Large Format and the Digital Process

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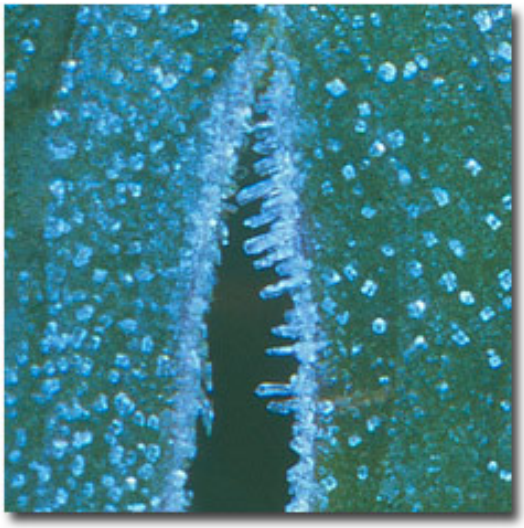
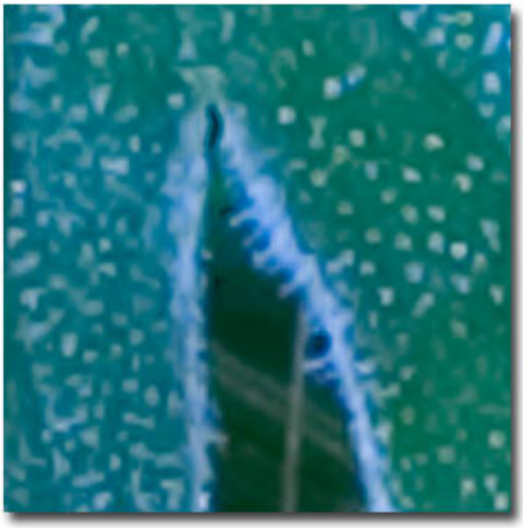
To some, Large Format and Digital photography may seem on opposite ends of the spectrum; the former being the bastion of staunch grouchy “traditionalists”, the latter ruled by adventurous renegades pushing the boundaries of what may even be considered “photography.”

Prejudices aside, when examined objectively – LF and the Digital process were practically made for each other, with each discipline bringing strength in different areas. Digital tools provide unprecedented control and precision for image processing, particularly for color images, that would otherwise be difficult if not impossible to achieve using traditional darkroom techniques. Where digital technology falls short is in the initial capture phase. As of the time of this writing the technology for capturing images with the level of detail that a Large Format setup affords is still not available. A 4x5 sheet of film can hold the equivalent of dozens if not hundreds of megapixels (exact comparison is a matter for debate, but there’s no argument it is much more than any currently available digital options can provide).

Image Capture: Film vs. Digital Sensor

The role of either film or the capture sensor is essentially to record information seen through the lens in a portable form that can be conveniently carried elsewhere (darkroom, studio, computer workstation, etc.) for further processing and printing. Assuming more detail is better (usually the case in landscape photography), large sheets of film seem almost an obvious choice here. They can hold many times the amount of detail possible with the current generation of sensors. I fully expect this balance to shift as technology matures, but experts in the field predict it may yet be some years before a commercially available and reasonably priced sensor array can rival 4x5. High resolution scanning backs for 4x5 are already a reality, though these present other challenges (most notably capture speed) that may make them difficult to use outside of a studio.

There is little argument that digital sensors and related camera technologies do provide some tremendous value in terms of convenience, instant feedback, and control that film cameras do not and can not provide. In terms of image detail though, the advantage is still largely in favor of film. A 4x5 sheet of film provides a remarkably portable form of storage for huge amounts of information. Once processed and scanned, the remaining process is practically identical to an image captured digitally and converted from raw format.

To illustrate the discussion I’ll use the image on the left above, which I captured using both a 6 megapixel DSLR and a 4x5 view camera. The images at the center and on the right illustrate detail from each capture. The center image is a 100% crop from the 4x5

sheet, scanned at about 2,000dpi, shows clear detail in the ice crystals that make up the frost. The image to the right is a crop of the 6MP image that was enlarged using Bicubic interpolation to a similar scale as the 4x5 scan. It obviously lacks the detail of the 4x5 sheet.

