CCCC MENTOR SERIES

INTRODUCTION TO HDR PHOTOGRAPHY

AGENDA

- What is HDR Photography?
- When to consider shooting HDR photographs
- How to shoot HDR photographs
- Processing
- Closing Thoughts

WHAT DOES “HDR” MEAN?

- HDR - High Dynamic Range
- Dynamic Range - the ratio of the darkest and brightest parts of an image
- Anything that can capture light - film, digital camera sensors, or your eyes - can only see a limited range of luminance values
- HDR photography is a technique which allows us to photograph scenes which have a higher dynamic range than your camera can capture in a single exposure

WHAT IS HDR PHOTOGRAPHY?

- This is a technique which allows you to create an image of a scene that your camera cannot capture with a single exposure

- Why can't your camera capture it? Because the difference between the darkest and brightest parts of the scene is greater than your camera's sensor can "see".

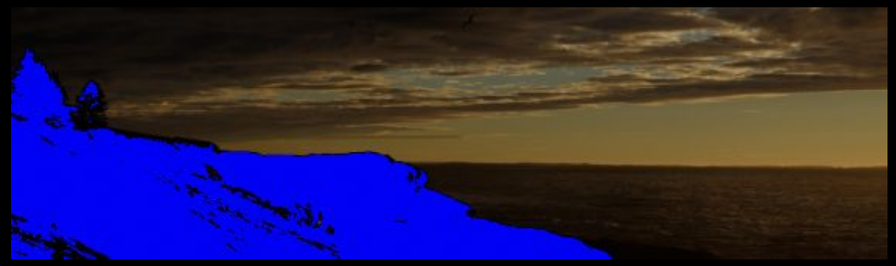
- This technique allows you to create an image that is much closer to what you saw in the moment. This is because your eyes can see a much greater range of bright and dark values than any camera today - and your brain is performing HDR processing for you!

WHAT HDR DOES

- If you've taken a photograph looking toward the sunrise, you've probably noticed that the horizon is overexposed if you're exposing for the foreground.

- If you expose for the horizon, the foreground is underexposed.

- HDR is a technique which allows you to merge multiple exposures to create a single image which captures the shadows and highlight details.



HOW IS AN HDR IMAGE CREATED?

- At least two (but more often at least 3) exposures are merged in software: one exposed for highlights, one for the mid-tones, and one exposed for shadows.

- Many cameras today, like your phone, have HDR modes. More about that later.

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Pemaquid Point Lighthouse

WHEN WOULD I WANT TO TAKE AN HDR PHOTOGRAPH?

- Landscape - sunrise, sunset, storms, backlit scenes
- Architecture - indoor scenes in particular
- Backlit subjects
- Street photography
- Any time you’re photographing a scene and you want to capture shadow or highlight details that your camera can’t see with a single exposure.

PROS AND CONS OF HDR

PROS

- Allows you to more accurately capture a scene as you saw it
- Creates an image with significantly more dynamic range than a single exposure can accomplish
- Gives you options in post processing that other techniques do not

CONS

- You have to plan ahead
- Requires multiple exposures
- Additional post processing
- Not a great option if the scene has a lot of movement (ghosting)

ALTERNATIVE TO HDR

- Graduated neutral density filters are an alternative. They allow you to darken part of the image, like the sky, anywhere from 1 to 4 stops

- This allows you to capture a greater dynamic range, but only if the scene has a relatively straight horizon.

- This requires good filter and a filter holder, both of which can be expensive.

TAKING AN HDR PHOTOGRAPH

- Option A - Your Camera or Phone’s HDR Mode
- Option B - Taking separate exposures and merging them together in software

YOUR CAMERA'S HDR MODE

- Many modern cameras from Canon, Sony, Nikon, Fuji, and others offer a HDR mode
- Many Apple and Android phones also provide HDR photography by default

HOW DOES IN CAMERA HDR WORK?

- The camera takes multiple exposures and combines them into a single image.
- You can then process the image like any other photograph
- You sacrifice the flexibility of being able to re-process the photograph later from the source frames. Whatever the camera generates is all you get.

