



ShadowLight, Inc.

is

Powered by LightWave 3D



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Document(s) included:

| <i>Document Name</i> | <i>Release Date</i> |
|------------------------------|---------------------|
| FractalGen Help 1.3.20 Rev 0 | October 7, 2002 |

Note: Other last minute notes, if any, will be located at [FractalGen's homepage](#)

Official Help File

FractalGen v1.3.20 Demo

Table of Contents

| | Page # |
|--|--------|
| Release Notes | |
| A. Invitation From the Authors | 2 |
| B. User Suggestions/Feedback | 2 |
| C. Special Note | 2 |
| D. <u>End User License Agreement (EULA)</u> | 3 |
| To get up and running: | |
| i. Installation | 4 |
| ii. Program Notes | 5 |
| A. System Requirements | |
| B. Service Packs | |
| C. Purchase Full Version | |
| iii. Other Help | 6 |
| These are the basic steps to use FractalGen: | |
| 1. Generating a FractalGen Landscape | 7 |
| 2. Applying Color Gradients | 9 |
| 3. Using the Bump Map Options | 9 |
| 4. Water (Lake) Screen | 10 |
| 5. Other Functions | 11 |
| <u>Appendices</u> | |
| A. FractalGen and LightWave (r) | 13 |

Release NOTES:

A. Invitation From the Authors:

Email a render you have completed that you used FractalGen to create the landscape images. We are very interested in how FractalGen is helping 3D artists with their ideas/projects. We will post them to our web site with credit to the sender for others to enjoy. Credit will be given to sender's e-mail address if no author or copyright is specified. [Submit Image Here](#)

B. User Suggestions/Feedback

If suggestions are received and deemed useful and practical to FractalGen's purpose, these ideas will be incorporated as much as possible in future release(s). Sorry, we cannot offer any compensation or royalties for ideas received. Updates will be announced on the Download Page. *Registered users can download all relevant service packs and/or patch files, FREE of charge (v1.4.xx or above).* [Submit Suggestions Here](#)

C. Special NOTE: FractalGen is NOT a rendering package.

It is intended to generate fractal IMAGES to use for flat mapping to 3D objects in another program (LightWave, 3D Studio, WaveFront, Maya, and the like). It does have a simplified 3D Preview which says it is "rendering". However, other than this function, when rendering is referred to in this

help file, it is referencing the rendering procedure of your 3D package. The remainder of this file assumes you are familiar with imaging mapping with your particular package.

D. End User License Agreement

FractalGen End User License Agreement (copy of EULA.txt in program directory)

The following is valid for all version(s) and service packs.

Definition of Terms:

The software product identified above, which includes computer software and/or electronic documentation shall be termed "Product".
"you" = are an individual or an individual of a single company ["entity"]:
ShadowLight, Inc. may also be termed "Provider".
UPDATES may also be termed "Service Packs".
UPDATES generally add new features or enhance existing ones.
PATCH files generally fix bugs or crash problems.

IMPORTANT-READ CAREFULLY: By installing this product, you agree to ALL of the following:

1. License
 - 1.1 Only one individual at any location, either private home, apartment, or company address is permitted to use the Product per registered version.
 - 1.2 If you are an entity and have acquired this and wish to purchase a FractalGen Multiple License Pack, please submit your request by contacting us directly through our [E-Mail](#).
2. Legal Copyrights
 - 2.1 It is illegal to reverse engineer, decompile, or disassemble the Product. It is illegal to use these means to determine or then steal code from within the EXE, and use it for "your" own purposes, be it for credit or profit.
 - 2.2 ShadowLight, Inc. reserves the right to deny support and take legal action for damages, lost profits, and any applicable legal fees for breaking any part of this agreement.
 - 2.3 This Product is not for resale in whole or in part in any form.
 - 2.4 All UPDATES are part of the Product and are bound by the same terms listed in this agreement.
 - 2.5 The demo version may be freely distributed in its original self extracting file format: FG1320-NT.EXE or FG1320-2K.EXE
3. LIMITED WARRANTY.
ShadowLight, Inc. warrants registered, paid users from the date of acceptance of the registration form from "you" for a period of 30 days. This warranty is only valid for PC's using either of two platforms (1) Windows NT 4.0 SP6 or (2) Windows 2000. Other OS versions were not tested and therefore will not be directly supported by the help desk at ShadowLight, Inc.. However, if the Product can not be made to operate satisfactorily, then "you" agree to remove the Product from your computer. Any fees paid to ShadowLight, Inc. will be returned minus shipping fees, if any. We encourage you to E-mail us to report a the "bug" problem and

allow sufficient time to release a fix.

