
Minimal Scale:	<input type="text" value="0.00"/>
Visibility Range:	<input type="text" value="0"/>

## Scale With Distance

This setting allows you to control the size of an effect. See the Common Options chapter for more information.

Fade With Distance	
Fade Start	<input type="text" value="50.0"/>
Fade End	<input type="text" value="75.0"/>

## Fade With Distance

This setting allows you to control the fade of an effect. See the Common Options chapter for more information.

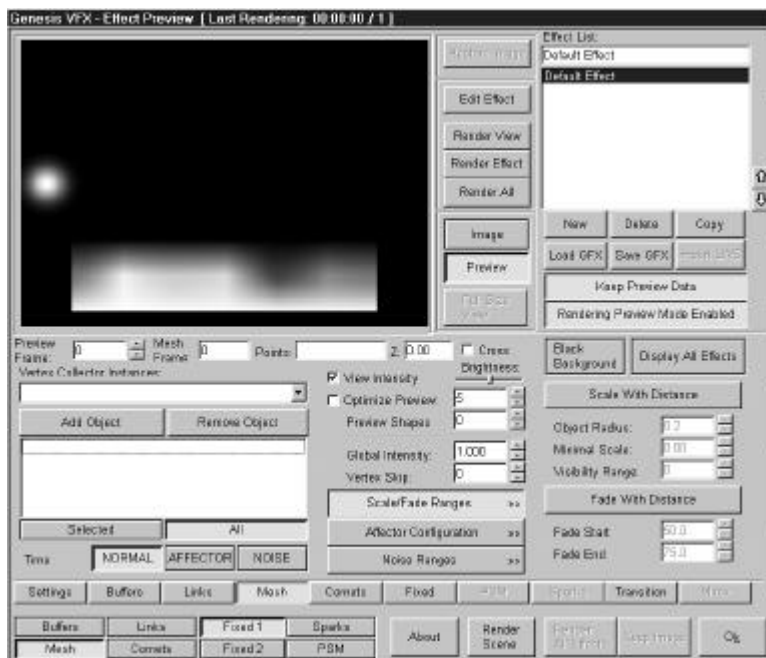
Colourise from Lights	
Age (LW Frames):	10
Samples:	10
Life (Genesis Frames):	20.0
Shift Influence:	-0.00
Global Intensity:	1.000

## Colorise from Lights

In the comet rendering mode, the attached object must be a light for this option to work. The color of the light is used for colorization. If the color of the light is animated, the effect's color will be animated automatically. See the Common Options chapter for more information.

# Chapter 7

## Mesh Rendering Mode



## Mesh Rendering Mode

The Mesh rendering mode allows a Genesis effect to be locked onto every Nth point of an object. This can be used to distort an object with displacements. Unlike direct particle support, mesh rendering mode does not support point aging.

## Using Vertex Collector

Vertex Collector is a displacement plugin that must be attached to the object before the mesh rendering mode can be used. Once activated, this plugin will use LightWave requests for the preview

or rendering of the object displacement to collect object point information.

Vertex collector is activated in Objects Panel / Displacement Map Plugins. If you click the filter options for vertex collector, Genesis activates the preview in the mesh rendering mode.

Once vertex collector has been activated on the object, LightWave will make a time jump to the previous frame and back to the current frame. If the object has a low point count and the scene is small, the main LightWave window will be refreshed forcing LightWave to make its first request to the vertex collector for object data.

If the polygon count of the object is high, LightWave will display a bounding box around the object, and you will have to go back to the LightWave main screen and wait until the object will be displayed. Only then can you go to the mesh preview window.

Activated after another displacement plugin, vertex collector can gather already displaced object data, to allow the mesh rendering mode with any particle system or displacement plugin.

**Note Well:** You must make sure that vertex collector has been placed after all displacement plugins.

After vertex collector is applied to the object, the object will appear in the mesh configuration in the Vertex Collector Instances list.

## **Mesh Rendering Mode Preview Options**

The status display is located underneath the preview image display when the mesh configuration is activated. The time bar is not present because vertex collector is a plugin that is called on-demand by LightWave for each frame, so the frame time cannot be set by Genesis when retrieving point data.