HDR mode switch on a Fuji X-T4

THE RESULTS

- The results can be excellent, especially with newer cameras.
- Spend some time playing with it, and you may decide you don’t need go any further. However, if you want to take things to the next level, manually merging your exposures in dedicated software is the way to go.

Tiger demonstrating an in-camera HDR photograph

TAKING EXPOSURES TO MERGE IN SOFTWARE

- Always shoot raw
- Set up bracketing
- Tripod - recommended when you’re starting out
- Aperture priority or manual exposure

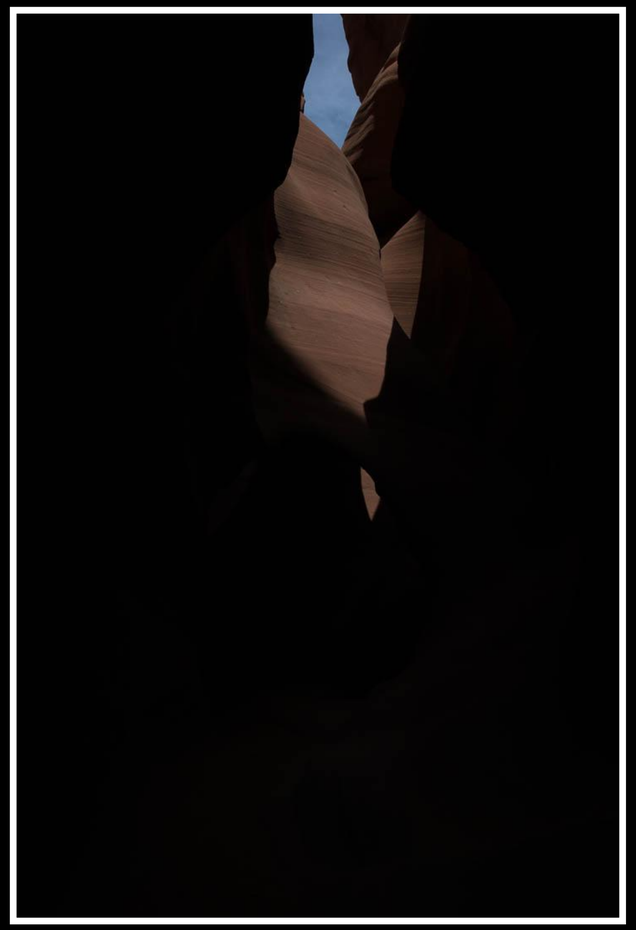
BRACKETING

- Bracketing takes multiple exposures with settings changes between them
- Auto Exposure Bracketing (AE or AEB) - changes the exposure settings by a certain number of stops between each exposure. This is what we'll use for HDR.
- Refer to your camera manual for instructions on how you can set up bracketing and use it
- There are other kinds of bracketing which we won't be using for HDR. Take a look at your manual, you might discover some great creative tools to use for your photography.

AUTO EXPOSURE BRACKETING

- Modern cameras provide auto-exposure bracketing
- You configure the camera to take multiple images at different exposure values - typically at least 3. Most cameras offer up to 9 exposures today.
- A good starting point is 3 exposures, 2 stops between exposures.

3 EXPOSURES, 2 STOPS BETWEEN EXPOSURES



-2 stops - expose for highlights

0 stops - expose for mid-tones

+2 stops - expose for shadows

3 EXPOSURES, 2 STOPS BETWEEN EXPOSURES

Merged image (unedited)

IS A TRIPOD REQUIRED?