The example above is fairly typical. Obviously better quality lenses and higher-end sensor arrays may narrow the gap somewhat, but the differences will remain obvious when examined at this resolution.

It's important to keep in mind that these differences don't always come into play in the final print. Depending on print size and subject matter, very fine detail may or may not be as critical. When it is though – the 4x5 capture will allow you to make much larger and more detailed prints.

Camera

At least as it pertains to landscape photography – the ability to apply camera movements provides the view camera user with flexibility and control beyond that of a "rigid" camera design. There is undoubtedly some benefit to using tilt/shift lenses on other camera types, but for control freaks such as myself these still fall short of having independent standards and the ability to use movements with lenses of practically any focal length.

Speed and Convenience

Large Format photography is not conducive to working fast, nor is it the most convenient way of making images. The view camera and related activities WILL slow you down… a lot! I won't get into whether or not this is a good thing as it's really a matter of personal opinion, but it's something to be considered nonetheless. Add to this the hassle of developing your film and scanning it and there's just no way around it – LF photography requires more work than many other alternatives.

Scanning

Scanning requires its own separate workflow and a set of skills that are obviously not needed when your original capture is digital (on the other hand, some may consider raw conversion as important a step when working with digital capture). It can also be argued that adding another intermediate step between the original capture and the final print degrades the image. While this is true, academically speaking, it is highly unlikely that the effect will be noticed in a good scan from a good original.

One particular film artifact to be conscious of is grain. Even the finest of films will show grain when scanned at resolutions of about 2400dpi or greater. Large Format film greatly mitigates the ill effects of a grainy scan by allowing you to scan at lower resolutions and avoid visible grain while still delivering staggering amounts of detail. Consider a scanned area of 4.5" x 3.5", scanned at 2400dpi and your resulting file will contain close to 91 megapixels. If you are prepared to deal with grain, and use high resolution film, additional detail can still be extracted upwards of 4000dpi, taking you beyond 250 megapixels.

It's important to keep in mind that comparing these megapixels to those captured by a digital camera is not exactly apples-to-apples comparison. Other factors like grain, mentioned above, color depth, and dynamic range mean that different capture mechanisms will yield results that are different in more than just pure detail.

Processing and Printing

This is where the various workflows converge. At this point the film and digital sensors have served their purpose – the detail had been captured and is available as raw material for you to mold into your final product. The finished image at the top of this article started as a scan looking like the image on the right. This scan is not too different from the way the image appears on the original sheet of Fujichrome Provia 100F it was captured on.

With the help of digital tools, color, contrast, sharpness, and a host of other adjustments, image characteristics were carefully controlled and tuned to produce the final result I wanted. This fine degree of control would have been extremely difficult if not impossible to achieve in a wet darkroom. Further, the ability to use color profile allows me to visually bring my image to the goal line without using a single sheet of paper or a drop of darkroom chemicals. It wasn't until I got it to look "right" on the screen that I sent it to the printer with full confidence that the end result will match my vision.

It’s All About Using the Right Tool for the Right Job

Large Format capture still provides the best combination of features, quality, and price for those who seek to make very large and detailed prints. If this is your ultimate goal, you will be well served by sticking with “old” technology for a while. When it comes to post-processing and printing, especially for color images, digital technology now provides results that are measurably better (in terms of dynamic range, resolution, longevity, etc.) than traditional darkroom processes. The technology also allows for extreme control over every aspect of the image, from nuances in color and contrast, to sharpness and detail. Here too, the choice of the right tool is self-evident.

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Comments on NPN large format nature photography articles? Send them to the editor.

Guy Tal resides in Utah, where most of the Colorado Plateau's breathtaking grandeur can be found, and where issues of preservation and land-use are among the most prominent on the political agenda. Guy's large format photography can be viewed on his website at http://scenicwild.com.