**Tip:** To change the frame of the mesh, you must quit the preview dialog and set the LightWave slider to the desired frame. LightWave will then refresh the object and data will be refreshed by the vertex collector.



## Preview Frame

If the effect is placed in the default, which is the Normal Time Mode, the effect frame can be set to a desired frame for preview purposes.

## Mesh Frame

The mesh frame is that of the scene object last acquired by vertex collector and thus the current LightWave frame.

## Points

This is the number of points in the object.

## Z

Z is the object center's distance from the camera in world units.

## View Intensity

See the Common Options chapter.

## Optimize Preview

This allows you to specify the number of shapes you wish to see previewed.

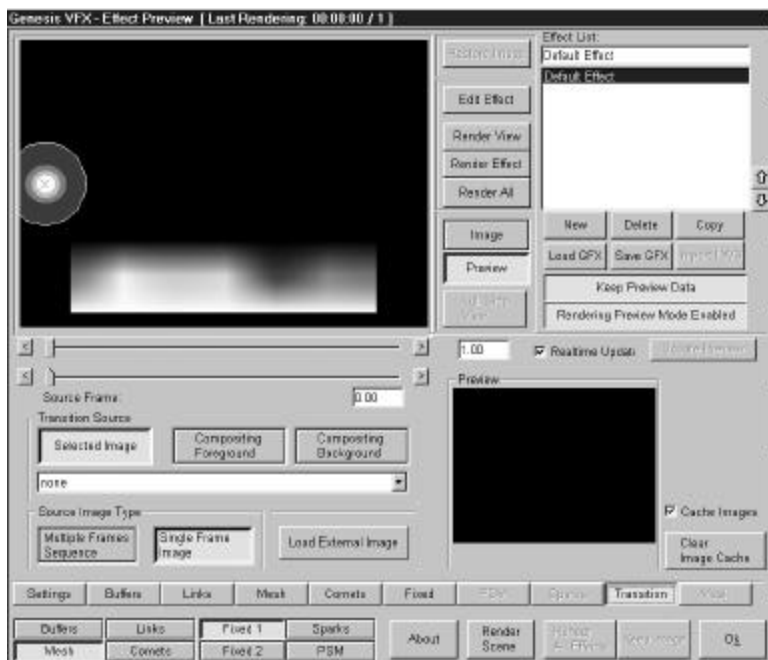
## Vertex Skip

This allows Genesis to render every Nth vertex in the object.



# Chapter 8

## Understanding Transitions



### Transition Configuration

The Transition Configuration in Genesis works closely with images loaded in LightWave. When the scene is loaded, Genesis automatically loads the required images into LightWave.

It is preferred, but not required, to keep images in the LightWave content directory. When the scene and images are moved to another directory and the directory hierarchy has been kept, setting this directory to the content directory will allow Genesis to

load images when loading a scene. If Genesis is unable to load the required image, it will ask you to specify an alternate image.

**Note Well:** Genesis is unable to load image sequences. Therefore, to work with sequences you are required to load all your sequences into the LightWave Images Panel. When loading the scene, you are required to load scenes manually before accessing Genesis, otherwise when you access Genesis and view transition settings, these settings will be reset.



## Transition Preview Settings

Under the rendering image preview, are two sliders. The first slider is the Genesis timeline as in other rendering mode configurations. Genesis will display the preview using the settings from the last active rendering preview mode.

The second slider, if used with a sequence, specifies when to start animating the sequence. When single image mode is selected (described below), this slider specifies the source frame of the sequence, which will be used as a single transition image.



## Transition Source

You can select the available images and sequences from the transition image list. Selecting the image or the sequence will set it to be the current image to be used in the transition elements of the current effect.

## Selected Image

Sets the image to be the selected image in the image list.

## Compositing Foreground

Sets the image to be the image that has been configured as the scene's compositing foreground in the Effects / Compositing Panel.

## Compositing Background

Sets the image to be the image that has been configured as scene's compositing background in the Effects / Compositing Panel.



## Source Image Type

This set of buttons allows you to select your source.

## Multiple Frames / Sequences

Enables the time of the selected sequence to be aligned with LightWave time during the rendering.

When multiple frames are enabled, the second trackbar over these options defines the Start Frame of the sequence.