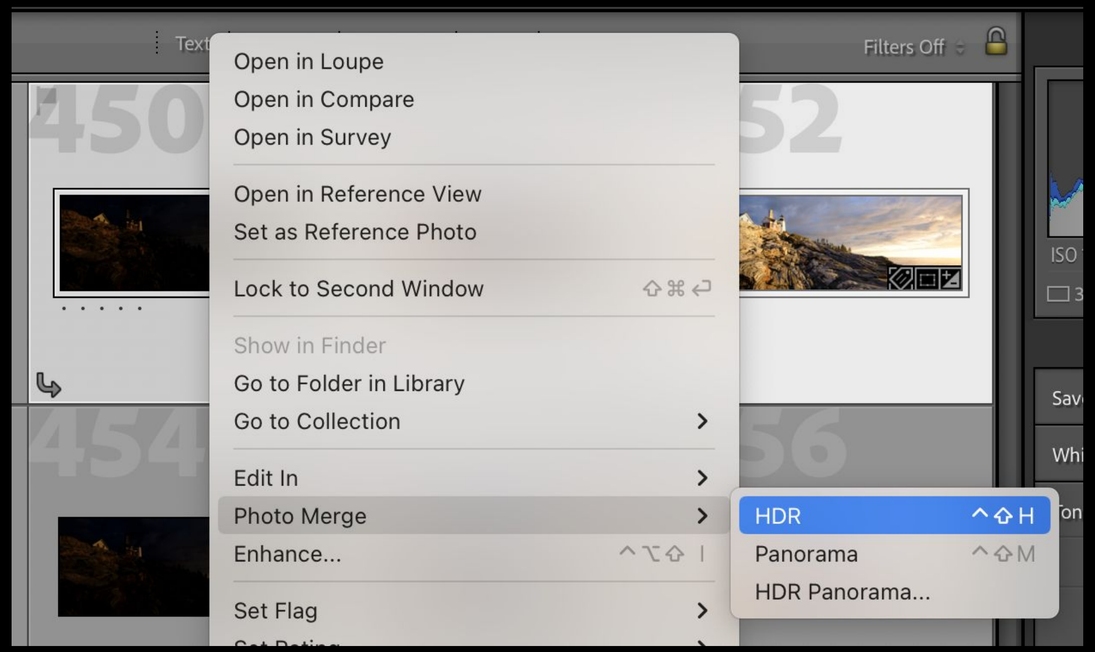
- You can shoot HDR photographs handheld
- If the longest exposure for the HDR image is too long to hand hold, you should use a tripod
- The software can do a lot to align exposures which were shot handheld, but it isn't a miracle worker
- I usually recommend starting out with HDR by shooting with a tripod. Over time you'll learn when you can let go of the tripod and shoot handheld.

TOOLS FOR CREATING HDR IMAGES

- Lightroom - Simplest tool, the one we'll be focusing on in this presentation.
- Photoshop - Similar to Lightroom, but not as convenient because you have to load each of the images first.
- Nik HDR Efex - More flexible than Lightroom, with a lot more options. Available with a 30 day free trial. Only available for purchase with the excellent Nik tools collection.
- Aurora HDR - Very powerful. No free trial.
- Photomatix - the grandaddy of HDR tools. It is available for a long term free trial with watermark on generated images.