4. COPYRIGHT
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 - (b) The LightWave files, however, are free for use without credit or condition to ShadowLight, Inc. (but it wouldn't hurt us if you mentioned us in some of your project descriptions!)
5. Contacting ShadowLight, Inc.
[E-Mail Us](#) or visit the home page @ [ShadowLight, Inc. Home Page](#)

i. INSTALLATION

Installation of the DEMO version is updated as of Oct 7, 2002

Two (2) demo versions of the install file are available for download:

- Windows NT 4.0
- Windows 2000

While Windows 9x (95, 95A, 95B, 98, 98SE) are not directly supported, the Windows 2000 version should install itself and work fine. However, we did not test this. You are free to try it at your own risk with no warranty from us.

Both files are available at ShadowLight Inc's Download Page at: [ShadowLight Download Page](#)

1. First, download the self extracting file (ex: FG1320NT.EXE or similar name) from the website relative to your operating system.
 2. Save the file to any directory.
 3. Run the file.
 4. When prompted, specify the destination directory as "C:\". Make sure "Extract with path names is selected. This step is important since the DEMO is hard coded to look for itself in the "C:\FractalGen" directory.
 5. Drag a shortcut of "FractalGen" to the desktop using "My Computer", if desired.
 6. Run the program.
 - You should see a splash screen showing FractalGen and relative information. Click "OK". At the moment, we are not using registry keys to define the program location. Thus, the program is "hard wired" to look for itself in the C:\FractalGen directory.
 - Please [report](#) any installation problems to us so we may post solutions to our FAQ page(s).
-

ii. PROGRAM NOTES

A. System Requirements

The Provider has actual tests conducted for this software on

- Windows NT 4.0 SP6
- Windows 2000

and did not encounter fatal crash problems. We can offer some support on the above OS's.

At the moment, install files will not be considered for the following OS's:

- Linux
- Unix
- OS/2
- Macintosh
- or any other OS that is not Windows 2000 or Windows NT 4.0 SP6.

While FractalGen is not processor dependent, we recommend a Pentium 200 MMX at minimum. Most testing of this software was carried out on a Pentium II 550 MHz machine. Final testing occurred on two machines: Windows NT with 550 MHz and Windows 2000 1 GHz. As always, FASTER is BETTER!

Minimum:

Pentium 200 MMX
24 Bit Color Display settings
1024 x 768 Resolution minimum recommended
64 MB RAM

Recommended:

Pentium II 550
24 Bit Color Display, 17" Monitor
1280 x 1024 Resolution
128 MB RAM

B. Service Packs

- a) The first service pack update for v1.4 is already planned to include:
 - Sample Fractal Generator Presets
 - More bump map options
- b) Version 2.0 is planned to include the above and:
 - Flatten Land Function
 - Natural Erosion Function
 - River Generator
 - Super High Res (SHR) output for all maps (up to 2048 x 2048)
 - JPEG Saver
 - Registry key install support (to allow installation to any directory).
- c) Bug reports will, of course, be fixed as much as possible and re-released. Report program bugs to our e-mail: [Submit Bug Report](#)
- d) Service Packs will be posted to ShadowLight, Inc's download page. To run the update, the user must have already installed the complete version with REGISTERED KEY #.

e) Version 2.0 release should occur by January, 2003.

C. Purchase of Full Version (v1.4.xx)

** Purchasing v1.4 adds the following not included in the DEMO **

1. "Save Hi-Res Map" function in the "Tools" menu will be enabled.
 2. "Invert Landscape" function in the "Tools" menu will be enabled
 3. Any and all expiration date(s) will be disabled.
 4. You will be registered for all the updates and/or patches for v1.4.xx
-

iii. Other Help

QUICKSTART HELP:

For quick help, check the QuickStart Help box on the splash screen. This will guide you through the basic operations of using FractalGen to create your first landscape.

