



Inklings

Bulletin of Interpretive Ideas

March 2005 Volume 5, Issue 1

Get the Picture?

by Tim Cordell, Potato Creek State Park, North Liberty, Indiana

Current Project List

- Interpretive Sign Design, Mounds State Park, Indiana Dept. of Natural Resources
- Interpretive Plan, Wabash and Erie Canal, Delphi, (IN) with *Lifespace Design*
- Interpretive Sign Design, Brown County State Park, Indiana Dept. of Natural Resources
- Interpretive Sign Design, Oxbow Park, Elkhart County (IN) Parks Department
- Interpretive Sign Plan and Design, North Hydro Park, Charter Township of Ypsilanti (MI) with *Landscape Architects & Planners, Inc*
- Interpretive Sign Design, The Nature Conservancy, Indiana Chapter
- Interpretive Sign Design, Latimer Woods, Bloomington Parks and Recreation (IN)
- Interpretive Sign Design, Chilo Lock and Dam, Clermont County Park District (OH)
- Exhibit Planner, McCormick's Creek State Park, Indiana Dept. of Natural Resources, with *Lifespace Design*
- Interpretive Planner, Lincoln State Park, Indiana Dept. of Natural Resources, with *Lifespace Design*

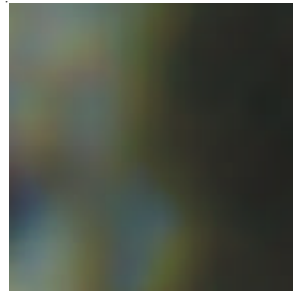
Several of us are making the transition from taking and using slides to illustrate our talks to using digital images in power point presentations and for websites. Unfortunately, sometimes we may not completely understand the options with digital images, which may cause us problems down the road.

For an image to be used by a computer the information must be stored in a numeric or digital language. To accomplish this, the image is broken down into a grid of tiny points called pixels. Each of these pixels is assigned a location and a single color. When the pixels are placed in order they form the image on the monitor or it is sent to the printer or other output device. The ordering and how the pixels are colored are stored in files in the computer's memory. As with many other things, there are different ways to do this and that accounts for the different file types. There are currently over 100 file types for still photos alone. By understanding the difference between the common file types, such as: GIF, JPEG and TIFF, and when to use which type, you can maximize your use of digital images.

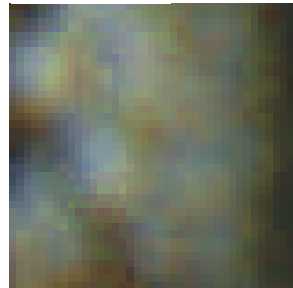
Simple graphics created on your computer usually don't represent much of a problem. Photographs with the subtle color shading can require a very large file to store all of the information, sometimes several megabytes. These larger files become too cumbersome to transfer electronically via email or on web sites so they are compressed to make the

files smaller to facilitate this type of usage.

The compression process can either be lossy or lossless. Lossless compression means that the original numeric storage representation of 0s and 1s can be exactly reconstructed. Lossy compression means the original representation cannot be exactly reconstructed from the compressed form, in other words some of the original pixel data is discarded to save space.



Enlargement of the same image as a TIFF above, and a GIF below.



GIF

Graphic Interchange Format (GIF) reduces the number of colors to 256 and how frequently the information is sampled. That results in GIF files being among the smallest and also having saved the least amount of the original photo's information. If the image is to be used only for small on screen

usages, a GIF is probably good enough. However, if you decide you want to print that image later and use it for a display or in a larger format you are not going to be satisfied with the very grainy poor quality image.

JPEG

Joint Photographic Experts Group (JPEG or JPG) is a more sophisticated compression program. Unlike GIF format images, JPEG images store full color information, so they can contain millions of colors. The developers determined which colors and how much complexity of the image that the human eye could process and wrote a program that would eliminate the extra



Visit our website www.interpretiveideas.com

Lise Schools, Owner

lise@interpretiveideas.com

517/347-0861

Okemos, MI 48805-0355

P.O. Box 355
Interpretive Ideas

Inklings

detail to reduce the file size (lossy compression). JPEG compression can also be controlled to some degree by the user to specify the amount of compression and can easily achieve a 20 to 1 ratio. The more the file size is compressed, the more information is lost. If you save the maximum quality setting, the JPEG image is virtually indistinguishable from the original, but it is much larger in size than files saved with a lower quality setting.

The JPEG file format is good for on screen usage, e.g., power points and web sites as well as for smaller print sizes. One caution is that EVERY time the file is saved it compresses it again and some detail is lost. Merely opening and closing the file does not do this, but saving it does. Therefore, saving an image as a JPEG is not the best format if you intend to archive the image.

TIFF

Tagged Image File Format (TIFF) is a graphics file format created in the late 1980s to be the standard image format across multiple computer platforms. Recently, JPEG has become the most popular universal format, because of its small file size and Internet compatibility. However, the TIFF format is lossless and graphics can be stored at any resolution, in black and white, gray scaled or color giving it some

advantages over JPEGs. Tiff is commonly used in desktop publishing and serves as an interface to numerous scanners and graphic arts packages.

One common recommendation is that if you plan to manipulate your images, use a lossless format, such as Tiff, while you edit. If you expect to edit your image again in the future, keep a TIFF master file to work from. If you need a smaller file, save a copy as a JPEG when you are finished editing. The JPEG you use in your power points or emails should be derived copy, not your editing master.

For archiving digital photos save master copies in TIFF formats and back them up on a CD-R disk not a CD-RW that you could accidentally overwrite and lose your originals.

RESOLUTION

Resolution is also important to understand when setting up scanners and digital cameras. When the scanner is analyzing the original photo/document, the amount of detail it records is often referred to as resolution. If it were set at 72 pixels per inch (ppi) you would record information for 5,184 pixels per square inch (72 x 72). Scanning the same original at 300

ppi would record information for 90,000 pixels (300 x 300) giving you much more detail in your image and also a much larger file size.

Which is better? You need to think ahead to what the expected/possible uses of the image will be. To help you decide, think of the limits of your output device. The common ink jet printers are 300 dpi; high end laser printers can be as much as 2400 dpi, whereas computer screens may be 72 ppi and digital projected images may be in the neighborhood of 1024 x 768 pixels. You can save a copy as a lower resolution and higher compression if you need a small file. You can't make a lower resolution, poor quality image bigger and better if you need that. With that in mind, it is probably the best ideas to archive a high resolution TIFF file for important images and then make JPEG or GIF copies for particular uses.

*This article appear originally in **Indiana Interpreter**, newsletter for Indiana DNR interpreters and was used with permission.*

Visit: www.interpretiveservices.IN.gov