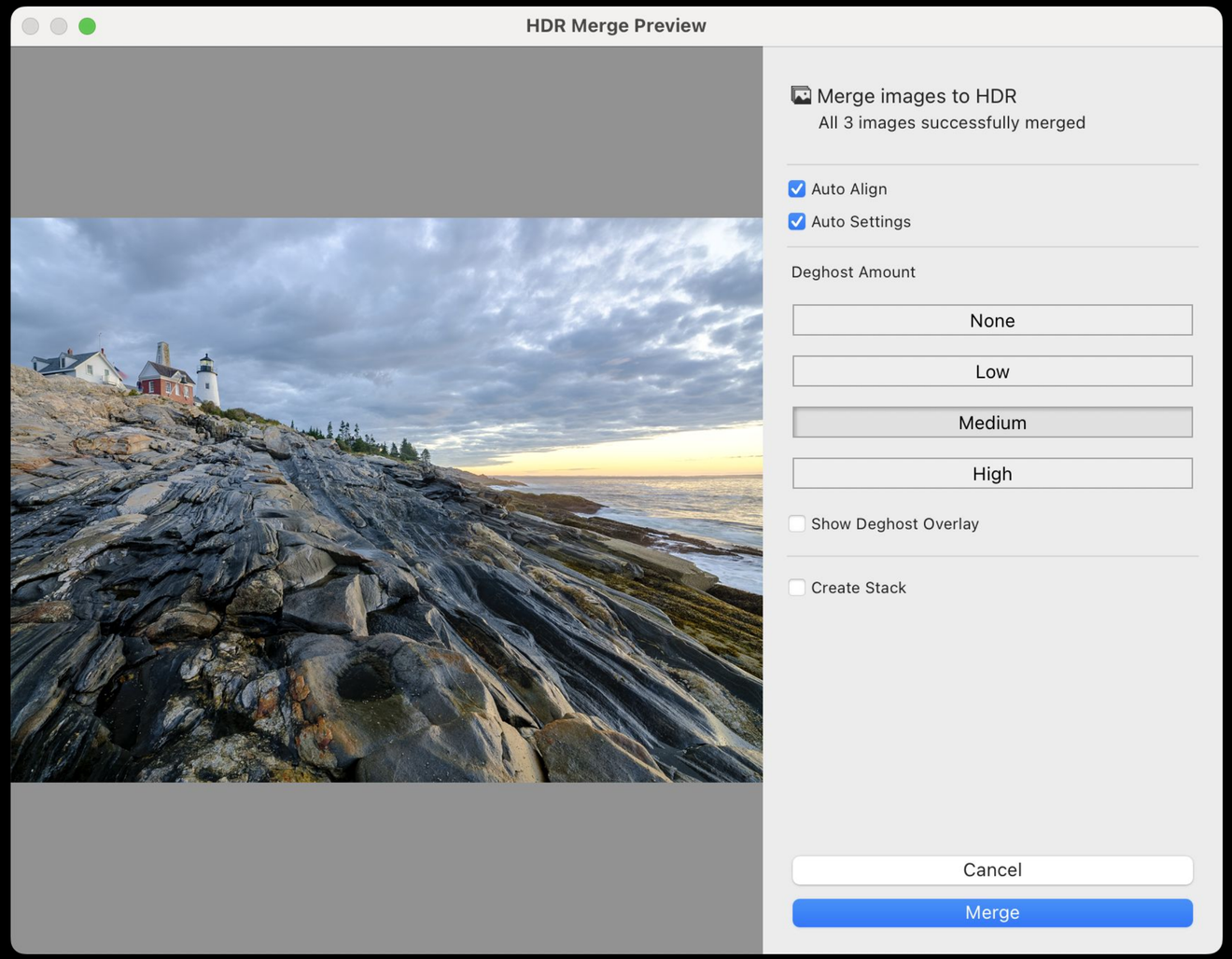
MERGING IN LIGHTROOM

- Select your source images
- Right click (or control-click if you're on a Mac)
- Select Photo Merge -> HDR
- More about the HDR Panorama feature later



MERGING IN LIGHTROOM

- Auto align - this aligns the frames
- Auto settings - similar to the “Auto” option in the Develop module
- Deghost amount - attempts to address movement between the frames
- Show Deghost overlay - this draws a red over the areas of the image which have a lot of movement
- Create Stack - this stacks the frames which were used to create the HDR image, with the final HDR image as the top layer.



GHOSTS!

- Something may move between frames, which can result in a "ghost"
- The deghosting settings can help reduce or eliminate this, depending on how much movement there was between frames
- You may have to do some clean up after the fact
- Unfortunately, sometimes there is too much movement for the software to overcome. Try the image again in a year or two when the tools have improved. You might be pleasantly surprised!