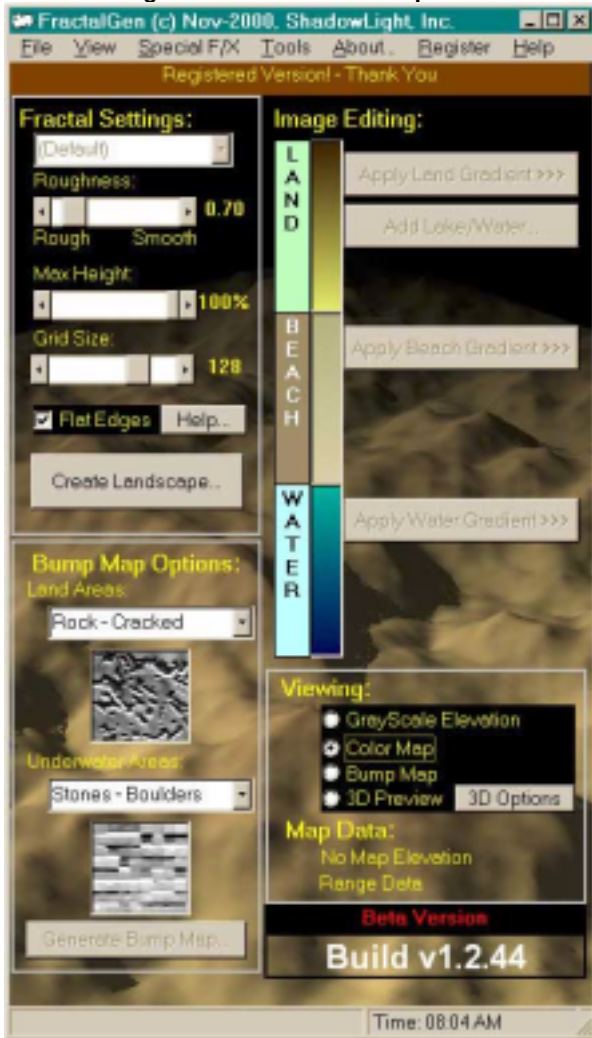
OTHER:

Several help buttons are located on the screens for some of the more important items. Specific questions not found in this file can be e-mailed to ShadowLight, Inc. by using our "Contact Us" button at our [homepage](#) or [E-mail Us](#) directly. We will endeavor to support all inquiries received, noting that registered users will be given top priority.

USING THE PROGRAM TO CREATE LANDSCAPES

Note: Some screens may appear slightly different from these example screen shots.

1. Generating a FractalGen Landscape



Main Screen

FractalGen creates a fractal landscape based on random numbers and several inputs user supplied. These are:

Inputs Values
Roughness 0.5 - 2.5

This value interpolates the changes between grid points. LOW values are ROUGHER.

Max Height 10 - 100%

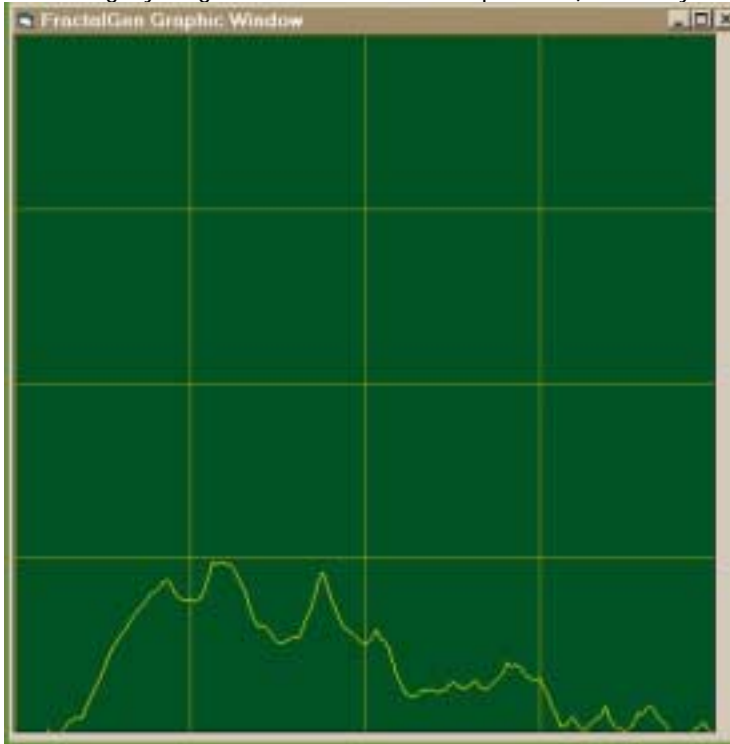
Sets the overall scale of the landscape, in a sense. Tests show 75-100% give best results since the images are mapped and can be scaled in the rendering program.