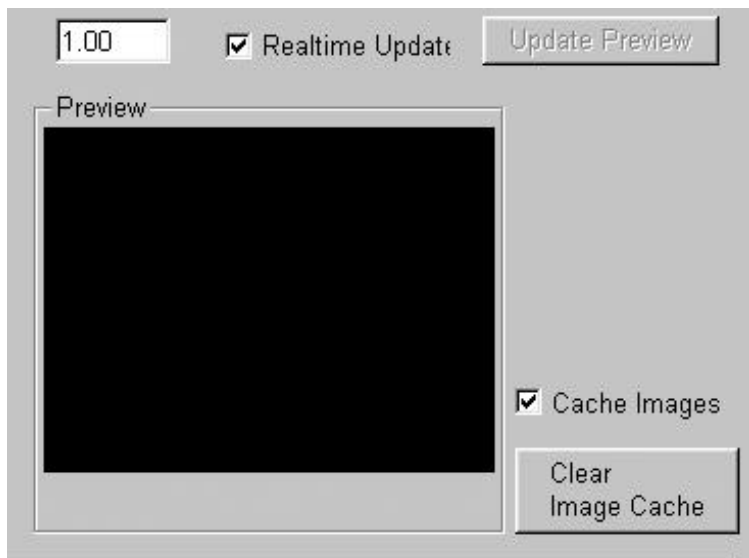
## Single Frame / Image

This is used for single image transitions, but also allows you to use a particular frame in the source sequence.

When Single Frame is enabled, the second trackbar over these options defines the source frame to be taken from the source sequence.

## Load External Image

Allows loading of an external image into LightWave so that it will become available in the transition image list. To load sequences, use the LightWave Images Panel.



## Real-time Update

Real-time update will update the image preview window each time the Genesis time slider or source frame/start frame slider is moved.

## Update Preview

If your real-time update option is disabled, you can manually update the preview of the current image.

## Cache Images

This option instructs Genesis to remember single frame images (sequences cannot be cached) between frame renderings. When rendering with a single image transition or working in the

preview, this option is extremely helpful since it prevents Genesis from loading the image from LightWave for each rendering.

## **Clear Image Cache**

Genesis will automatically clear its image cache when being deactivated. However, it is better to clear your cache when you are working in transitions and you are no longer using the image that has been cached (previously rendered).

## **Preview Window**

Preview screen provides display of the rendering and preview of the effect's shape. When working in buffer rendering mode, preview also can display the region on the screen that will be taken into account by the effect when rendering.

Right clicking on the preview screen or preview dialog title bar activates a menu that allows a number of useful options including saving a rendered image and copying it to the clipboard. When rendering in preview, Genesis will refresh the image to the original source image that was available when Genesis was activated. To deactivate this feature, you can set Auto Reset in the above mentioned menu to No Reset. This will allow you to see the effect overlap the image each time it is being rendered.

When working in the Preview dialog, the image you are working with is being scaled to fit the preview window.

Left clicking on the preview screen will usually deactivate or activate the shape/buffer preview display. In Fixed rendering mode, it will place the effect at the position of the mouse.

The screen can be reset to a number of default images. You can reset the image to the one initially retrieved from LightWave, Black, Default and Colour Palette. (See the menu command description for detailed information on these options.)

However, it is important to mention that the color bar at the bottom of the Default Image or the Color Palette Image can be used to see how the rendering of the effect will occur on top of colors. In buffer preview mode, these images are also useful to see which colors are being included or excluded from the image for the creation of the glow region.

# Chapter 9

## Troubleshooting Q & A

***Q:** I have linked the effect to the object passing in front of the camera and I can see the preview but not the rendering when in the preview. Why?*

**A:** Check that your Black Background button is not enabled, since it prevents the image from being painted in the preview. (This is done for speed acceleration of the preview since painting the window black is much faster than painting an image.)

***Q:** Why can't I see the preview or the rendering of the effect?*

**A:** Check to see if the distance scaling or distance fade is enabled. Also check the parameters you have chosen; they can make the object invisible. For example, if your object radius is small and the object is too far, you will not be able to see the object.

***Q:** Why can I see the rendering, but not the preview of the effect?*

**A:** Check to see if the preview is enabled. The intensity of the effect might be low. In this case, it might still be visible in the image when rendering, but not visible in the preview because intensity is displayed in the preview slightly differently than in rendering.