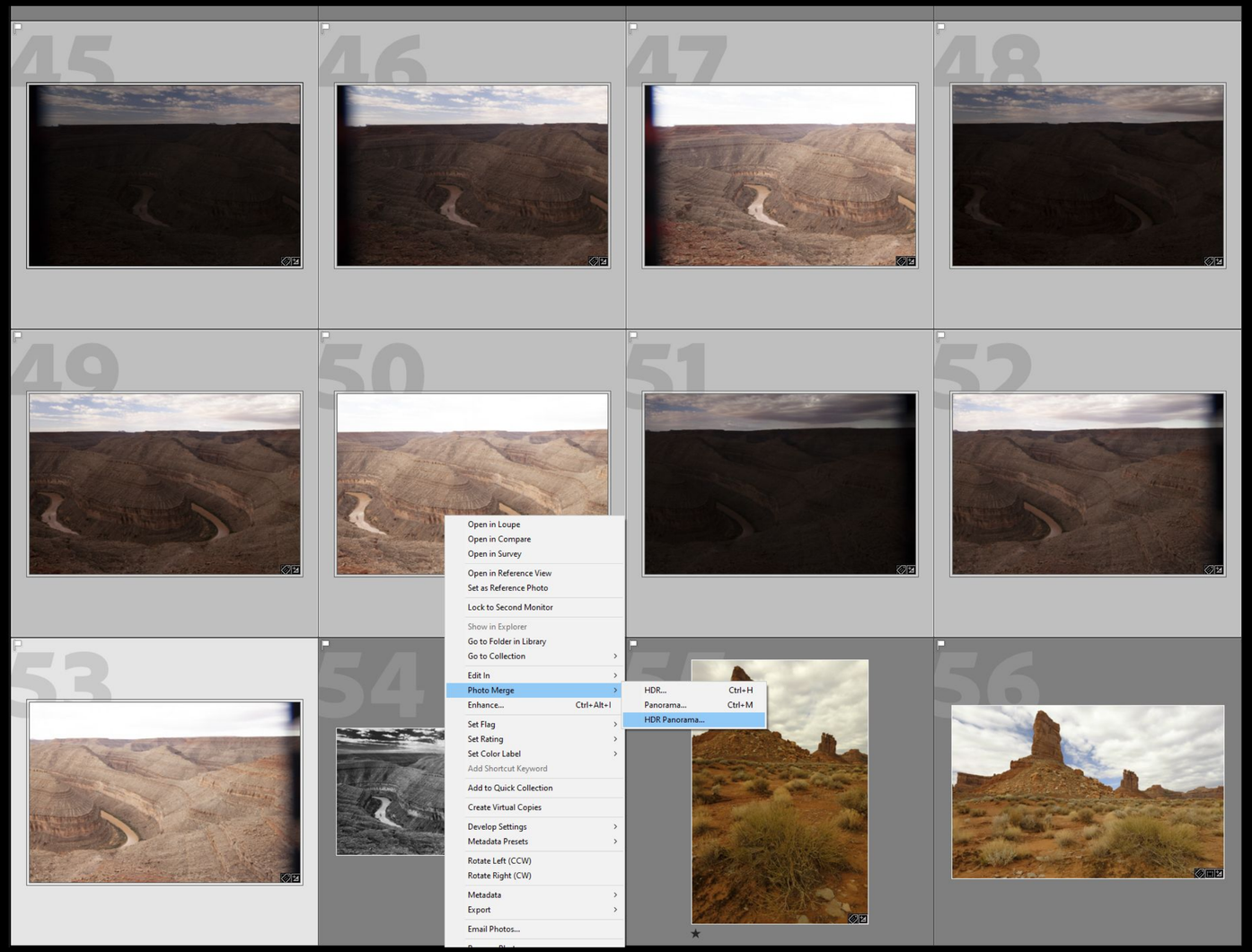
Ghost Car

HDR PANORAMAS

- In recent years a very exciting new feature is HDR panoramas.
- This allows you to stitch together multiple bracketed frames from a panorama into a single HDR image.
- All you have to do is select the frames by right clicking (or control-click on Mac), select “Photo Merge”, and choose “HDR Panorama” instead of “HDR”.

