



What is HDR?

An interview with Kevin McNeal by Bill Wight, Staff Instructors, [Mountain High Workshops](#)

Bill's Question: Kevin, can you give us a brief description of HDR?

KM: HDR is a set of techniques that allows the opportunity for a greater dynamic range of exposures through digital imaging techniques. It captures the full range of luminosity between light and dark in a single scene. What this means in terms of photography is that the processing of HDR captures everything from dark shadows to bright highlights and combines it into a single image.

Question: Why should we use HDR?

KM: There are many benefits to processing a HDR over a single image. Digital cameras today are becoming more advanced everyday but the present day digital camera can only capture latitude of four to six stops. Therefore in a scene with strong contrast the in-camera meter will only be able to expose for either the highlights or the shadows and not both. Processing through HDR allows you capture the full magnitude of the scene without sacrificing either of the extreme tonalities.

Question: When should we use HDR?

KM: HDR is a real advantage when it comes to scenes that are hard for the camera to photograph in terms of contrast. Images that benefit the most from HDR has very dark tonalities and bright highlights in the same scene. Some examples of this might be found when shooting indoors with minimal lighting. In terms of shooting outdoors, the early or late hours when the sun reflects its light onto a scene causes harsh contrast. Extreme variances between the unlit areas in deep shadows and the areas illuminated by the sun provide opportunity to shoot in HDR. Shooting this type of scene in a single exposure would be impossible without the aid of filters. But by shooting in HDR you can capture the full spectrum of luminance and provide detail throughout the image. Every landscape scene I photograph, I shoot for HDR with exposure bracketing. I always use a tripod.

Question: Do we need to do anything differently when shooting for HDR ?

KM: When shooting in HDR, you do need to do things different then if you were going to shoot for a single exposure. Begin by changing the shooting mode to continuous, as multiple exposures at one time are essential to HDR. Depending on the brand of digital camera you

have, you can set auto bracketing to shoot from three to nine exposures ranging from the darkest regions of an image to the lightest. If you have an advanced Nikon DSLR you can set this auto bracketing so that it will fire off nine exposures in a row from darkest to lightest. If you own a Canon, then things are a little different, as most Canons only auto bracket three exposures in a row.

To get the most of your bracketing it is important to make sure that you capture detail in the brightest parts of the image and detail in the shadows. Review your histogram and make sure if you have the option to turn on a highlight warning in your camera you have this turned on. Your exposures should range mostly in the three to five exposures. But in situations where the range of contrast is significant it is important to capture at least nine exposures to provide enough information for processing in HDR. When it comes to different ranges of exposures it never hurts to have more than you need. Determine if the scene you are looking at displays high or low contrast in a scene by reviewing your histogram. Each scene is different and exposure needs to be considered for each scene independently.

Noise needs to be minimized in the HDR image, so it is imperative to keep the ISO below 200. The cumulative effect of high ISO images will destroy an image with excessive noise. When shooting in priority mode on the camera make sure to keep it on Aperture priority, as you do not want to change the aperture mid way through. Only vary the shutter speed to change the exposure. Lastly, it is near impossible to do this without the aid of a tripod as the different exposures need to line up exactly to work and my experience hand holding and trying to do HDR have always failed. If you have a cable or remote release for the camera this really helps to ensure the camera does not move.

Question: What do I need to start HDR ?

KM: To get started in HDR you will need to look at a third party plug in for Photoshop called Photomatix Pro. You might be tempted to use the Merge to HDR in the actual Photoshop but I encourage you not to use this, as the results are often very poor. When it comes to third party plug-ins for HDR there are a few others but in my experience Photomatix Pro has continually provided the best results. To find out more information about Photomatix Pro click [here](#).

Question: How Does Photomatix Pro work?

KM: Using Photomatix Pro is very simple and user friendly. You begin by selecting the several exposures you took for the image. Then drag those images to Photomatix Pro icon or right click on your mouse and choose open Photomatix Pro. Once you have brought the images into Photomatix Pro you click on Generate HDR and your images will combine into one 32-bit image. This process takes some time but at the end of it you are left with a single processed image. Once this single image is processed you will need to Tone Map the image, which renders the image into a workable 16-bit image, which then can be altered in terms of color, contrast, and luminosity.

In terms of tone mapping I encourage you to leave it on its defaults and make the rest of your changes in Photoshop. The reason I say this is that Photoshop is where you want to make all your big edits to the image, as it is less destructive. In Photoshop you can make changes on a separate layer and still make changes at a later time to the image. Overall. Photoshop's ability to handle editing is far superior than Photomatix Pro.

Question: Are there advanced HDR methods?

KM: Like all new advances in digital photography, people can get carried away with HDR and its abilities. Options are available in HDR that can change the image into a highly unnatural look by

over processing. For those who like the benefits of HDR but want to avoid the look of surreal imagery, HDR can be applied in a modest amount. Under the Details Enhancer tab, apply a low strength amount in combination with high smoothing to achieve a very natural look to the image.

Lastly, for those looking to achieve the most natural look in HDR, save the final image of HDR as a separate layer in Photoshop. Later in processing, blend that layer in with a single processed layer done in Photoshop. More specifically, I will save the HDR layer above a layer processed normally in Photoshop and blend in the HDR layer where I have lost detail or blown highlights. This advanced technique in Photoshop requires you know how to blend layers in Photoshop. Once the saved HDR layer is on top of the single processed image, you can also change the layer's opacity to fifty percent to blend the two layers equally avoiding the look of over processed HDR.

A slightly different technique for doing HDR is to use a technique called Exposure Fusion. Exposure Fusion is a new concept of processing a series of bracketed images. Exposure Fusion takes the best tonalities from each image in the sequence and combines them to create a single image. What is actually happening is that the fusing process assigns weights to the pixels of each image in the sequence according to luminosity, saturation, and contrast, and then carefully balances the three to make a single image. In layman's terms what is happening that the best part of each image gets recorded and fused together to combine all of the best elements in final image. A free stand-alone program is enfuse: <http://enblend.sourceforge.net/>

Question: How can we get more information on HDR?

KM: A search on the Internet on HDR will provide lots of information on everything you need to know about it. There are many tutorials on the subject as well as videos. Start by looking at example of others and the process they have gone to achieve their look. Try to recognize the type of scene where HDR really works for you and the degree of exposures needed for each scene. Like anything HDR takes time to get better at it but I promise you the results in the end are worth it.

Here is a great tutorial on HDR by Trey Ratcliff: <http://www.stuckincustoms.com/hdr-tutorial/>

Question: Can you show us some of your HDR and Exposure Fusion images?

KM: Sure. Here are three:



Sunset reflections from Lake Siskiyou below Mount Shasta.



Sunburst at Shi Shi Beach along the Olympic Peninsula in Washington State.



Alpenglow on Maroon Bells in Colorado.