If you have multiple effects in point mode and their Global Intensity is set low, you will not see effects because each effect in the preview accounts for its own intensity when rendering light or any of the color adjustment elements. They overlay each other and

thus provide an additive effect. Mesh and Comet rendering modes have the View Intensity option that disables intensity preview.

It is also important to check if you are constructing a comet and have adjusted the effect's timeline so that after a certain time the effect gets smaller or becomes invisible to create a comet tail. You should not use the same effect in other rendering modes. In comet rendering mode, the effect's timeline is used to construct the comet tail, while in other rendering modes the effect's timeline is based on the LightWave time.



# Chapter 10

## Genesis Tutorials for LightWave

### Tutorial 1:

#### Genesis Basics: A Few Mouse Clicks To An Effect

**Step 1:** Load LightWave.

**Step 2:** Go to Camera View.

**Step 3:** Position the light so that it is visible and pointing at the camera.

**Step 4:** In the Effects Control Panel, select Image Processing.

**Step 5:** Select Genesis-VFX under the Image Filter Plug-ins. Select Options.

**Step 6:** When Genesis boots up, click on the Load GFX button. Look on your CD-ROM in the GFX/Ishani626 directory for the ShockStorm.GFX file. Select it and click OK.

**Step 7:** Click on the Links button. Click on the Add Object button and select the Light from the Object List window.

**Step 8:** Click on the Render View button. In a few seconds, you will see an effect.

# Tutorial 2:

## The Glowing Apple

**Step 1:** Load LightWave. If you are continuing on from Tutorial 1, clear the scene in LightWave.

**Step 2:** Load and position the Apple.Iwo object to your liking.

**Step 3:** Add Genesis to the rendering process. (This time, you must go to the Effects panel, select Image Processing, and then select Genesis-VFX as an Image Filter plug-in).

**Step 4:** Render the Camera View in LightWave by pressing the F9 key. This will render the apple and then launch Genesis with the rendered apple in the Preview Window.

**Step 5:** Click on the Links button and add the Apple.Iwo object.

**Step 6:** Click on the Edit Effect button. This will launch the main Genesis editing window.

**Step 7:** Click on the Make button. The Element Make window will appear.

**Step 8:** Click on color and create an eerie green color. Click on OK. To return to the Preview Image menu, click on OK again.

**Step 9:** You should now be able to determine if the glow is going to be big enough in relation to the size of your apple. If you cannot tell for sure, click on Render View. If the glow is too small, click on the Edit Effect button again.

**Step 10:** In the Genesis editing window, you can increase the size of the glow by clicking on the up spinner to the right of the size

window. Note that as you drag the mouse you can interactively see the change of the glow size in the preview window. When it appears to be large enough, let go and click OK.

**Step 11:** Now observe the increased size of the glow by clicking on the Render View button.

**Step 12:** To see the final rendered glow on your LightWave image, click on the Render All Effects button in the bottom right corner of the Genesis interface. In a moment, you will see LightWave re-render the apple with the glow effect attached.

## Tutorial 3

### Flaming Apple

This tutorial will quickly walk you through the process of applying Genesis effects to LightWave buffers.

**Step 1:** Load the Apple.lwo object from the NewTek/Objects/Food directory into LightWave.

**Step 2:** Position it and the camera to your liking, but place it in the lower third of the screen area so that the flames will be visible in the rendering.

**Step 3:** Add Genesis as an Image Filter item in the Effects Control panel under Image Processing.

**Step 4:** Render the Camera view. This will render the object and launch Genesis.

**Step 5:** Click on the Load GFX button and select the Smoke&Fire.GFX file from the Genesis vfx CD-ROM. (It is located in the GFX/Atmospheric directory).

**Step 6:** Click on the Buffers button. By default, the available buffer window will say >>RGB Red Color. Use this setting. Click on the Add Buffer button. The apple should be outlined in the Preview window.

**Step 7:** Click on Render View. This will render the apple on fire.

**Step 8:** Click on Keep Image. This will return you to LightWave.

**Step 9:** To animate this effect, select the desired resolution in LightWave, and set the Save Animation (and type) information.

**Step 10:** Render the animation using 60 frames