SELECTING THE FRAMES FOR THE PANORAMA

- 9 frames were shot to create this image



MERGING THE PANORAMA

THE FINAL IMAGE

Goosenecks of the San Juan

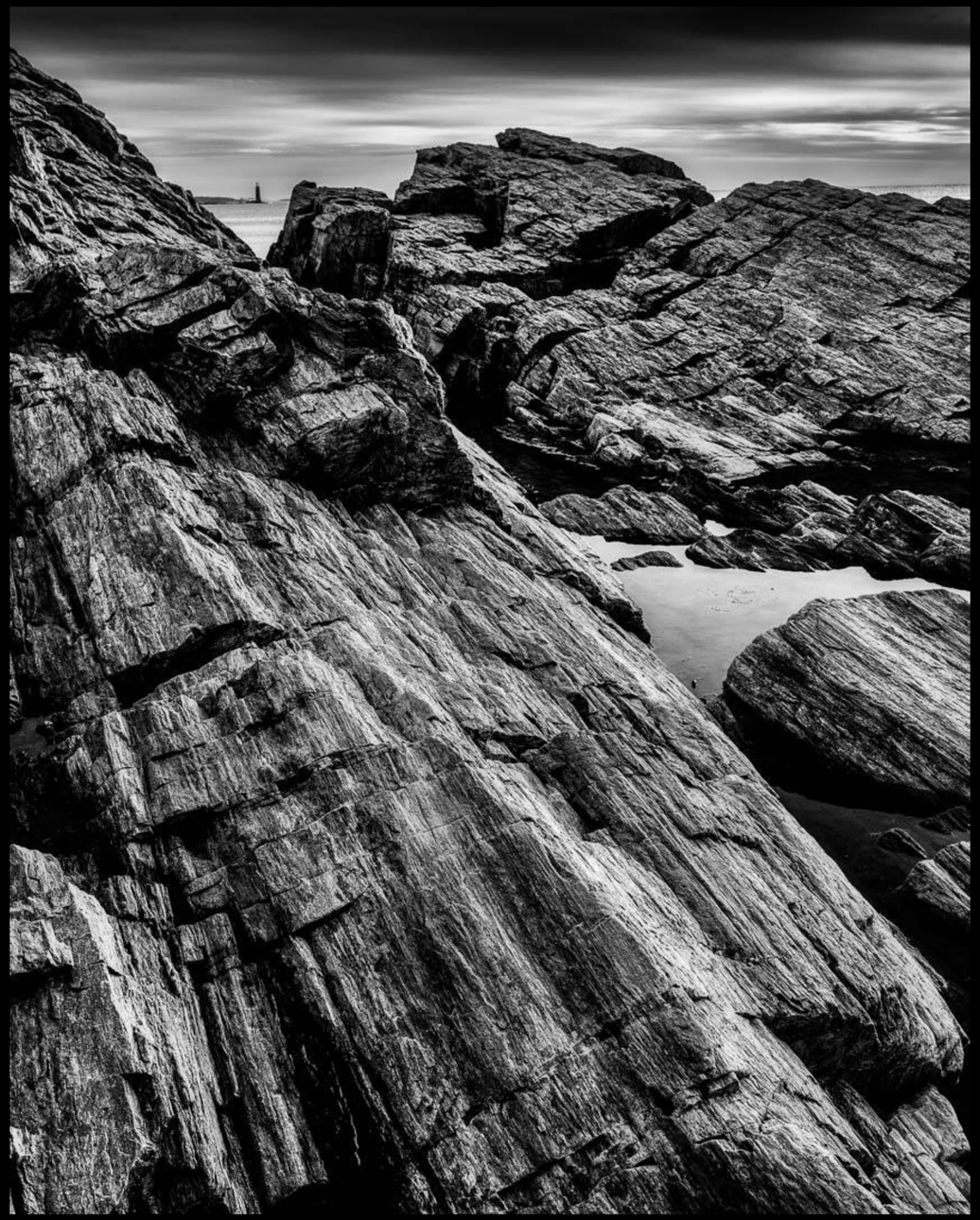
WHAT CAN I DO WITH THE HDR IMAGE?

- Lightroom creates a DNG (digital negative) file for the HDR image
- Once you have this image, you can edit it like any other photo
- Merging the frames to create the HDR image is only the start. After that, your options are endless.

A FEW MORE HDR PHOTOGRAPHS

Green River Overlook In Winter

Bryce Canyon



Ram Island Ledge Lighthouse

Anticline Overlook

Goosenecks of the San Juan

Green River Overlook After a Storm

The Knob

THANK YOU!