Grid Size 32,64,128,256

Sets the number of "control points". Example: 256 basically gives one control point on a 512x512 grid (in the exact center). FractalGen uses the four corners as control points also, for a total of five. This would make the landscape have less "peaks." HINT: Small numbers here give more of a cloud-like fractal.

Flat Edges (on/off)

Flat Edges forces zero elevation changes at the map edges. This is very useful for island type landscapes. Also, several landscapes can be generated with the same parameters and set side by side in the 3D program to create larger and larger landscapes (each with their individual maps of course.) Before you create a landscape, the graphic window will show you a relative graph of the grids and a sample cross section of a landscape. The height of the yellow lines are relative, meaning, the generated landscape can be slightly rougher or smoother than the preview (the beauty of randomness!).



Note that the "Grid Size" and "Roughness" are not entirely independent. That is, decreasing the Grid Size and lessening the Roughness will be basically the same effect.

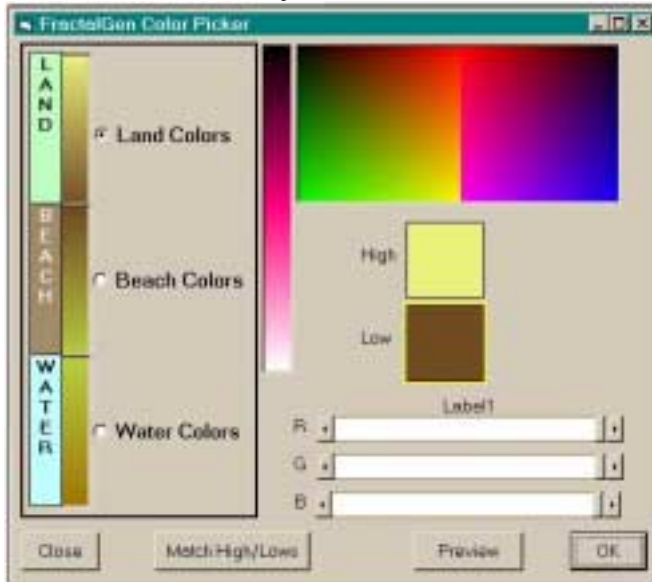
Also, the previews will change shape with each change of the settings. The preview is a random preview of some landscape and not necessarily a preview of the same one over and over.

Create Landscape Button

Takes all the above information along with a few random numbers and generates the 3D landscape. At this point, a small preview window opens. You can either accept the fractal generated or choose "Generate Another".

2. Applying Color Gradients

The color gradient bars are located on the right side of the main screen. Three basic ranges are used: land, beach, water. Click on any of these labels or the color bars to open the Color Picker screen.



This screen operates much the same as any other color picker you may have used. Click in the color box to pick a color. The band of color to the left of this displays all ranges of this color from dark to light. Click a color in here to refine your first choice in the large box. You can further refine this by sliding the color bars left or right.

In the Color Picker screen, select which colors you wish to edit via the radio buttons by the labels. Two colors are used for each range: high, low. All these colors are editable at run time. FractalGen also loads the last color scheme saved with the last project. HINT: If you wish to paint land only with more colors, think of the beach and water ranges as just Low Land. Click on "Match High/Lows" to overlap the high color on Water with the low color on Beach. This can create some interesting effects and will make the land look layered from bottom to top. The "Match High/Lows" was used and is showing the color bands in the picture above (brown - green - brown - yellow)

OK = Copy these colors to the main screen for use on the landscape.

3. Using the Bump Map Options

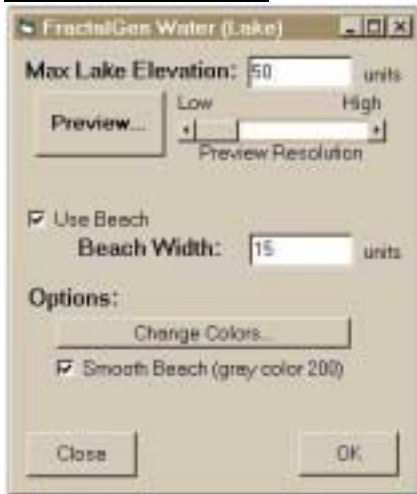
Bump maps really only take effect in FractalGen when the Lake/Water feature is used. (see next Section for more details). Two maps can be chosen in the list boxes, one for land areas, one for underwater areas. This effect is basic but does create some interesting combinations. There are eight bump maps to choose from (more in future releases!). The Lake/Water feature will use these settings to paint the gray scale bump map graphic screen. The Lake/Water screen includes one option button for bump maps:

Smooth Beach

This paints the bump map areas defined as Beach with a smooth color. This lets the "sand" look smooth during the render phase of your project. Don't forget, this bump map will match perfectly with the color maps defined in previous steps.

NOTE: FractalGen was not designed to be then "end all" product for landscape renders. This is not the end of bump maps by any means! More maps/effects can be added via your 3D package for even better output. This area is left up to the user since we assume you will be familiar with bump mapping if you are reading this!

4. Water (Lake) Screen

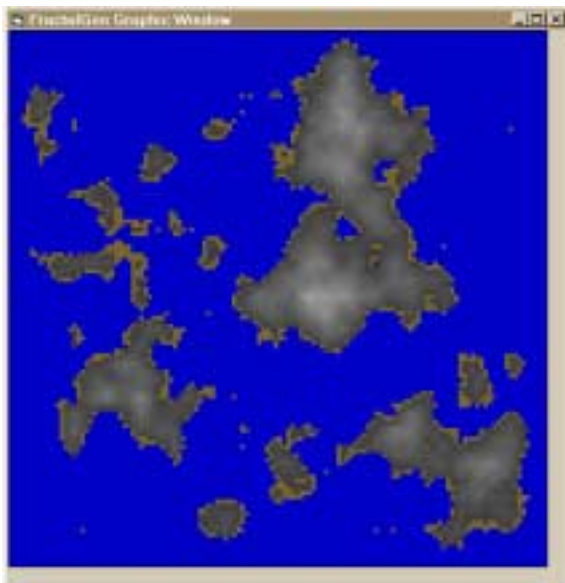


This feature paints your landscape as if part of it is underwater. In test renders, a water plane is located at the "beach" level. The water is rendered with bumped waves, reflection, transparency, and refraction. This provides very good results (see sample picture below).

To use, set the max lake elevation (default is 50).

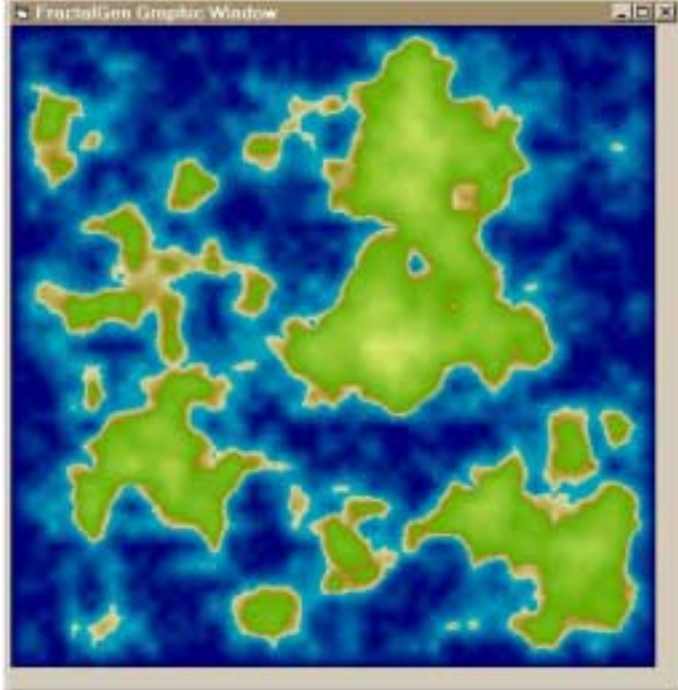
Click on preview to see a quick and dirty version of the output on the graphics screen.

You can select the preview resolution using the slider bar (we recommend HIGH for faster PC's, 500+ MHz to get a better overall idea of the output). You can also keep changing the lake elevation and preview until you are satisfied with the way the "islands" or "lakes" look.



Water "Preview"

Click OK to apply the color gradients to your landscape. FractalGen now paints the landscape with your gradient colors. In the example above, the final output is:



Note: Some other functions are self explanatory and not explained here (like "Show Color Map" option button)

5. Other Functions

The following functions are available with release v1.4 or greater

A. Save Hi-Res Map

This functions regenerates the color map in 1024 x 1024 size and saves to a default file equal to your project name plus the suffix "HRCLR". This procedure can take some time depending on your processor speed. We recommend setting up your complete scene, then reloading your project into FractalGen, and using the High Res output to "upgrade" the image quality for use in your 3D program final rendering. The hi res color map will give a much smoother look to the colors and transitions of your landscape.

EX. Project name is: PRJ-01

Hi Res Map name: PRJ-01HRCLR.bmp

B. Invert Landscape

This function simply reverses the height data (low becomes high, high becomes low). The color map and bump map are not effected unless reapplied using one of the paint buttons or lake procedure.

The following functions are planned and will be available only with Release 2.0 or greater.

C. Flatten Area

This function will create a "FLAT AREA" roughly square shaped at the screen location you specify. The program will smooth the surrounding land to give as natural of a look as possible. This function is useful to create flat spots where you may want to add buildings or roads or even a small town in your 3D package layout.

D. Import Image

This function loads an image from your hard disk and creates height data for the image. Data can then be operated on by any of the other functions. The default size is 512 x 512. Pictures with either or both dimensions greater than this will be truncated to 512 size. Image dimensions smaller than this will be filled with black up to the 512 dimension. This works best by loading 24 bit images with only white and black components ("8 bit grayscale").

However, the recommended procedure for importing images is:

- a. load your image into a paint program (PhotoShop, PaintShop Pro, etc.)
- b. resize your image to 512 X 512 (turn off Keep Proportions if your image is not square to begin with)
- c. change to gray scale image
- d. resave as JPG
- e. run FractalGen and import the newly saved file.

Notes:

- a. It will load and operate on "full color" 24 bit images, however, you may get unexpected (and sometimes COOL) results.
- b. This feature may be greatly enhanced in release v2.0.

F. Special F/X Menu

1. Add Erosion

This function is planned to add natural looking erosion to the height data.

2. Add River

This function is planned to cut a natural looking "riverbed" through the landscape.

G. JPEG Saver

As always, we are open to ideas to help create a better product. We welcome your constructive input. Contact us via our [home page](#) or click [here](#) to e-mail your idea today!

Sincerely,

M. Campbell
Founder of ShadowLight, Inc. , Oct-7-2002

[ShadowLight, Inc.'s Home Page](#)

APPENDICIES

A. FractalGen and LightWave (r)

LightWave was used to test the output of this software. So, we have included one of the base scenes with all objects. The OPTIONS panel under "Tools/Options" has a check box to "Save copy to LightWave default image files". During a save operation, the current project's images will be saved as follows:

Example:

| | |
|-------------------|---------------------|
| Project name | PROJECT-001.FGP |
| Grayscale fractal | PROJECT-001.bmp |
| Color Map | PROJECT-001-clr.bmp |
| Bump Map | PROJECT-001-bmp.bmp |

If the "Save copy to LightWave defaults..." is checked, these file are also saved:

| | |
|-----------------|-----------------------------|
| fractal.bmp | copy of PROJECT-001.bmp |
| fractal-clr.bmp | copy of PROJECT-001-clr.bmp |
| fractal-bmp.bmp | copy of PROJECT-001-bmp.bmp |

The fractal*. * files come already mapped to the object file LANDSCAPE.LWO in the LightWave/Objects directory of FractalGen.

The files included for use with LightWave (r) are:

C:\FractalGen\Lightwave\objects\
landscape.lwo
water.lwo
deepwater.lwo

C:\FractalGen\Lightwave\scenes\
landscape.lws

C:\FractalGen\Lightwave\
landscape.srf - re-maps the fractal.bmp, fractal-clr.bmp, fractal-bmp.bmp files
to landscape.lwo
water.srf - this is a decent surface for refraction, reflection renders.

C:\FractalGen\Images
All other images in this directory not either prefixed by "fractal..." or your project names
are loaded into the program before execution.

DO NOT DELETE THESE OR FractalGen WILL NOT FUNCTION.

[end of Help File]